Source: T1

Title: CRs to TS 34.121 v.5.4.0 for approval

Agenda item: 5.1.3

Document for: Approval

This document contains the CRs to TS 34.121 v.5.4.0. These CRs have been agreed by T1 and are put forward to TSG T for approval.

Doc-2nd-	Spec	CR	R	Phas	Subject	Cat	Version-	Version-
Level			e	e			Current	New
T1-041017	34.121	395	-	Rel-5	Addition of a new case to Adjacent Channel Selectivity test	F	5.4.0	5.5.0
T1-041034	34.121	396	-	Rel-5	Removal of [] for test case 8.3.5.3 'Cell Reselection to GSM'	D	5.4.0	5.5.0
T1-041058	34.121	397	-	Rel-5	Addition of the integrity protection in messages	F	5.4.0	5.5.0
T1-041076	34.121	398	-	Rel-5	Correction to Cell Re-selection in CELL_PCH and URA_PCH test cases	F	5.4.0	5.5.0
T1-041093	34.121	399	-	Rel-5	Addition of test tolerances to TC 8.4.3	F	5.4.0	5.5.0
T1-041098	34.121	400	-	Rel-5	Revision of Test Tolerances to Event triggered reporting in AWGN propagation conditions, test 8.6.1.1	F	5.4.0	5.5.0
T1-041176	34.121	401	-	Rel-5	Correction of RRM test case 8.7.3A (GSM carrier RSSI)	F	5.4.0	5.5.0
T1-041176	34.121	424	-	Rel-5	Correction of RRM test case 8.7.3A (GSM carrier RSSI)	F	5.4.0	5.5.0
T1-041201	34.121	402	-	Rel-5	Completion of Annex F.6.3 Statistical Testing of HSDPA Receiver Performance	F	5.4.0	5.5.0
T1-041203	34.121	403	-	Rel-5	Correction to the Measurement Control message in 8.7.6 UE Rx-Tx time difference	F	5.4.0	5.5.0
T1-041204	34.121	404	-	Rel-5	Correction to the pathloss indicator in measurement control messages	F	5.4.0	5.5.0
T1-041307	34.121	405	-	Rel-5	Correction to test uncertainty definition of Inner Loop Power Control in the Uplink test case	F	5.4.0	5.5.0
T1-041308	34.121	406	-	Rel-5	Addition of the integrity protection in 5.7 Power setting in uplink compressed mode	F	5.4.0	5.5.0
T1-041311	34.121	407	-	Rel-5	Corrections to Demodulation of DCH in Inter-Cell Soft Handover	В	5.4.0	5.5.0
T1-041314	34.121	408	-	Rel-5	Correction to 7.7.3: Combining of reliable TPC commands from radio links of different radio link sets	F	5.4.0	5.5.0
T1-041316	34.121	409	-	Rel-5	Addition of TPC error rate accuracy to TC 7.7.3	F	5.4.0	5.5.0
T1-041318r4	34.121	432	-	Rel-5	Clarification of OCNS power control	F	5.4.0	5.5.0
T1-041319	34.121	410	-	Rel-5	Test system uncertainties update for test	F	5.4.0	5.5.0

					case 8.3.5.3			
T1-041322	34.121	425	-	Rel-5	Corrections to Annex F.2.4 and F.4.4	F	5.4.0	5.5.0
T1-041325	34.121	411	-	Rel-5	Corrections to UTRA Carrier RSSI test case	F	5.4.0	5.5.0
T1-041326	34.121	412	-	Rel-5	Resolution of downlink code conflict between OCNS DPCH and S-CCPCH	F	5.4.0	5.5.0
T1-041328	34.121	413	-	Rel-5	Addition of the information element for monitor cells in Annex I	F	5.4.0	5.5.0
T1-041329	34.121	426	-	Rel-5	Introduction of Test Tolerances to Event triggered reporting of multiple neighbours in AWGN propagation condition, test 8.6.1.2	F	5.4.0	5.5.0
T1-041333	34.121	414	-	Rel-5	Correction to 5.5.2: Transmit ON/OFF Time mask test case	F	5.4.0	5.5.0
T1-041341	34.121	415	-	Rel-5	Cell configuration mapping	F	5.4.0	5.5.0
T1-041344	34.121	416	-	Rel-5	Test tolerances in 8.4.1 RRC Reestablishment delay	F	5.4.0	5.5.0
T1-041345	34.121	417	-	Rel-5	Completion of Transmitter Intermodulation test 5.12	F	5.4.0	5.5.0
T1-041347r2	34.121	431	-	Rel-5	Correction to test procedure for test cases using Cell_PCH or URA_PCH state	F	5.4.0	5.5.0
T1-041348	34.121	418	-	Rel-5	Correction of reference to generic setup procedure in TS 34.108 for Cell_FACH	F	5.4.0	5.5.0
T1-041349	34.121	419	-	Rel-5	Correction to TC 7.8.3, Power control in the downlink, wind up effects	F	5.4.0	5.5.0
T1-041353	34.121	420	-	Rel-5	Revision of Receiver Spurious Emissions Test 6.8	F	5.4.0	5.5.0
T1-041358	34.121	421	-	Rel-5	Correction to BTFD test case 7.10 and DL dummy DCCH	F	5.4.0	5.5.0
T1-041360	34.121	422	-	Rel-5	Correction to measurement control message in 8.6.1.2	F	5.4.0	5.5.0
T1-041361	34.121	427	-	Rel-5	Correction to 8.6.1.1	F	5.4.0	5.5.0
T1-041362	34.121	423	-	Rel-5	Correction to test case 8.2.3 'UTRAN to GSM Cell Re-Selection'	F	5.4.0	5.5.0
T1-041372	34.121	429	-	Rel-5	Proposed addition of HSDPA downlink code allocation to 34.121 Annex	F	5.4.0	5.5.0
T1-041375	34.121	430	-	Rel-5	Maximum Input Level for HSDPA	F	5.4.0	5.5.0

3GPP TSG-T1 Meeting #24 Toronto, Canada, 24.-30. July, 2004

									CR-Form-v7
			CHANGE	REQ	UE	ST			OKT GIIII VI
*	34.1	21 CR	CRNum3 95	жrev		\mathbb{H}	Current vers	5.4.0	*
For <u>HELP</u> o	n using thi	is form, se	e bottom of this	s page or	look a	at the	e pop-up text	over the ૠ s	ymbols.
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Title:	器 Addit	ion of a ne	ew case to Adja	cent Cha	nnel S	Sele	ctivity test		
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Reason for change: Second requirement for ACS is missing in 34.121.									
Summary of cha	ange: ೫	This CR w change sli	ill add second oghtly paramete and later relea	case for te	est 6.4	4 (Adase	djacent Chan 1. This requir	rement is app	licable to

Reason for change: %	Second requirement for ACS is missing in 34.121.
Summary of change: #	This CR will add second case for test 6.4 (Adjacent Channel selectivity) and change slightly parameters of existing Case 1. This requirement is applicable to Release 5 and later releases. This CR is corresponding TS25.101 CR333 (RP-040036).
Consequences if 第 not approved:	Second case specified in the core specification is not included to test specification. Therefore core specification and test specification are not consistent.

Clauses affected:	₩ 6.4
Othor ange	Y N
Other specs affected:	 X Other core specifications X Test specifications X O&M Specifications
Other comments:	

How to create CRs using this form: Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.4 Adjacent Channel Selectivity (ACS)

6.4.1 Definition and applicability

Adjacent Channel Selectivity (ACS) is a measure of a receiver's ability to receive a W-CDMA signal at its assigned channel frequency in the presence of an adjacent channel signal at a given frequency offset from the centre frequency of the assigned channel. ACS is the ratio of the receive filter attenuation on the assigned channel frequency to the receive filter attenuation on the adjacent channel(s).

The requirements and this test apply to all types of UTRA for the FDD UE.

6.4.2 Minimum Requirements

For the UE of power class 3 and 4, the BER shall not exceed 0,001 for the parameters specified in table 6.4.1. This test condition is equivalent to the ACS value 33 dB.

Table 6.4.1: Test parameters for Adjacent Channel Selectivity for Release 99 and Release 4.

Parameter	Level / Status	Unit
DPCH_Ec	-103	dBm / 3,84 MHz
Îor	-92,7	dBm / 3,84 MHz
I _{oac} mean power (modulated)	-52	dBm
F _{uw} (offset)	−5 or +5	MHz
UE transmitted mean power	20 (for Power class 3)	dBm
	18 (for Power class 4)	

Table 6.4.1.a: Test parameters for Adjacent Channel Selectivity for release 5 and later releases

<u>Parameter</u>	<u>Unit</u>	Case 1	Case 2
DPCH Ec	dBm/3.84 MHz	<refsens> + 14 dB</refsens>	<refsens> + 41 dB</refsens>
<u>Îor</u>	<u>dBm/3.84 MHz</u>	<u><refî₀r< u="">> + 14 dB</refî₀r<></u>	<u>REFÎ_{or}> + 41 dB</u>
<u>loac mean power (modulated)</u>	<u>dBm</u>	<u>-52</u>	<u>-25</u>
F _{uw} (offset)	<u>MHz</u>	<u>+5 or -5</u>	<u>+5 or -5</u>
UE transmitted mean power	<u>dBm</u>	20 (for Power class 3) 18 (for Power class 4)	20 (for Power class 3) 18 (for Power class 4)

The normative reference for these requirements is TS 25.101 [1] clause 7.5.1.

NOTE: The I_{oac} (modulated) signal consists of the common channels needed for tests as specified in table E.4.1 and 16 dedicated data channels as specified in table E.3.6.

6.4.3 Test purpose

To verify that the UE BER does not exceed 0,001 for the test parameters specified in table 6.4.1.

The lack of the ACS decreases the coverage area when other transmitter exists in the adjacent channel.

6.4.4 Method of test

6.4.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.4.

- 2) RF parameters are set up according to table 6.4.2.
- 3) A call is set up according to the Generic call setup procedure specified in TS34.108[3] sub clause 7.3.2, with the following exception for information elements in RADIO BEARER SETUP message. With this exception, the Power Control Algorithm for the Uplink is set to algorithm 2.
- 4) Enter the UE into loopback test mode and start the loopback test.

Table 6.4.1A Contents of RADIO BEARER SETUP message: AM or UM

Information Element	Value/Remark
CHOICE channel requirement	Uplink DPCH info
- Power Control Algorithm	Algorithm2

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

6.4.4.2 Procedure for release 99 and release 4

- 1) Set the parameters of the interference signal generator as shown in table 6.4.2.
- 2) Set the power level of UE according to the table 6.4.2 or send the power control commands (1dB step size should be used.) to the UE until UE output power measured by Test System shall be kept at the specified power level with ±1dB tolerance.
- 3) Measure the BER of DCH received from the UE at the SS.

6.4.4.3 Procedure for release 5 and later releases

- 1) Set the parameters of the interference signal generator as shown in table 6.4.2A case 1.
- 2) Set the power level of UE according to the table 6.4.2A case 1 or send the power control commands (1dB step size should be used.) to the UE until UE output power measured by Test System shall be kept at the specified power level with ±1dB tolerance.
- 3) Measure the BER of DCH received from the UE at the SS.
- 4) Set the parameters of the interference signal generator as shown in table 6.4.2A case 2.
- 5) Set the power level of UE according to the table 6.4.2A case 2 or send the power control commands (1dB step size should be used.) to the UE until UE output power measured by Test System shall be kept at the specified power level with ±1dB tolerance.
- 6) Measure the BER of DCH received from the UE at the SS.

6.4.5 Test requirements

The measured BER, derived in step 1), shall not exceed 0,001.

Table 6.4.2: Test parameters for Adjacent Channel Selectivity for Release 99 and Release 4.

Parameter	Level / Status	Unit
DPCH_Ec	-103	dBm / 3,84 MHz
Îor	-92,7	dBm / 3,84 MHz
I _{oac} mean power (modulated)	-52	dBm
F _{uw} (offset)	−5 or +5	MHz
UE transmitted mean power	20 (for Power class 3) 18 (for Power class 4)	dBm

<u>Table 6.4.2A: Test parameters for Adjacent Channel Selectivity for Release 5 and later releases</u>

<u>Parameter</u>	<u>Unit</u>	Case 1	Case 2
DPCH_Ec	dBm/3.84 MHz	<refsens> + 14 dB</refsens>	<refsens> + 41 dB</refsens>
<u>Î</u> or	dBm/3.84 MHz	<refî<sub>or> + 14 dB</refî<sub>	REFÎ _{or} > + 41 dB
<u>l_{oac} mean power (modulated)</u>	<u>dBm</u>	<u>-52</u>	<u>-25</u>
F _{uw} (offset)	MHz	<u>+5 or -5</u>	<u>+5 or -5</u>
UE transmitted mean power	dBm	20 (for Power class 3)	20 (for Power class 3)
OE transmitted mean power	<u>ubili</u>	18 (for Power class 4)	18 (for Power class 4)

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #24 Toronto, Canada, 26th - 30th July 2004

CHANGE REQUEST						
ж	34.121 CR ³⁹⁶ # rev -	Current version: 5.4.0				
For <u>HELP</u> on t	using this form, see bottom of this page or look at	the pop-up text over the				
Proposed change	affects: UICC apps ME	Access Network Core Network				
Title: \$	Removal of [] for test case 8.3.5.3 'Cell Reselection	ction to GSM'				
Source: 3	QUALCOMM Inc.					
Work item code: 3	TEI	<i>Date:</i>				
	Use one of the following categories: F (correction) A (corresponds to a correction in an earlier release B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Release: # Rel-5 Use one of the following releases: Ph2 (GSM Phase 2)				
Reason for chang	e: 米 The pointer to the reference number in the	e "References" section is not specific				
Summary of chan	ge:					
Consequences if not approved:	光 Test case will not be complete					
Clauses affected:	米 8.3.5.3					
Other specs affected:	Y N X Other core specifications Test specifications O&M Specifications					
Other comments:	置 This CR is applicable for UE's supporting	Rel-99 or later.				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3)	3) With "track changes" disabled, paste the entire CR form (the clause containing the first piece of changed text. Delethe change request.	use CTRL-A to select it) into the specification just in front of ete those parts of the specification which are not relevant to

8.3.5.3 Cell Reselection to GSM

8.3.5.3.1 Definition and applicability

The cell re-reselection delay is defined as the time from the beginning of time period T2, to the moment when the UE starts to transmit the random access in Cell 2 (the GSM cell).

This requirements and this test apply to UE supporting FDD PS and GSM GPRS.

8.3.5.3.2 Minimum requirements

The cell re-selection delay shall be less than $5.5 + T_{RA}$ s.

The rate of correct reselections observed during repeated tests shall be at least 90%.

NOTE: The cell re-selection delay can be expressed

$$T_{\text{reselection, GSM}} = T_{\text{identify,GSM}} + T_{\text{measurement, GSM}} + 40 + T_{\text{BCCH}} + T_{\text{RA}} \text{ ms}$$

where:

T_{identify,GSM} Specified in TS 25.133 [2] clause 8.4.2.5.2.1, here it is 2880 ms

T_{measurement, GSM} Specified in TS 25.133 [2] clause 5.5.2.1.4, here it is 640 ms

 T_{BCCH} According to TS 05.08 [20**], the maximum time allowed to read the BCCH data, when being

synchronized to a BCCH carrier, is 1.9 s.

T_{RA} The additional delay caused by the random access procedure in the GSM cell, is 10 ms (2 GSM

radio frames).

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.4 and A.5.5.3.

	CHANGE REQUEST	CR-Form-v7
*	34.121 CR 397 #rev = #	Current version: 5.4.0
For <u>HELP</u> o	on using this form, see bottom of this page or look at the	e pop-up text over the X symbols.
Proposed chan	ge affects: UICC apps業 ME X Radio A	ccess Network Core Network
Title:	★ Addition of the integrity protection in messages	
Source:	₩ Anritsu	
Work item code	e: #	Date: 第 26/07/2004
Category:	# F Use one of the following categories: F (correction) A (corresponds to a correction in an earlier release B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Release: # Rel-5 Use one of the following releases: 2 (GSM Phase 2) e) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)
Reason for cha	nge: 器 The function of integrity protection is missing.	
Summary of ch	ange: ## Integrity check information is added in messa	ges.
Consequences not approved:	if # Integrity protection will not be permitted and princonsistent with messages supported for integrity inconsistent with messages supported for integrity protection will not be permitted and principle.	
Clauses affecte	d :	8.6.2,8.6.3,8.6.4,8.7.1,8.7.2,8.7.3,
Other specs affected:	Y N X Other core specifications X Test specifications O&M Specifications	

How to create CRs using this form:

Other comments:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

This CR applies for Rel-99 and later releases.

- 1) Fill out the above form. The symbols above marked \$\mathbb{K}\$ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.4.2 Inner Loop Power Control in the Uplink

5.4.2.1 Definition and applicability

Inner loop power control in the uplink is the ability of the UE transmitter to adjust its output power in accordance with one or more TPC commands received in the downlink.

The power control step is the change in the UE transmitter output power in response to a single TPC command, TPC_cmd, derived at the UE.

This clause does not cover all the requirements of compressed mode or soft handover.

The requirements and this test apply to all types of UTRA for the FDD UE.

5.4.2.2 Minimum requirements

The UE transmitter shall have the capability of changing the output power with a step size of 1 dB, 2 dB and 3 dB according to the value of Δ_{TPC} or Δ_{RP-TPC} , in the slot immediately after the TPC_cmd can be derived.

- a) The transmitter output power step due to inner loop power control shall be within the range shown in table 5.4.2.1.
- b) The transmitter aggregate output power step due to inner loop power control shall be within the range shown in table 5.4.2.2. Here a TPC_cmd group is a set of TPC_cmd values derived from a corresponding sequence of TPC commands of the same duration.

The inner loop power step is defined as the relative power difference between the mean power of the original (reference) timeslot and the mean power of the target timeslot, not including the transient duration. The transient duration is from $25\mu s$ before the slot boundary to $25\mu s$ after the slot boundary.

TPC cmd Transmitter power control range (all units are in dB) 1 dB step size 2 dB step size 3 dB step size Lower Upper Lower Upper Lower Upper +1 +0,5 +1,5 +1 +3 +1,5 +4,5 0 -0,5 +0,5 +0,5 -0,5 +0,5 -0,5 -1 -0,5 -1,5 -1 -3 -1,5 -4,5

Table 5.4.2.1: Transmitter power control range

Table 5.4.2.2: Transmitter aggregate power control tolerance

TPC_cmd group	Transmitter power control range after 10 equal TPC_cmd group (all units are in dB)			Transmiti control rai equal TI gro (all units	nge after 7 PC_cmd	
	1 dB step size 2 dB step size			3 dB step size		
	Lower	Upper	Lower	Upper	Lower	Upper
+1	+8	+12	+16	+24	+16	+26
0	-1	+1	-1	+1	-1	+1
-1	-8	-12	-16	-24	-16	-26
0,0,0,0,+1	+6	+14	N/A	N/A	N/A	N/A
0,0,0,0,-1	-6	-14	N/A	N/A	N/A	N/A

The UE shall meet the above requirements for inner loop power control over the power range bounded by the Minimum output power as defined in clause 5.4.3.2, and the Maximum output power supported by the UE (i.e. the actual power as would be measured assuming no measurement error). This power shall be in the range specified for the power class of the UE in clause 5.2.2.

NOTE: 3 dB inner loop power control steps are only used in compressed mode.

The reference for this requirement is TS 25.101 [1] clause 6.4.2.1.1.

The requirements for the derivation of TPC_cmd are detailed in TS 25.214 [5] clauses 5.1.2.2.2 and 5.1.2.2.3.

5.4.2.3 Test purpose

- To verify that the UE inner loop power control size and response is meet to the described value shown in clause 5.4.2.2.
- To verify that TPC_cmd is correctly derived from received TPC commands.

An excess error of the inner loop power control decreases the system capacity.

The UE shall be tested for the requirements for inner loop power control over the power range bounded by the Min power threshold for test and the Max power threshold for test.

The Min power threshold for test is defined as the Minimum Output Power Test Requirement (clause 5.4.3.5).

The Max power threshold for test is defined as the Measured Maximum output power of the UE in the relevant Step of the test (using the same method as in clause 5.2.4.2 step 2) minus the Test Tolerance specified for test 5.2 Maximum Output Power in table F.2.1.

For the final power step adjacent to the Min or Max power threshold for test, the lower step size requirement does not apply.

5.4.2.4 Method of test

5.4.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect the SS to the UE antenna connector as shown in figure A.1.
- 2) A call is set up according to the Generic call setup procedure specified in TS34.108 [3] sub clause 7.3.2, with the following exception for information elements in RADIO BEARER SETUP message. With this exception, the Power Control Algorithm for the Uplink is set to algorithm 2.

Table 5.4.2.4.1: Contents of RADIO BEARER SETUP message: AM or UM

Value/Remark
DPCH info hm 2

3) Enter the UE into loopback test mode and start the loopback test.

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

5.4.2.4.2 Procedure

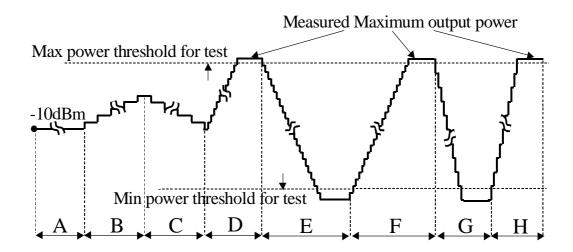


Figure 5.4.2.4 Inner Loop Power Control Test Steps

- 1) Before proceeding with paragraph (2) (Step A) below, set the output power of the UE, measured at the UE antenna connector, to be in the range -10 ± 9 dBm. This may be achieved by setting the downlink signal (\hat{I}_{or}) to yield an appropriate open loop output power and/or by generating suitable downlink TPC commands from the SS.
- 2) Step A: Transmit a sequence of at least 30 and no more than 60 TPC commands, which shall commence at a frame boundary and last for a whole number of frames, and which shall contain:
 - no sets of 5 consecutive "0" or "1" commands which commence in the 1^{st} , 6^{th} or 11^{th} slots of a frame;
 - at least one set of 5 consecutive "0" commands which does not commence in the 1, 6 or 11 slots of a frame;
 - at least one set of 5 consecutive "1" commands which does not commence in the 1st, 6th or 11th slots of a frame

The following is an example of a suitable sequence of TPC commands:

- 3) Step B: Transmit a sequence of 50 TPC commands with the value 1.
- 4) Step C: Transmit a sequence of 50 TPC commands with the value 0.
- 5) Step D: Transmit the PHYSICAL CHANNEL RECONFIGURATION message to reconfigure the uplink channel in order to set the Power Control Algorithm to algorithm 1, and the TPC step size to 1 dB. Contents of the message is specified in the table 5.4.2.4.2.A. After the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE is received, transmit a sequence of TPC commands with the value 1 until the UE output power is above the maximum power threshold.
- 6) Step E: Transmit a sequence of 150 (note 1) TPC commands with the value 0.
- 7) Step F: Transmit a sequence of 150 (note 1) TPC commands with the value 1.
- 8) Step G: Transmit the PHYSICAL CHANNEL RECONFIGURATION message to reconfigure the uplink channel in order to set the TPC step size to 2 dB (with the Power Control Algorithm remaining as algorithm 1). Contents of the message is specified in the table 5.4.2.4.2.B. After the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE is received, transmit a sequence of TPC commands with the value 1 until the UE output power is above the maximum power threshold. Transmit a sequence of 75 (note 1) TPC commands with the value 0.
- 9) Step H: Transmit a sequence of 75 (note 1) TPC commands with the value 1.

10) During steps A to H the mean power of every slot shall be measured, with the following exceptions:

- In steps D and F, measurement of the mean power is not required in slots after the 10th slot after the mean power has exceeded the maximum power threshold;
- In steps E and G, measurement of the mean power is not required in slots after the 10th slot after the mean power has fallen below the minimum power threshold.

The transient periods of $25 \mu s$ before each slot boundary and $25 \mu s$ after each slot boundary shall not be included in the power measurements.

- NOTE 1: These numbers of TPC commands are given as examples. The actual number of TPC commands transmitted in these steps shall be at least 10 more than the number required to ensure that the UE reaches the relevant maximum or minimum power threshold in each step, as shown in figure 5.4.2.4.
- NOTE 2: In order to make it more practical to measure the entire power control dynamic range (between min power threshold and max power threshold with suitable margins), it is permissible to segment the power control sequences into smaller subsequence. For example, Step-E can be divided into different stages while still fulfilling the purpose of the test to measure the entire dynamic range.

Table 5.4.2.4.2.A: PHYSICAL CHANNEL RECONFIGURATION message for step D (step 5)

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
DDC massage services a number	significant bit of the MAC-I.
- RRC message sequence number	SS provides the value of this IE, from its internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	1100111
-CN Information info	Not Present
UTRAN mobility information elements	THE TREE THE STATE OF THE STATE
-URA identity	Not Present
RB information elements	THE TRUE TO SO THE TO SO T
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
-CHOICE channel requirement	Uplink DPCH info
-Uplink DPCH power control info	·
-CHOICE mode	FDD
-DPCCH Power offset	-6dB
-PC Preamble	1 frame
-SRB delay	7 frames
-Power Control Algorithm	Algorithm 1
-TPC step size	1dB
-CHOICE mode	FDD
-Scrambling code type	Long
-Scrambling code number	0
-Number of DPDCH	1
-spreading factor	64
-TFCI existence	TRUE
-Number of FBI bits	Not Present(0)
-Puncturing Limit	1
Downlink radio resources	500
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	Not Present
-Downlink information per radio link list	Not Present

Table 5.4.2.4.2.B: PHYSICAL CHANNEL RECONFIGURATION message for step G (step 8)

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
-CHOICE channel requirement	Uplink DPCH info
-Uplink DPCH power control info	
-CHOICE mode	FDD
-DPCCH Power offset	-6dB
-PC Preamble	1 frame
-SRB delay	7 frames
-Power Control Algorithm	Algorithm 1
-TPC step size	2dB
-CHOICE mode	FDD
-Scrambling code type	Long
-Scrambling code number -Number of DPDCH	0
	1 64
-spreading factor	
-TFCI existence -Number of FBI bits	TRUE Not Present(0)
-Number of FBI bits -Puncturing Limit	1101 F165611(0)
Downlink radio resources	1
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink PDSCH Illionnation -Downlink information common for all radio links	Not Present
-Downlink information common for all radio links -Downlink information per radio link list	Not Present
-טסארוווחג ווווטחוזמנוטח per fadio iink iist	NOT LIGSGUE

5.4.2.5 Test requirements

Table 5.4.2.5.1: Transmitter power control range

TPC_cmd	Transmitter power control range (all units are in dB)					
	1 dB step size		1 dB step size 2 dB step size		3 dB step size	
	Lower	Upper	Lower	Upper	Lower	Upper
+1	+0,4	+1,6	+0,85	+3,15	+1,3	+4,7
0	-0,6	+0,6	-0,6	+0,6	-0,6	+0,6
-1	-0,4	-1,6	-0,85	-3,15	-1,3	-4,7

TPC_cmd group	Transmitte	TPC_cmd group contr (all units are in dB) equ			control rai equal Ti gro	ter power nge after 7 PC_cmd ups are in dB)
	1 dB st	1 dB step size 2 dB step size			3 dB step size	
	Lower	Upper	Lower	Upper	Lower	Upper
+1	+7,7	+12,3	+15,7	+24,3	+15,7	+26,3
0	-1,1	+1,1	-1,1	+1,1	-1,1	+1,1
-1	-7,7	-12,3	-15,7	-24,3	-15,7	-26,3
0,0,0,0,+1	+5,7	+14,3	N/A	N/A	N/A	N/A
0,0,0,0,-1	-5,7	-14,3	N/A	N/A	N/A	N/A

Table 5.4.2.5.2: Transmitter aggregate power control tolerance

- a) During Step A, the difference in mean power between adjacent slots shall be within the prescribed range for a TPC_cmd of 0, as given in table 5.4.2.5.1.
- b) During Step A, the change in mean power over 10 consecutive slots shall be within the prescribed range for a TPC_cmd group of 0, as given in table 5.4.2.5.2.
- c) During Step B, the difference in mean power between adjacent slots shall be within the prescribed range given in table 5.4.2.5.1, given that every 5 TPC_cmd should have the value +1, with a step size of 1 dB, and all other TPC_cmd should have the value 0.
- d) During Step B, the change in mean power over 50 consecutive slots shall be within the prescribed range for a TPC_{cmd} group of $\{0,0,0,0,+1\}$, as given in table 5.4.2.5.2.
- e) During Step C, the difference in mean power between adjacent slots shall be within the prescribed range given in table 5.4.2.5.1, given that every 5 TPC_cmd should have the value -1, with a step size of 1 dB, and all other TPC cmd should have the value 0.
- f) During Step C, the change in mean power over 50 consecutive slots shall be within the prescribed range for a TPC_cmd group of {0,0,0,0,-1}, as given in table 5.4.2.5.2.
- g) During Step E, the difference in mean power between adjacent slots shall be within the prescribed range given in table 5.4.2.5.1 for a TPC_cmd of -1 and step size of 1 dB. This applies when the original (reference) timeslot power and the target timeslot power are between the Min power threshold for test and the Max power threshold for test derived from the Measured Maximum output power in Step D. For the power step adjacent to the Min or Max power threshold for test, the lower step size requirement does not apply.
- h) During Step E, the change in mean power over 10 consecutive slots shall be within the prescribed range for a TPC_cmd group of -1, and step size of 1 dB as given in table 5.4.2.5.2. This applies when the original (reference) timeslot power and the target timeslot power are between the Min power threshold for test and the Max power threshold for test derived from the Measured Maximum output power in Step D. The power step adjacent to the Min or Max power threshold for test should not be part of the 10 consecutive slots tested.
- i) During Step F, the difference in mean power between adjacent slots shall be within the prescribed range given in table 5.4.2.5.1 for a TPC_cmd of +1 and step size of 1 dB. This applies when the original (reference) timeslot power and the target timeslot power are between the Min power threshold for test and the Max power threshold for test derived from the Measured Maximum output power in Step F. For the power step adjacent to the Min or Max power threshold for test, the lower step size requirement does not apply.
- j) During Step F, the change in mean power over 10 consecutive slots shall be within the prescribed range for a TPC_cmd group of +1, and step size of 1 dB as given in table 5.4.2.5.2. This applies when the original (reference) timeslot power and the target timeslot power are between the Min power threshold for test and the Max power threshold for test derived from the Measured Maximum output power in Step F. The power step adjacent to the Min or Max power threshold for test should not be part of the 10 consecutive slots tested.

- k) During Step G, the difference in mean power between adjacent slots shall be within the prescribed range given in table 5.4.2.5.1 for a TPC_cmd of -1 and step size of 2 dB. This applies when the original (reference) timeslot power and the target timeslot power are between the Min power threshold for test and the Max power threshold for test derived from the Measured Maximum output power in Step F. For the power step adjacent to the Min or Max power threshold for test, the lower step size requirement does not apply.
- 1) During Step G, the change in mean power over 10 consecutive slots shall be within the prescribed range for a TPC_cmd group of -1, and step size of 2 dB as given in table 5.4.2.5.2. This applies when the original (reference) timeslot power and the target timeslot power are between the Min power threshold for test and the Max power threshold for test derived from the Measured Maximum output power in Step F. The power step adjacent to the Min or Max power threshold for test should not be part of the 10 consecutive slots.
- m) During Step H, the difference in mean power between adjacent slots shall be within the prescribed range given in table 5.4.2.5.1 for a TPC_cmd of +1 and step size of 2 dB. This applies when the original (reference) timeslot power and the target timeslot power are between the Min power threshold for test and the Max power threshold for test derived from the Measured Maximum output power in Step H. For the power step adjacent to the Min or Max power threshold for test, the lower step size requirement does not apply.
- n) During Step H, the change in mean power over 10 consecutive slots shall be within the prescribed range for a TPC_cmd group of +1, and step size of 2 dB as given in table 5.4.2.5.2. This applies when the original (reference) timeslot power and the target timeslot power are between the Min power threshold for test and the Max power threshold for test derived from the Measured Maximum output power in Step H. The power step adjacent to the Min or Max power threshold for test should not be part of the 10 consecutive slots tested.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

7.6.3 Demodulation of DCH in Site Selection Diversity Transmission Power Control mode

7.6.3.1 Definition and applicability

The bit error characteristics of UE receiver is determined in Site Selection Diversity Transmission Power Control (SSDT) mode. Two Node B emulators are required for this performance test. The delay profiles of signals received from different base stations are assumed to be the same but time shifted by 10 chip periods.

The requirements and this test apply to all types of UTRA for the FDD UE.

7.6.3.2 Minimum requirements

The downlink physical channels and their relative power to Ior are the same as those specified in clause E.3.3 irrespective of Node Bs and the test cases. DPCH_Ec/Ior value applies whenever DPDCH in the cell is transmitted. In Test 1 and Test 3, the received powers at UE from two Node Bs are the same, while 3dB offset is given to one that comes from one of Node Bs for Test 2 and Test 4 as specified in table 7.6.3.1.

For the parameters specified in table 7.6.3.1 the average downlink $\underline{DPCH_{-}E_{c}}$ power ratio shall be below the specified I_{or}

value for the BLER shown in table 7.6.3.2.

Table 7.6.3.1: DCH parameters in multi-path propagation conditions during SSDT mode (Propagation condition: Case 1)

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Phase reference	P-CPICH				
\hat{I}_{or1}/I_{oc}	0	-3	0	0	dB
\hat{I}_{or2}/I_{oc}	0	0	0	-3	dB
I_{oc}		_	60		dBm / 3,84 MHz
Information Data Rate	12,2	12,2	12,2	12,2	kbps
Cell ID code word error ratio in uplink (note)	1	1	1	1	%
Number of FBI bits assigned to "S" Field	1	1	2	2	
Code word Set	Long	Long	Short	Short	
UL DPCCH slot Format	#	2	#	[‡] 5	
NOTE: The code word errors are introduced independently in both uplink channels.					

Table 7.6.3.2: DCH requirements in multi-path propagation conditions during SSDT Mode

Test Number	$\frac{DPCH_E_c}{I_{or}}$	BLER
1	−6,0 dB	10 ⁻²
2	−5,0 dB	10 ⁻²
3	−10,5 dB	10 ⁻²
4	−9,2 dB	10 ⁻²

The reference for this requirement is TS 25.101 [1] clause 8.6.3.1.

7.6.3.3 Test purpose

To verify that UE reliably demodulates the DPCH of the selected Node B while site selection diversity is enabled during soft handover.

7.6.3.4 Method of test

7.6.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect two SS's, multi-path fading simulators and an AWGN source to the UE antenna connector as shown in figure A.11.
- 2) Activate one of two cells (Cell 1).
- 3) Set up a call according to the Generic call setup procedure specified in TS 34.108 [3] clause 7.3.2, with the exceptions for information elements listed in table 7.6.3.3A. With these exceptions, necessary information for SSDT mode is sent to the UE.
- 4) Activate the other cell (Cell 2) on the other SS.
- 5) RF parameters are set up according to table 7.6.3.4 and table 7.6.3.5
- 6) After receiving MEASUREMENT REPORT message from the UE, send the ACTIVESET UPDATE message from Cell 1 to the UE in order to activate SSDT mode. Contents of the message is specified in table 7.6.3.3B
- 7) Enter the UE into loopback test mode and start the loopback test.
- 8) Set up fading simulators as fading condition case 1, which is described in table D.2.2.1.

Table 7.6.3.3A: Specific Message Contents for SSDT mode

RRC CONNECTION SETUP for Test 1 and Test 2

Information Element	Value/remark
Downlink information common for all radio links	
- CHOICE mode	FDD
- SSDT information	
- S field	1
- Code Word Set	long
Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Downlink DPCH info for each RL	
- SSDT Cell Identity	a

RRC CONNECTION SETUP for Test 3 and Test 4

Information Element	Value/remark
Downlink information common for all radio links	
- CHOICE mode	FDD
- SSDT information	
- S field	2
- Code Word Set	short
Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Downlink DPCH info for each RL	
- SSDT Cell Identity	a

RADIO BEARER SETUP for Test 1 and Test 2

Information Element	Value/remark
Downlink information common for all radio links	
- CHOICE mode	FDD
- SSDT information	
- S field	1
- Code Word Set	long
Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Downlink DPCH info for each RL	
- SSDT Cell Identity	a

RADIO BEARER SETUP for Test 3 and Test 4

Information Element	Value/remark
Downlink information common for all radio links	
- CHOICE mode	FDD
- SSDT information	
- S field	2
- Code Word Set	short
Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Downlink DPCH info for each RL	
- SSDT Cell Identity	a

Table 7.6.3.3B: Message Contents of ACTIVESET UPDATE message

ACTIVESET UPDATE for Test 1 and Test 2

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
- RRC transaction identifier	0
- Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this message and
	writes to this IE. The first/ leftmost bit of the bit string
	contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal
	counter.
- Activation time	"now".
- New U-RNTI	Not Present
CN information elements	
- CN Information info	Not Present
Phy CH information elements	
Uplink radio resources	
- Maximum allowed UL TX power	33 dBm
Downlink radio resources	
- Radio link addition information	1
- Radio link addition information	
- Primary CPICH info	Same as defined in Cell2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
Primary CPICH usage for channel estimation DPCH frame offset	Primary CPICH may be used
- DPCH frame offset	This should be refriected by the IE" Cell synchronisation
	information" in received MEASUREMENT REPORT
Cocondany CDICH into	message Not Present
- Secondary CPICH info - DL channelisation code	Not Present
- Secondary scrambling code	Not Present
- Secondary scrambling code - Spreading factor	128
- Code number	96
- Scrambling code change	No code change
- TPC combination index	0
- SSDT Cell Identity	b
- Closed loop timing adjustment mode	Not Present
- TFCI combining indicator	FALSE
- SCCPCH Information for FACH	Not Present
- Radio link removal information	Not Present
- TX Diversity Mode	None
- SSDT information	
- S field	1
- Code Word Set	long

ACTIVESET UPDATE for Test 3 and Test 4

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
- RRC transaction identifier	0
- Integrity check info	Not Present
- message authentication code	SS calculates the value of MAC-I for this message and
	writes to this IE. The first/ leftmost bit of the bit string
	contains the most significant bit of the MAC-I.
- RRC message sequence number	SS provides the value of this IE, from its internal
	counter.
- Activation time	"now".
- New U-RNTI	Not Present
CN information elements	
- CN Information info	Not Present
Phy CH information elements	
Uplink radio resources	
- Maximum allowed UL TX power	33 dBm
Downlink radio resources	
- Radio link addition information	1
- Radio link addition information	
- Primary CPICH info	Same as defined in Cell2
- Downlink DPCH info for each RL	500
- CHOICE mode	FDD
 Primary CPICH usage for channel estimation DPCH frame offset 	Primary CPICH may be used
- DPCH frame offset	This should be refriected by the IE" Cell synchronisation
	information" in received MEASUREMENT REPORT
- Secondary CPICH info	message Not Present
- DL channelisation code	Not i lesent
- Secondary scrambling code	Not Present
- Spreading factor	128
- Code number	96
- Scrambling code change	No code change
- TPC combination index	0
- SSDT Cell Identity	b
- Closed loop timing adjustment mode	Not Present
- TFCI combining indicator	FALSE
- SCCPCH Information for FACH	Not Present
- Radio link removal information	Not Present
- TX Diversity Mode	None
- SSDT information	
- S field	2
- Code Word Set	short

7.6.3.4.2 Procedure

Measure BLER in points specified in table 7.6.3.4.

7.6.3.5 Test Requirements

For the parameters specified in table 7.6.3.4 the average downlink $\frac{DPCH_{-}E_{c}}{I_{or}}$ power ratio shall be below the specified value for the BLER shown in table 7.6.3.5.

Table 7.6.3.4: DCH parameters in multi-path propagation conditions during SSDT mode (Propagation condition: Case 1)

Parameter	Test 1	Test 2	Test 3	Test 4	Unit		
Phase reference		P-CPICH					
\hat{I}_{or1}/I_{oc}	0,8	-2,2	0,8	0,8	dB		
\hat{I}_{or2}/I_{oc}	0,8	0,8	0,8	-2,2	dB		
I_{oc}		-60					
Information Data Rate	12,2	12,2	12,2	12,2	kbps		
Cell ID code word error ratio in uplink (note)	1	1	1	1	%		
Number of FBI bits assigned to "S" Field	1	1	2	2			
Code word Set	Long	Long	Short	Short			
UL DPCCH slot Format	#2 #5						
NOTE: The code word errors are introduced independently in both uplink channels.							

Table 7.6.3.5: DCH requirements in multi-path propagation conditions during SSDT mode

Test Number	$\frac{DPCH_E_c}{I_{or}}$	BLER
1	−5,9 dB	10 ⁻²
2	−4,9 dB	10 ⁻²
3	−10,4 dB	10 ⁻²
4	−9,1 dB	10 ⁻²

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3 UTRAN Connected Mode Mobility

8.3.1 FDD/FDD Soft Handover

8.3.1.1 Definition and applicability

The active set update delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying soft handover to the switch off of the old downlink DPCH.

The requirements and this test apply to the FDD UE.

8.3.1.2 Minimum requirement

The active set update delay is defined as the time from when the UE has received the ACTIVE SET UPDATE message from UTRAN, or at the time stated through the activation time when to perform the active set update, to the time when the UE successfully uses the set of radio links stated in that message for power control.

The active set update delay is depending on the number of known cells referred to in the ACTIVE SET UPDATE message. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE.

And the phase reference is the primary CPICH.

The active set update delay shall be less than 50+10*KC+100*OC ms, where

KC is the number of known cells in the active set update message.

OC is the number of cells that are not known in the active set update message.

If the UE have radio links in the active set that it can not use for data detection (due to low signal level), the UE shall at least every 150 ms search for the radio link.

The normative reference for this requirement is TS 25.133 [2] clauses 5.1.2 and A.5.1.1. The active set update delay shall be less than 60 ms in CELL_DCH state when using test parameters as given in table 8.3.1.1.1.

8.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.1.4 Method of test

8.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1.1.1 and 8.3.1.1.2 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A shall be used, and that CPICH Ec/Io and SFN-CFN observed time difference shall be reported together with Event 1A. The test consists of six successive time periods, with a time duration of T1, T2, T3, T4, T5 and T6 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

Table 8.3.1.1.1: General test parameters for Soft handover

Parameter		Unit	Value	Comment		
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1 and C.2.1		
Power Contro	ol		On			
Target quality	y value on	BLER	0.01			
Initial	Active cell		Cell 1			
conditions	Neighbouring cell		Cell 2			
Final condition	Active cell		Cell 2			
Reporting rar	Reporting range		3	Applicable for event 1A and 1B		
Hysteresis	Hysteresis		0			
W	W		1	Applicable for event 1A and 1B		
Reporting deactivation threshold			0	Applicable for event 1A		
Time to Trigg	jer	ms	0			
Filter coeffici	ent		0			
T1		S	5			
T2	T2		3			
T3	T3		s		0.5	
T4		ms	60	This is the requirement on active set update delay, see clause 8.3.1.2, where KC=1 and OC=0.		
T5	<u>-</u>	S	10			
T6		S	2			

Table 8.3.1.1.2: Cell specific test parameters for Soft handover

Parameter	Unit			Cell 1						Cell 2			
		T1	T2	Т3	T4	T5	T6	T1	T2	Т3	T4	T 5	T 6
CPICH_Ec/lor	dB		<u>l</u>	-10	1	1		I		-10	1	<u> </u>	
PCCPCH_Ec/lor	dB			-12						-12			
SCH_Ec/lor	dB			-12						-12			
PICH_Ec/lor	dB			-15						-15			
DPCH_Ec/lor	dB	Note1	Note1	No	te1	N/ A	N/ A	N/A	N/A	Note3	Note1	No	:e1
OCNS_Ec/lor	dB	Note2	Note2	Note2		0.9 4	- 0.9 4	-0.94	-0.94	Note2	Note2	No	e2
\hat{I}_{or}/I_{oc}	dB	0	2.91	2.9	91	2.9	2.9 1	-Inf	2.91	2.91	2.91	2.9	1
I_{oc}	dBm/3. 84 MHz							-70				<u> </u>	
CPICH_Ec/Io	dB	-13	-14	-1	4	-14	-14	-Inf	-14	-14	-14		14
Propagation Condition							F	WGN					
Relative delay of paths received from cell 2 with respect to cell 1	chips							8 148} Note 4					

Note 1: The DPCH level is controlled by the power control loop

8.3.1.4.2 Procedure

- 1) The RF parameters are set up according to T1 in table 8.3.1.1.3.
- 2) The UE is switched on.

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}

Note 3: The DPCH level is controlled by the power control loop. The initial power shall be set equal to the DPCH_Ec/lor of Cell 1 at the end of T2

Note 4: The relative delay of the path from cell 2 with respect to cell 1 shall always be within ±148 chip.

- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) 5 seconds after step4 has completed, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1A containing the CFN-SFN observed time difference between cell 1 and cell 2.
- 7) At the beginning of T3 the downlink DPCH of cell 2 shall be activated.
- 8) SS shall send an ACTIVE SET UPDATE message with activation time "now", adding cell 2 to the active set. The ACTIVE SET UPDATE message shall be sent to the UE so that the whole message is available at the UE at the beginning of T4.
- 9) At the beginning of T5 the DPCH from cell 1 shall be switched off.
- 10) The UE downlink BLER shall be measured during time period T6.
- 11)5 seconds after step10 has completed, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 12) BLER is measured during concatenated time periods T6.Repeat step 1-11 until the confidence level for BLER is achieved. This is defined in annex F.6.1.10

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	value/Remark
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
message admentication code	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
The massage as quanto manuscr	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	TDUE (Note 4)
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator -CHOICE mode	TRUE FDD
	TRUE
-CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	FALSE
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold -Replacement activation threshold	0 Not Present
-Replacement activation threshold -Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 2)
-Reporting interval -Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
1.75.510010	

Information Element/Group name	Value/Remark
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	Not Present
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.

Note 2: Reporting interval = 0 ms means no periodical reporting

ACTIVE SET UPDATE message (step 8):

Information Element/Group name	Type and reference	Value/Remark
Message Type	Message Type	
UE information elements		
RRC transaction identifier	RRC transaction identifier	0
	10.3.3.36	
Integrity check info	Integrity check info 10.3.3.16	Not Present
message authentication code		SS calculates the value of MAC-
		I for this message and writes to
		this IE. The first/ leftmost bit of
		the bit string contains the most
		significant bit of the MAC-I.
RRC message sequence number		SS provides the value of this IE,
		from its internal counter.
Integrity protection mode info	Integrity protection mode info 10.3.3.19	Not Present
Ciphering mode info	Ciphering mode info 10.3.3.5	Not Present
Activation time	Activation time 10.3.3.1	"now".
New U-RNTI	U-RNTI 10.3.3.47	Not Present
CN information elements		
CN Information info	CN Information info 10.3.1.3	Not Present
Phy CH information elements		
Uplink radio resources		
Maximum allowed UL TX power	Maximum allowed UL TX power 10.3.6.39	33 dBm
Downlink radio resources		
Radio link addition information		Radio link addition information
		required for each RL to add
>Radio link addition information	Radio link addition information 10.3.6.68	
Radio link removal information		Radio link removal information required for each RL to remove
>Radio link removal information	Radio link removal information 10.3.6.69	Not Present
TX Diversity Mode	TX Diversity Mode 10.3.6.86	None
SSDT information	SSDT information 10.3.6.77	Not Present

Radio link addition information

Information Element/Group name	Need	Multi	Type and reference	Value/Remark
Primary CPICH info	MP		Primary CPICH info 10.3.6.60	Same as defined in cell2
Downlink DPCH info for each RL	MP		Downlink DPCH info	See below

Information Element/Group name	Need	Multi	Type and reference	Value/Remark
			for each RL 10.3.6.21	
TFCI combining indicator	MP		TFCI combining indicator 10.3.6.81	FALSE
SCCPCH Information for FACH	OP		SCCPCH Information for FACH 10.3.6.70	Not Present

Downlink DPCH info for each RL

Information Element/Group name	Type and reference	Value/Remark
CHOICE mode		
>FDD		
>>Primary CPICH usage for channel estimation	Primary CPICH usage for channel estimation 10.3.6.62	Primary CPICH may be used
>>DPCH frame offset	Integer(038144 by step of 256)	This should be reflected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message
>>Secondary CPICH info	Secondary CPICH info 10.3.6.73	Not Present
>>DL channelisation code		
>>>Secondary scrambling code	Secondary scrambling code 10.3.6.74	Not Present
>>>Spreading factor	Integer(4, 8, 16, 32, 64, 128, 256, 512)	128
>>>Code number	Integer(0Spreading factor - 1)	96
>>>Scrambling code change	Enumerated (code change, no code change)	No code change
>>TPC combination index	TPC combination index 10.3.6.85	0
>>SSDT Cell Identity	SSDT Cell Identity 10.3.6.76	Not Present
>>Closed loop timing adjustment mode	Integer(1, 2)	Not Present

8.3.1.5 Test requirements

Table 8.3.1.1.3: Cell specific test parameters for Soft handover

Parameter	Unit	Cell 1				Cell 2							
		T1	T2	T3	T4	T5	T6	T1	T2	T3	T4	T5	T6
CPICH_Ec/lor	dB	-9.3					-9.3						
PCCPCH_Ec/lor	dB			-11.	3			-11.3					
SCH_Ec/lor	dB			-11.	3			-11.3					
PICH_Ec/lor	dB	-14.3						-14.3					
DPCH_Ec/lor	dB	Note1	Note1	No	te1	N/A	N/A	N/A	N/A	Note3	Note1	Note ²	I
OCNS		Note2	Note2	Note2		-1.13	-1.13	-1.13	-1.13	Note2	Note2	Note	2
\hat{I}_{or}/I_{oc}	dB	0	2.91	2.91		2.91	2.91	-Inf	2.91	2.91	2.91	2.91	
I_{oc}	dBm/ 3.84 MHz	-70											
CPICH_Ec/lo	dB	-12.3	-13.3	-13	3.3	-13.3	-13.3	-Inf	-13.3	-13.3	-13.3	-13	3.3
Propagation Condition		AWGN											
Relative delay of paths received from cell 2 with respect to cell 1	chips	{-147.5 147.5} Note 4											

Note 1: The DPCH level is controlled by the power control loop

The average measured quality on the DTCH of the UE downlink during T6 shall be BLER =0.01±30%. (The final BLER shall be achieved by integrating over a number of repetitions of procedure step 10).

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.2 FDD/FDD Hard Handover

8.3.2.1 FDD/FDD Hard Handover to intra-frequency cell

8.3.2.1.1 Definition and applicability

The hard handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCCH.

The requirements and this test apply to the FDD UE.

8.3.2.1.2 Minimum requirement

The interruption time shall be less than 110 ms in CELL_DCH state in the single carrier case. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

The hard handover delay $D_{handover}$ equals the RRC procedure delay defined in TS 25.331 clause 13.5.2 plus the interruption time stated in TS 25.133 clause 5.2.2.2 as follows:

The interruption time, i.e. the time between the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCCH, is depending on whether the target cell is known for the UE or not.

If intra-frequency hard handover is commanded or inter-frequency hard handover is commanded when the UE does not need compressed mode to perform inter-frequency measurements, the interruption time shall be less than T_{interrupt1}

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior

Note 3: The DPCH level is controlled by the power control loop. The initial power shall be set equal to the DPCH_Ec/lor of Cell 1 at the end of T2.

Note 4: The relative delay of the path from cell 2 with respect to cell 1 shall always be within -147.5 ... 147.5 chip.

 $T_{interrupt}_{1=}T_{IU}+40+20*KC+150*OC+10*F_{max} ms$

where

 T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

KC is the number of known target cells in the message, and

OC is the number of target cells that are not known in the message.

 F_{max} denotes the maximum number of radio frames within the transmission time intervals of all transport channels that are multiplexed into the same CCTrCH.

Note: The figure 40 ms is the time required for measuring the downlink DPCCH channel as stated in TS 25.214 clause 4.3.1.2.

In the interruption requirement $T_{interrupt1}$ a cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set
- the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE.

The normative reference for this requirement is TS 25.133 [2] clauses 5.2.2 and A.5.2.1.

8.3.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.2.1.4 Method of test

8.3.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.3.2.1.1 to 8.3.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a PHYSICAL CHANNEL RECONFIGURATION with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined in TS 25.331 [8].

N312 shall have the smallest possible value i.e. only one insync is required.

Table 8.3.2.1.1: General test parameters for Handover to intra-frequency cell

Parameter Un		Unit	Value	Comment		
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1 and C.2.1		
Power Contro	l		On			
Target quality DTCH	value on	BLER	0.01			
Initial	Active cell		Cell 1			
conditions	Neighbourin g cell		Cell 2			
Final condition	Active cell		Cell 2			
Reporting ran	Reporting range		3	Applicable for event 1A and 1B		
Hysteresis	Hysteresis		0			
W			1	Applicable for event 1A and 1B		
Reporting deactivation threshold			0	Applicable for event 1A		
Time to Trigger ms		ms	0			
Filter coefficient			0			
T1 s		S	5			
T2 s		S	5			
T3 s		S	5			

Table 8.3.2.1.2: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1			Cell 2			
		T1	T2	T3	T1	T2	T3	
CPICH_Ec/lor	dB		-10		-10			
PCCPCH_Ec/lor	dB		-12		-12			
SCH_Ec/lor	dB		-12		-12			
PICH_Ec/lor	dB		-15			-15		
DPCH_Ec/lor	dB	Note1	Note1 Note3		N/A	N/A	Note1	
OCNS_Ec/lor	dB	Note2	Note2	Note2	-0.941	-0.941	Note2	
\hat{I}_{or}/I_{oc}	dB	0	6.	97	-Infinity	5.97		
$\hat{I}_{or(Note4)}$	dBm	-70.00	-63	3.03	-Infinity	-64.03		
I_{oc}	dBm/ 3.84 MHz	-70						
CPICH_Ec/lo	dB	-13 -Infinity -14				4		
Propagation Condition				AV	VGN			

Note 1: The DPCH level is controlled by the power control loop

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}

Note 3: The DPCH may not be power controlled by the power control loop.

Note 4: The nominal lor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.2.1.4.2 Procedure

- 1) The RF parameters are set up according to T1 in table 8.3.2.1.3.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) 5 seconds after step 4 has completed, the SS shall switch the power settings from T1 to T2 in table 8.3.2.1.3.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1A

- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time set to "now". SS shall transmit the whole message such that it will be available at the UE no later than a period equals to the RRC procedure delay (= 80 ms) prior to the beginning of T3.
- 8) After 5 seconds from the beginning of time period T2, the SS shall switch the power settings from T2 to T3 in table 8.3.2.1.3.
- 9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 110 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 5 seconds from the beginning of time period T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	value/Remark
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
message admentication code	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
Title message sequence names.	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	l N / B
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9) -CHOICE mode	0 FDD
-CHOICE mode -Measurement quantity	CPICH Ec/N0
-Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	OF IOTI_EO/INU
-Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
-Intra-frequency measurement reporting criteria (10.3.7.39)	criteria
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 2)
-Reporting cell status	-Report cells within active set and/or
	monitored set cells on used frequency
-Maximum number of reported cells	2
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present

Information Element/Group name	Value/Remark					
-W	1.0					
-Hysteresis	0 dB					
-Threshold used frequency	Not Present					
-Reporting deactivation threshold	Not Present					
-Replacement activation threshold	Not Present					
-Time to trigger	0 ms					
-Amount of reporting	Not Present					
-Reporting interval	Not Present					
-Reporting cell status						
-Report cells within active set and/or monitored set cells						
on used frequency						
-Maximum number of reported cells	2					
Physical channel information elements						
-DPCH compressed mode status info (10.3.6.34)	Not Present					
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained						
in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331,						
8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information						
reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in						
MEASUREMENT CONTROL.						
Note 2: Reporting interval = 0 ms means no periodical reporting	ng					

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Message Type UE Information Elements - RRC transaction identifier - Integrity check info - message authentication code - RRC message sequence number - RRC message sequence number - Integrity protection mode info - Ciphering mode info - Activation time - Activation time - Activation time - New U-RNTI - New C-RNTI - New G-RC state indicator - UTRAN DRX cycle length coefficient - CN Information Elements - CN Information info - UTRAN mobility information elements - URA identity - RB information elements - Downlink counter synchronisation info - Phych Information elements - Frequency info (10.3.6.36) - CHOICE mode - UJRARCN uplink(Nu) - UJRARCN uplink (DPCH power control info (10.3.6.91) - CHOICE channel requirement - SR B delay - Scrambiling code yne - Scrambili	Information Element	Value/Remark
UE Information Elements -RRC transaction identifier -Integrity check info -message authentication code -RRC message sequence number -RRC message sequence number -RRC message sequence number -Integrity protection mode info -Ciphering mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -CRV Information Elements -CN Information info -CN Information elements -CHOICE mode -DARCE mode -DPCCH power control info (10.3.6.36) -Uplink DPCH power control info (10.3.6.91) -CHOICE channel requirement -Info (19.3.6.96) -Uplink DPCH info (19.3.6.96) -Uplink DPCH power control info (10.3.6.91) -CHOICE channel regularence -Number of DPDCH -Spreading factor -TPC (existence -Number of Bib it -Puncturing Limit -Downlink information common for all radio links (10.3.6.24) -Downlink information common for all radio links (10.3.6.24) -Downlink information common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink information common for all radio links (10.3.6.24) -Downlink information common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink information common for all radio links (10.3.6.24) -Downlink information common for all radio links (10.3.6.24) -Downlink pPCH power control information -Spreading factor -Fixed or Flexible Position -Fixed Pixed or Flexible Position -Fixed Pixed or Flexible Position	Message Type	
Integrity check info message authentication code **RC message sequence number Integrity protection mode info -Ciphering mode info -Activation time New C-RNTI -RRC State Indicator -New C-RNTI -RRC State Indicator -New C-RNTI -RRC State Indicator -New C-RNTI -RRC State Indicator -CN Information Elements -CN Information info UTRAN DRS, cycle length coefficient CN Information info UTRAN mobility information elements -Downlink counter synchronisation info -UJARFCN uplink(Nt) -UJRIN DPCH info (103.68 of 0.64 -DPCCH power control info (10.3.6.91) -CHOICE mode -DPCCH power control info -Scrambling code number -Number of DPDCH -Spreading factor -TFCI existence -Number of Bib it -Puncturing Limit -Downlink RDSCH information -Downlink RDSCH information -Downlink RDSCH information -Downlink information common for all radio links (10.3.6.24) -Downlink Information common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink RDSCH information -Spreading factor -Fixed or Flexible Position -Fixed -Fixe		
### Processor		
### RRC message sequence number -RRC message sequence number -Integrity protection mode info -Ciphering mode info -Not Present -Not Present -Not Present -Not Present -CELL_DCH -Not Present -CELL_DCH -Not Present -CELL_DCH -Not Present -Not P		
### Internation of the bit string contains the most significant bit of the MAC-I so provides the value of this IE, from its internal counter. **Net Ciphering mode info	-message authentication code	
### PRICE MESSAGE Sequence number Integrity protection mode info -Ciphering mode info -Ciphering mode info -Activation time -New L-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient -UTRAN DRX cycle		
-RRC message sequence number Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient -CN Information info -Not Present		
-Integrity protection mode info -Ciphering mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -Not Present -N	BB0	
Integrity protection mode info	-RRC message sequence number	
-Ciphering mode info -Activation time -New U-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient -UTRAN DRX cycle length coefficient -UTRAN mobility information elements -CN Information Elements -UTRAN mobility information elements -Downlink counter synchronisation info -PhyCH information elements -Frequency info (10.3.6.36) -CHOICE mode -UARFCN uplink(Nu) -UARFCN downlink(Nt) -UARFCN downlink(Nt) -UHINK PCH info (10.3.6.88) -UPINK DPCH info (10.3.6.88) -UPINK DPCH info (10.3.6.88) -UPICH Dower control info (10.3.6.91) -CHOICE mode -PC Preamble -SRB delay -Power Control Algorithm -TPC step size -CHOICE mode -Scrambling code type -Scrambling code type -Scrambling code number -Number of DPDCH -Spreading factor -TFCI existence -CHOICE mode -Downlink pDCH information -Downlink information common for all RL (10.3.6.23) -DPC mode -Power offset Pipilot-Decch -Dumink pDCH information -Downlink pDCH information -Spreading factor -CFN-LargetSFN frame offset -Downlink pDCH information -Spreading factor -FIXEd or Flexible Position -FIXEd isstence -CHOICE sode -Power offset Pipilot-Decch -Po	lute suits, mustastica use de infe	
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-Number of FBI bit -Puncturing Limit Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links (10.3.6.24) -Downlink DPCH info common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset PPIIOL-DPDCH -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) Not Present O (single) -FDD -O (Single) -O		
Puncturing Limit Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links (10.3.6.24) -Downlink DPCH info common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset Ppilot-DPDCH -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) -TDD -DL rate matching restriction bits (SF=128,256)		
Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links (10.3.6.24) -Downlink DPCH info common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) FDD FDD Not Present O (single) FDD Not Present 128 Fixed TRUE		
-CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links (10.3.6.24) -Downlink DPCH info common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) FDD Not Present Initialise Not Present 0 (single) FDD O Not Present Tritialise Not Present		•
-Downlink PDSCH information -Downlink information common for all radio links (10.3.6.24) -Downlink DPCH info common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) Not Present Not Present O (single) FDD O Not Present 128 Fixed TRUE		FDD
-Downlink information common for all radio links (10.3.6.24) -Downlink DPCH info common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) -Timing indicator Initialise Not Present 0 (single) -FDD -O (s		
-Downlink DPCH info common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) Initialise Not Present 0 (single) FDD Not Present 128 Fixed TRUE		
-Timing indicator -CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) Initialise Not Present 0 (single) FDD Not Present 128 Fixed TRUE		
-CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) Not Present 0 Not Present 128 FDD Not Present 128 FUE 128		Initialise
-Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) 0 (single) FDD 0 Not Present 128 Fixed TRUE 128		
-DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) 0 Not Present 128 Fixed TRUE 128		
-CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) -PDD 0 Not Present 128 Fixed TRUE 128		0 (single)
-DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence -CHOICE SF -Number of bits for Pilot bits(SF=128,256) Not Present 128 Fixed TRUE 128	-CHOICE mode	
-Spreading factor 128 -Fixed or Flexible Position Fixed -TFCI existence TRUE -CHOICE SF 128 -Number of bits for Pilot bits(SF=128,256) 8		
-Fixed or Flexible Position Fixed -TFCI existence TRUE -CHOICE SF 128 -Number of bits for Pilot bits(SF=128,256) 8		Not Present
-TFCI existence TRUE -CHOICE SF 128 -Number of bits for Pilot bits(SF=128,256) 8		
-CHOICE SF -Number of bits for Pilot bits(SF=128,256) 128 8		7 7
-Number of bits for Pilot bits(SF=128,256) 8		
-CHOICE mode FDD		
	-CHOICE mode	FDD

Information Element	Value/Remark
-DPCH compressed mode info (10.3.6.33)	Not Present
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	350
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0 chips
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No change
-TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
 Intra-frequency measured results list 	
 Cell measured results 	
- Cell Identity	Not present
 SFN-SFN observed time difference 	Checked that this IE is present
 Cell synchronisation information 	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	100
- CPICH Ec/N0	Checked that this IE is present
- CPICH RSCP	Checked that this IE is present
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	Observed that this IE is present
- Tm - OFF	Checked that this IE is present
	Checked that this IE is present
- CHOICE mode	FDD Chapked that this IF is present
- Primary CPICH info	Checked that this IE is present
 Primary scrambling code CPICH Ec/N0 	Checked that this IE is present
- CPICH EC/NO - CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is present
Measured results on RACH	Checked that this IE is present
Additional measured results	Checked that this IE is absent
Event results	
Event results	Checked that this IE is present

8.3.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Parameter Unit Cell 1 Cell 2 T1 **T**3 T1 **T3 T2 T2 -**9.3 CPICH_Ec/lor dB -9.3 PCCPCH Ec/lor -11.3 -11.3 dB SCH_Ec/lor dB -11.3-11.3 -14.3 PICH_Ec/lor dB -14.3DPCH_Ec/lor dB Note1 Note1 Note3 N/A N/A Note1 OCNS_Ec/lor -1.13 -1.13 dB Note2 Note2 Note2 Note2 7.0 dB 0 6.0 -Infinity $I_{oc\ (Note\ 4)}$ -70.0 dBm -63.0 -Infinity -64.0 I_{or} I_{oc} dBm/ -70 3.84 MHz CPICH_Ec/lo dB -12.3 -Infinity -13.3 (Note 4) Propagation **AWGN** Condition

Table 8.3.2.1.3: Test requirements for Handover to intra-frequency cell

Note 1: The DPCH level is controlled by the power control loop

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}

Note 3: The DPCH may not be power controlled by the power control loop.

Note 4: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note:

If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.2.2 FDD/FDD Hard Handover to inter-frequency cell

8.3.2.2.1 Definition and applicability

The hard handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCCH.

The requirements and this test apply to the FDD UE.

8.3.2.2.2 Minimum requirement

The interruption time shall be less than 140 ms in CELL_DCH state in the dual carrier case. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

The hard handover delay $D_{handover}$ equals the RRC procedure delay defined in TS 25.331 clause 13.5.2 plus the interruption time stated in TS 25.133 clause 5.2.2.2 as follows:

If inter-frequency hard handover is commanded and the UE needs compressed mode to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$$T_{interrupt2} = T_{IU} + 40 + 50 * KC + 150 * OC + 10 * F_{max} ms$$

In the interruption requirement T_{interrupt2} a cell is known if:

- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The normative reference for this requirement is TS 25.133 [2] clauses 5.2.2 and A.5.2.2.

8.3.2.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.2.2.4 Method of test

8.3.2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.3.2.2.1 to 8.3.2.2.3 below. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a PHYSICAL CHANNEL RECONFIGURATION with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined in TS 25.331 [8].

N312 shall have the smallest possible value i.e. only one insync is required.

Table 8.3.2.2.1: General test parameters for Handover to inter-frequency cell

Para	meter	Unit	Value	Comment
DCH param	eters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Conti	rol		On	
Target quali	ty value on	BLER	0.01	
Compressed	d mode		A.22 set 1	As specified in TS 34.121 clause C.5.
Initial	Active cell		Cell 1	
conditions	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Threshold no frequency	on used	dB	-18	Absolute Ec/I0 threshold for event 2C
Hysteresis		dB	0	
W non-used	W non-used frequency		1	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
T1		S	5	
T2		S	10	
T3		S	5	

Table 8.3.2.2.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter	Unit		Cell 1		Cell 2		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel		Channel 1			Channel 2	•	
Number							
CPICH_Ec/lor	dB		-10		-10		
PCCPCH_Ec/lor	dB		-12		-12		
SCH_Ec/lor	dB		-12			-12	
PICH_Ec/lor	dB		-15		-15		
DPCH_Ec/lor	dB	Note1	Note1	Note3	N/A	N/A	Note1
OCNS_Ec/lor	dB	Note2	Note2	Note2	-0.941	-0.941	Note2
\hat{I}_{or}/I_{oc}	dB		0		-Infinity	-1.8	-1.8
$\hat{I}_{or(Note4)}$	dBm		-70.0		-Infinity	-71.8	-71.8
I_{oc}	dBm/	-70					
oc .	3.84						
	MHz						
CPICH_Ec/lo	dB	-13			-Infinity	-1	14
Propagation		AWGN					
Condition							

- Note 1: The DPCH level is controlled by the power control loop
- Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.
- Note 3: The DPCH may not be power controlled by the power control loop.
- Note 4: The nominal lor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.2.2.4.2 Procedure

- 1) The RF parameters are set up according to T1 in table 8.3.2.2.3.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 with Compressed mode parameters as in Table 8.3.2.2.1.
- 4) SS shall transmit a MEASUREMENT CONTROL messages.
- 5) 5 seconds after step 4 has completed, the SS shall switch the power settings from T1 to T2 in table 8.3.2.2.3.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time "now". SS shall transmit the whole message such that will be is available at the UE no later than a period equals to the RRC procedure delay (= 80 ms) prior to the beginning of T3.
- 8) After 10 seconds from the beginning of time period T2, the SS shall switch the power settings from T2 to T3 in table 8.3.2.2.3.
- 9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 140 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 5 seconds from the beginning of time period T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved

Specific Message Contents

All messages indicated belowabove shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	Not Droppet
- CHOICE Inter-frequency cell removal	Not Present
- New Inter frequency cells	0
- Inter frequency cell id - Frequency info	U
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not Present
- UARFCN downlink(Nd)	Same frequency as "Channel2" in Table
State State and action in the contract of the	8.3.2.2.2
- Cell info	0.0.2.2.2
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to Primary scrambling code of Cell2
- Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell2
	described in Table 8.3.2.2.2
- Tx Diversity Indicator	FALSE
- Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	Lates for account of a site of
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Inter-frequency reporting criteria -Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH Ec/N0
-Inter-frequency reporting quantity (10.3.7.21)	0.1011 20/140
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
	criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2C
-Threshold used frequency	Not Present
-W used frequency	Not Present

Information Element/Group name	Value/Remark
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within monitored set on non- used frequency
-Maximum number of reported cells per reported non-used	1
frequency	
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-18 dB
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Message Type UE Information Elements - RRC transaction identifier - Integrity check info - message authentication code - RRC message sequence number - RRC message sequence number - Integrity protection mode info - Ciphering mode info - Activation time - Integrity protection mode info - Ciphering mode info - Activation time - Activation time - Activation time - Not Present - Not Information Elements - CN Information info - UTRAN mobility information elements - UTRAN to CP information info - Not Present - Not Prese	Information Element	Value/Remark
UE Information Elements -Integrity check info -message authentication code -RRC massage sequence number -Integrity protection mode info -Ciphering mode info -Activation time -New C-RNTI -RRC State Indicator -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient CN Information info -CIPHERING		
-RRC message authentication code -RRC message sequence number -RRC message sequence number -RRC message sequence number -RRC message sequence number -Integrity protection mode info -Ophering mode info -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient -ON Information info -ON Information info -ON Information info -ON Information info -ON Information elements -Ownlink counter synchronisation info -RB with PDCP information is -RB with PDCP information is -RB with PDCP information is -RB with PDCP information -PhyCH information elements -Prequency info (10.3.6.36) -CHOICE mode -DPCCH power control info (10.3.6.91) -CHOICE mode -OPCCH power control info (10.3.6.91) -Puptink PDCH information -Puptink PDCH information -Puptink PDCH infor (10.3.6.88) -Puptink PDCH power control information -Puptink PDCH		
### Processor of the Present Not Present ### Present Not Present ### Present ### Not Pre	-RRC transaction identifier	0
	-Integrity check info	Not Present
### PRICE Message sequence number ### Integrity protection mode info -Ciphering mode info -New C-RNTI -RRC State Indicator -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient -UTRAN DRX cycle len		SS calculates the value of MAC-I for this
### Leftmost bit of the bit string contains the most significant bit of the MAC-I SS provides the value of this IE, from its internal counter. **New C-RNTI** RRC State Indicator CTRAN DRX cycle length coefficient Not Present Not Pres		message and writes to this IE. The first/
RRC message sequence number		
-RRC message sequence number -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient -NI Information Elements -Not Information info -Not Present -Not Prese		
-Integrity protection mode info - Ciphering made info - Activation time - New U-RNTI - New U-RNTI - New C-RNTI - Not Present - Uplink Port info (10.3.6.36) - CHOICE mode - Uplink Port info (10.3.6.88) - Uplink Port info (10.3.6.91) - CHOICE mode - Devention info (10.3.6.91) - Power Control Algorithm - TPC step size - CHOICE mode - Scrambling code number - Number of DPDCH - Not Present(1) - Spreading factor - TFC lexistence - Number of PBI bit - Poundink radio resources - CHOICE mode - Downlink Information - Not Present -	-RRC message sequence number	
Integrity protection mode info		
Ciphering mode info	-Integrity protection mode info	
-Activation time -New U-RNTI -New C-RNTI -Not Present		Not Present
New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient CN Information Elements -ON Information info UTRAN mobility information elements -URA identity -Downlink counter synchronisation info -RB with PDCP information list -NB with PDCP information information -NB with PDCP information -NB with PDCP information information -NB with PDCP information -NB with PDCP information information		"now"
RRC State Indicator -UTRAN DRX cycle length coefficient CN Information Elements -CN Information lements -URA identity -Downlink counter synchronisation info -RB with PDCP information -RE with PDCP information -RB with PDCP information -RE with PDCP information information -RE with PDCP information -RE with PDCP information -RE with PDCP information information -RE with PDCP information information -RE with PDCP information -RE with PDCP information information -RE with PDCP information -RE with PDCP information -RE with PDCP information information -RE with PDCP information information -RE with PDCP information -RE with PDCP information information -RE with PDCP information information -RE with PDCP information -RE with PDCP information -RE with PDCP informatio	-New U-RNTI	
RRC State Indicator -UTRAN DRX cycle length coefficient CN Information Elements -CN Information lements -URA identity -Downlink counter synchronisation info -RB with PDCP information -RE with PDCP information -RB with PDCP information -RE with PDCP information information -RE with PDCP information -RE with PDCP information -RE with PDCP information information -RE with PDCP information information -RE with PDCP information -RE with PDCP information information -RE with PDCP information -RE with PDCP information -RE with PDCP information information -RE with PDCP information information -RE with PDCP information -RE with PDCP information information -RE with PDCP information information -RE with PDCP information -RE with PDCP information -RE with PDCP informatio		
-UTRAN DRX cycle length coefficient -CN Information Elements -CN Information info UTRAN mobility information elements -URA identity RB information elements -CN mobility information list -Nownlink counter synchronisation info -RB with PDCP information list -SRB with PDCP information list -SRB with PDCP information -RESERVENT of the severe list of the s		
CN Information Elements -URA identity -Downlink counter synchronisation info -Not Present -PDD		
-CN Information Info UTRAN mobility information elements -URA identity RB information elements -Ownrlink counter synchronisation info >RB with PDCP information list >PB with PDCP information -Frequency info (10.3.6.36) -CHOICE mode -UARRCN uplink(Nu) -UARRCN uplink(Nu) -UHINK DPCH power control info (10.3.6.91) -CHOICE mode -PCPCH power offset -PC Preamble -SRB delay -SRB delay -Scrambling code type -Scrambling code number -Number of DPDCH -Number of DPDCH -Number of DPDCH -Number of BI bit -Puncturing Limit Downlink radio resources -CHOICE mode -Number of BI bit -Puncturing Limit Downlink radio resources -CHOICE mode -Sume uplink UARFCN as used for cell 2 -Same uplink UARFCN as used for cell 2 -Same uplink UARFCN as used for cell 2 -Same downlink UARFCN as used for cell 2 -Same uplink UARFCN as used for cell 2 -Same uplin		
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-Downlink PDSCH information -Downlink information common for all radio links (10.3.6.24) -Downlink DPCH info common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence Not Present Initialise Not Present 0 (single) FDD 0 Not Present -Spreading factor -TRUE		EDD
-Downlink information common for all radio links (10.3.6.24) -Downlink DPCH info common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence Initialise Not Present 0 (single) FDD Not Present 128 Fixed TRUE		
-Downlink DPCH info common for all RL (10.3.6.18) -Timing indicator -CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence Initialise Not Present 0 (single) FDD 0 Not Present 128 Fixed		NOT Present
-Timing indicator -CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence Initialise Not Present 0 (single) FDD 0 Not Present 128 Fixed TRUE		
-CFN-targetSFN frame offset -Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence Not Present 0 (single) FDD 0 Not Present 128 Fixed TRUE		In Ministra
-Downlink DPCH power control information (10.3.6.23) -DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence 0 (single) FDD 0 Not Present 128 Fixed TRUE		
-DPC mode -CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence 0 (single) FDD 0 Not Present 128 Fixed		NOT Present
-CHOICE mode -Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence FDD Not Present 128 Fixed TRUE		0 (sin als)
-Power offset P _{Pilot-DPDCH} -DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence 0 Not Present 128 Fixed TRUE		
-DL rate matching restriction information -Spreading factor -Fixed or Flexible Position -TFCI existence Not Present 128 Fixed TRUE		
-Spreading factor 128 -Fixed or Flexible Position Fixed -TFCI existence TRUE		
-Fixed or Flexible Position Fixed -TFCI existence TRUE		
-TFCI existence TRUE		
-CHOICE SF 128		
· ·	-CHOICE SF	128

Information Element	Value/Remark
-Number of bits for Pilot bits(SF=128,256)	8
-CHOICE mode	FDD
-DPCH compressed mode info (10.3.6.33)	
- Transmission gap pattern sequence	1
- TGPSI	1
- TGPS Status Flag	deactivate
- TGCFN	Not Present
- Transmission gap pattern sequence configuration	Not Present
parameters	
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	350
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	0 chips
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No change
-TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
 Inter-frequency measured results 	
- Frequency Info	Checked that this IE is present
 Inter-freqcell measured results list 	
- Cell measured results	
- Cell Identity	Not present
 Cell synchronisation information 	
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	Checked that this IE is present
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is present

8.3.2.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Parameter Unit Cell 1 Cell 2 T1 **T**3 T1 **T3 T2 T2** UTRA RF Channel Channel 1 Channel 2 Number CPICH_Ec/lor dB -9.2 -9.2 PCCPCH_Ec/lor dB -11.2 -11.2-11.2 SCH_Ec/lor -11.2 dB PICH_Ec/lor -14.2 -14.2 dB DPCH_Ec/lor dB Note1 Note1 Note3 N/A N/A Note1 OCNS Ec/lor dB Note2 Note2 Note2 -1.16 -1.16 Note2 dB 0 -Infinity -1.8 -1.8 $I_{or}/I_{oc\ (Note\ 4)}$ \hat{I}_{or} dBm -70.0 -Infinity -71.8 -71.8 dBm/ -70 I_{oc} 3.84 MHz CPICH_Ec/lo -12.2 -13.2dB -Infinity (Note 4) AWGN Propagation

Table 8.3.2.2.3: Test requirements for Handover to inter-frequency cell

Note 1: The DPCH level is controlled by the power control loop

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or.}

Note 3: The DPCH may not be power controlled by the power control loop.

Note 4: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note:

Condition

If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.3 FDD/TDD Handover

8.3.3.1 Definition and applicability

The hard handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCH.

The requirements and this test apply to the combined FDD and TDD UE.

8.3.3.2 Minimum requirement

The hard handover delay shall be less than 70 ms in CELL_DCH state in the dual carrier case. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

The hard handover delay $D_{handover}$ equals the RRC procedure delay defined in TS 25.331 clause 13.5.2 plus the interruption time stated in TS 25.133 clause 5.3.2.2 as follows:

If FDD/TDD handover is commanded, the interruption time shall be less than,

$$T_{interrupt} = T_{offset} + T_{UL} + 30*F_{SFN} + 20*KC + 180*UC ms$$

where,

T_{offset}	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel
T _{UL}	Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell
F_{SFN}	Equal to 1 if SFN decoding is required and equal to 0 otherwise
KC	Equal to 1 if a known target cell is indicated in the RRC message implying FDD/TDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying FDD/TDD handover and equal to 0 otherwise

An inter-frequency TDD target cell shall be considered known by the UE, if the target cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The normative reference for this requirement is TS 25.133 [2] clauses 5.3.2 and A.5.3.2.

8.3.3.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.3.4 Method of test

8.3.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.3.2.2.1 and 8.3.2.2.2 below. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The Primary CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a PHYSICAL CHANNEL RECONFIGURATION with activation time "now" with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3. The RRC procedure delay is defined in TS 25.133 [2].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table 8.3.3.1: General test parameters for Handover to TDD cell

Parai	neter	Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 34.121 clause C.3.1 and in TS 34.122 clause C.2.2
Power	Control		On	
	ity value on CH	BLER	0.01	
Compress	sed mode		A.22 set 3	As specified in TS 34.121 clause C.5
Initial	Active cell		Cell 1	FDD cell
conditions	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 2	TDD cell
()	dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hyste	eresis	dB	0	Hysteresis parameter for event 2C
Time to	Trigger	ms	0	
	Threshold non-used frequency		-75	Applicable for Event 2C
Filter co	efficient		0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
Т	SI	S	1.28	The value shall be used for all cells in the test
Т	1	S	5	
	2	S	15	
Т3		S	5	

Table 8.3.3.2: Cell Specific parameters for Handover to TDD cell (cell 1)

Parameter	Unit	Cell 1	
		T1, T2	Т3
UTRA RF Channel Number		Channel 1	
CPICH_Ec/lor	dB	-10	
P-CCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
DPCH_Ec/lor	dB	Note 1	n.a.
OCNS_Ec/lor	dB	Note 2	
\hat{I}_{or}/I_{oc}	dB	0	
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	
Propagation Condition		AWGN	

Note 1: The DPCH level is controlled by the power control loop

Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to $I_{\rm or}$

Table 8.3.3.3: Cell Specific parameters for Handover to TDD cell (cell 2)

Parameter	Unit	Cell 2								
DL timeslot number		0		2		8				
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel						Chan	nol 2			
Number						Chan	IIEI Z			
P-CCPCH_Ec/lor	dB		-3		n.a.		n.a.			
PICH_Ec/lor	dB	n.a.			n.a.		-3			
SCH_Ec/lor	dB	-9		n.a.		-9				
SCH_t _{offset}	dB	5		n.a.		5				
DPCH_Ec/lor	dB	n.a.		n.	a.	Note 1		n.a.		
OCNS_Ec/lor	dB		-3.12		()	Note 2		-3.12	
\hat{I}_{or}/I_{oc}	dB	-Inf	,	6	-Inf		6	-Inf		6
P-CCPCH RSCP	dBm	-Inf	-Inf -67 n.a.		n.a.					
	dBm/									
I_{oc}	3,84					-7	0			
	MHz									
Propagation Condition		AWGN								

Note 1: The DPCH level is controlled by the power control loop

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor

Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.

8.3.3.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 with Compressed mode parameters as in Table 8.3.2.2.1.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C.
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time "now".

- 8) After 10 seconds, the SS shall switch the power settings from T2 to T3.
- 9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 70 ms from the beginning of time period T3 then the number of successful tests is increased by one.
- 10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11) Repeat step 1-10 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49)	Modify
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE mode	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	54.05
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5) -Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within monitored set on non-
	used frequency
-Maximum number of reported cells per reported non-used	1
frequency	
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
Inter frequency magaziroment reporting criteria (40.2.7.40)	criteria
-Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2C
-Threshold used frequency	Not Present
-W used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within monitored set on non-
	used frequency
-Maximum number of reported cells per reported non-used	1
frequency	
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-80 dBm
-W non-used frequency	1
Physical channel information elements	Not Proport
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
DDC massage assures as number	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
-Integrity protection mode info	internal counter. Not Present
-Ciphering mode info	Not Present
-Activation time	"now"
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36) -CHOICE <i>mode</i>	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	Same CARPON as used for cell 2
-Maximum allowed UL TX power	33 dBm
-CHOICE channel requirement	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	Spirit Br Grrinie
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE mode	TDD
-CHOICE TDD option	3.84 Mcps TDD
-UL Target SIR	Not Present
-CHOICE UL OL PC info	Individually signalled
-CHOICE TDD option	3.84 Mcps TDD
-Indivdual Timeslot interference info	1
-Individual timeslot interference (10.3.6.38)	
-Timeslot Number (10.3.6.84)	0.0414 TDD
-CHOICE TDD option	3.84 Mcps TDD
-Timeslot number	10 00 dRm
- UL Timeslot Interference -CHOICE mode	-90 dBm TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE Timing Advance	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	
-Activation Time	"now"
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE TDD option	3.84 Mcps
-Timeslot number	10
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	2.94 Mana
-CHOICE TDD option -CHOICE Burst Type	3.84 Mcps Type 1
-Midamble Allocation Mode	Default
-iviidalfible Aliocation iviode	Delault

Information Element	Value/Remark
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE TDD option	3.84 Mcps
-First timeslot code list	1
-Channelisation code	8/1
-CHOICE more timeslots	No more timeslots
Downlink radio resources	No more timesiots
-CHOICE mode	TDD
-Downlink information common for all radio links (10.3.6.24)	TOD
-Downlink DPCH info common for all RL (10.3.6.18)	
	Initialiae
-Timing indicator	Initialise Not Present
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	TDD
-CHOICE mode	TDD
-TPC Step size	1 dB
-CHOICE mode	TDD
-CHOICE mode	TDD
-CHOICE TDD option	3.84 Mcps
-TX Diversity mode (10.3.6.86)	None
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
- CHOICE mode	TDD
- CHOICE TDD option	3.84 Mcps
- CHOICE sync case	Case 2
- Timeslot	0
- Cell parameters ID	20
- SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE mode	TDD
- DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	"now"
-Duration	Infinite
-Common timeslot info	Not Present
- Downlink DPCH timeslots and codes (10.3.6.32)	
- First individual timeslot info (10.3.6.37)	
- Timeslot Number (10.3.6.84)	
- CHOICE TDD option	3.84 Mcps
- Timeslot number	2
- TFCI existence	True
- Midamble shift and burst type (10.3.6.41)	
- CHOICE TDD option	3.84 Mcps
- CHOICE TOD option - CHOICE Burst Type	Type 1
- Midamble Allocation Mode	Default
- Midamble configuration burst type 1 and 3	16
- Midamble configuration burst type 1 and 3 - Midamble shift	
	Not present
- CHOICE TDD option	3.84 Mcps
- First timeslot channelisation codes (10.3.6.17)	Compositive
- CHOICE codes representation	Consecutive codes
- First channelisation code	16/1
- Last channelisation code	16/2
- CHOICE more timeslots	No more timeslots
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.3.3.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Note:

If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.4 Inter-system Handover from UTRAN FDD to GSM

8.3.4.1 Definition and applicability

The UTRAN to GSM cell handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to the combined FDD and GSM UE.

8.3.4.2 Minimum requirement

The hard handover delay shall be less than indicated in Table 8.3.4.1. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

The hard handover delay as listed in table 8.3.4.1 equals the RRC procedure delay plus the interruption time listed in table 8.3.4.2.

Table 8.3.4.1: FDD/GSM handover - handover delay

UE synchronisation status	handover delay [ms]
The UE has synchronised to the GSM cell before the	90
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	190
the HANDOVER FROM UTRAN COMMAND is received	

Table 8.3.4.2: FDD/GSM handover - interruption time

Synchronisation status	Interruption time [ms]
The UE has synchronised to the GSM cell before the	40
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	140
the HANDOVER FROM UTRAN COMMAND is received	

The normative reference for this requirement is TS 25.133 [2] clauses 5.4.2 and A.5.4.

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

[Editor's Note: Annex G.2 must be specified also for GSM; for instance as a reference to TS 51.010-1 clause A1.2]

The test parameters are given in table 8.3.4.3, 8.3.4.4 and 8.3.4.5 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used.. The test consists of three successive

time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

The UTRAN shall send a HANDOVER FROM UTRAN COMMAND with activation time "now". In the GSM Handover command contained in that message, the IE starting time shall not be included. The RRC HANDOVER FROM UTRAN COMMAND message shall be sent to the UE. The start of T3 is defined as the end of the last TTI, containing the HO command.

The requirements are also applicable for a UE not requiring compressed mode, in which case no compressed mode pattern should be sent for the parameters specified in table 8.3.4.3.

Table 8.3.4.3: General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in TS 34.121 clause C.3.1
		12.2 kbps	
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns			Only applicable for UE requiring compressed mode patterns
- GSM carrier RSSI measurement		DL Compressed mode reference pattern 2 in Set 2	As specified in TS 34.121 [1] clause C.5, table C.5.2
- GSM Initial BSIC identification		Pattern 2	As specified in clause TS 25.133 [2] 8.1.2.5.2.1 table 8.7.
- GSM BSIC re- confirmation		Pattern 2	As specified in clause TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
Active cell		Cell 1	
Inter-RAT		GSM Carrier RSSI	
measurement			
quantity			
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the compressed mode patterns starts.
N Identify abort		66	Taken from TS 25.133 [2] 8.1.2.5.2.1 table 8.7.
T Reconfirm abort		5.5	Taken from TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
T1	S	20	
T2	S	5	
T3	S	5	

Table 8.3.4.4: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)
		T1, T2, T3
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DCH_Ec/lor	dB	Note 1
OCNS_Ec/lor	dB	Note 2
\hat{I}_{or}/I_{oc}	dB	0
I_{oc}	dBm/3. 84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.

Table 8.3.4.5: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)		
Farailletei	Offic	T1	T2, T3	
Absolute RF Channel Number		AR	FCN 1	
RXLEV	dBm	-85	-75	

8.3.4.4.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1.
- 2) The UE is switched on
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 and compressed mode parameters are configured as in the table 8.3.4.3. The compressed mode shall remain inactive.
- 4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel
- 5) The start of T1 is TTI aligned
- 6) The SS shall transmit a MEASUREMENT CONTROL message to cell 1
- 7) At the T1-T2 transition, the SS shall switch the power of cell 2
- 8) The UE shall transmit a MEASUREMENT REPORT message triggered by event 3C
- 9) The SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time "now" and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The start of T3 is defined as the end of the last TTI, containing the HO command.
- 10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 90 ms from the beginning of time period T3, then the number of successful tests is increased by one.

[Editor's note: TS 34.108, 7.3.4 shall specify the messages HANDOVER ACCESS, PHYSICAL INFORMATION, SABM, UA and HANDOVER COMPLETE]

- 11) At the end of T3 the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 12) Repeat step 1-11 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate	
(10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within
	virtual active set or of the other RAT
-Maximum number of reported cells	2
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	1
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within
	virtual active set or of the other RAT
-Maximum number of reported cells	2
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Active (for all three patterns specified in
	table 8.3.4.3)

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
-Activation time	"now"
RB information elements	
-RAB information list	1
-RAB Info	Not present
Other information elements	
-CHOICE System type	GSM
-Frequency Band	GSM/DCS 1800 Band
-GSM message	
-Single GSM message	[TBD]
-GSM message List	GSM HANDOVER COMMAND formatted
	as BIT STRING(1512). The contents of
	the HANDOVER COMMAND see next
	table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of TS 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3

MEASUREMENT REPORT message for Inter-RAT test cases

This message is common for all inter RAT-frequency test cases in clause 8.7 and is described in Annex I.

8.3.4.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5 Cell Re-selection in CELL_FACH

8.3.5.1 One frequency present in neighbour list

8.3.5.1.1 Definition and applicability

The cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

The requirements and this test apply to the FDD UE.

8.3.5.1.2 Minimum requirements

The cell re-selection delay shall be less than 1.6 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

If a cell has been detectable at least $T_{identify,intra}$, the cell reselection delay in CELL_FACH state to a cell in the same frequency shall be less than

$$T_{\text{reselection.intra}} = T_{\text{Measurement Period Intra}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}} \text{ ms}$$

where

 $T_{Measurement_Period\ Intra} = 200\ ms.$

 T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

 T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. 1280 ms is assumed in this test case.

 T_{RA} = The additional delay caused by the random access procedure. T_{RA} is a delay is caused by the physical random access procedure described in TS 25.214 clause 6.1. A persistence value is assumed to be 1 in this test case and therefore T_{RA} in this test case is 40 ms.

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.1 and A.5.5.1.

8.3.5.1.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL_FACH state in the single carrier case

8.3.5.1.4 Method of test

8.3.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.5.1.1 to 8.3.5.1.5. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms.

Table 8.3.5.1.1: General test parameters for Cell Re-selection in CELL_FACH, one freq. in neighbour list

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
Access Service Class (ASC#0) – Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS	HCS			Not used
T1		S	15	
T2		S	15	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in table 8.3.5.1.2 and table 8.3.5.1.3.

Table 8.3.5.1.2: Physical channel parameters for S-CCPCH, one freq. in neighbour list

Parameter	Unit	Level
Channel bit rate	kbps	60
Channel symbol rate	ksps	30
Slot Format #I	-	4
TFCI	-	OFF
Power offsets of TFCI and Pilot fields relative to data field	dB	0

Table 8.3.5.1.3: Transport channel parameters for S-CCPCH, one freq. in neighbour list

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

Table 8.3.5.1.4: Cell specific conditions for Cell Re-selection in CELL_FACH, one freq. in neighbour list

Parameter	Unit	Ce	II 1	Cel	12	Cel	I 3	Cell	4	Ce	ell 5	Се	II 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel		Char	nal 1	Chani	nal 1	Chan	n al 1	Chann	al 1	Char	anal 1	Chan	nol 1	
Number		Criai	iriei i	Olialii	iei i	Chari	nei i	Channel 1		Channel 1		Chan	inei i	
CPICH_Ec/lor	dB	ì	10	-10		-1	0	-10	-10		-10		10	
PCCPCH_Ec/lor	dB	-	12	-1	_	-1		-12		-12		-12		
SCH_Ec/lor	dB		12	-1		-1		-12			12	-12		
PICH_Ec/lor	dB		15	-1		-1	-	-15	j		15		15	
S-CCPCH_Ec/lor	dB		12	-1:	2	-1	2	-12			12	-1	2	
OCNS_Ec/lor	dB	-1.2	295	-1.2	95	-1.2	95	-1.29	5	-1.	295	-1.2	295	
\hat{I}_{or}/I_{oc}	dB	7.3	10.27	10.27	7.3	0.2	27	0.27	7	0.	27	0.2	27	
$\hat{I}_{or(Note1)}$	dBm	-62.73	-59.73	-59.73	-62.73	-69	9.73	-69.	73	-69	9.73	-69	.73	
I_{oc}	dBm/3.84 MHz						-7	0						
CPICH_Ec/lo	dB	-16	-13	-13 -16		-2	:3	-23	}	-	23	-2	-23	
Propagation Condition							AW	GN						
Cell_selection_and_ reselection_quality_ measure		CPICH	HE ₀ /N ₀	CPICH	E _c /N ₀	CPI E _e /l		СРІСН І	CPICH E₀/N₀		CPICH E₀/N₀		CH N ₀	
Qqualmin	dB	-2	20	-2	0	-2	0	-20		-20		-20		
Qrxlevmin	dBm	-1	15	-11	5	-11	15	-115	5	-1	15	-1°	15	
UE_TXPWR_ MAX_RACH	dBm	2	1	21		2′	1	21		2	21	2	1	
Qoffset 2 _{s, n}	dB	C1, 0 C1, 0 C1, 0 C1, 0	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C C3, C C3, C C3, C	22: 0 24: 0 25: 0 26: 0	C4, C2 C4, C3 C4, C5 C4, C6	C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst	dB	()	0		0)	0			0)	
Treselection	S	()	0		0		0	0		0		0	
Sintrasearch	dB	not	sent	not s	ent	not s	ent	not se	ent	not	sent	not	sent	
IE "FACH Measurement occasion info"	a nominal Îor		sent	not s		not sent		not sent		not sent			not sent	

Note 1 The nominal Îor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.5.1.4.2 Procedure

- 1) The SS activates cell 1-6 with RF parameters set up according to T1 in table 8.3.5.1.5.
- 2) The UE is switched on.
- 3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.
- 4) After 15 seconds from completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.1.5.
- 5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.1.5.

- 8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore the cell re-selection delay shall be less than 1.7 s.(Minimum requirement + 100ms). Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Contents of CELL UPDATE CONFIRM message for CELL_FACH

Information Element	Value/remark
RRC transaction identifier	0
Activation time	Not Present
New C-RNTI	010101010101010 B
RRC State indicator	CELL_FACH

8.3.5.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.5.1.5: Cell specific test requirements for Cell Re-selection in CELL_FACH, one freq. in neighbour list

Parameter	Unit	Ce	II 1	Се	Cell 2		II 3	Ce	II 4	Се	II 5	Cel	l 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Chan	nel 1	Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		
CPICH_Ec/lor	dB	9	.4	-6	.4	-1	0.5	-10	0.5	-10	0.5	-10	.5	
PCCPCH_Ec/lor	dB	-1 <i>′</i>	1.4	-1	1.4	-1	2.5	-12	2.5	-12	2.5	-12.5		
SCH_Ec/lor	dB	-11	1.4	-11.4		-1	2.5	-12.5		-12.5		-12.5		
PICH_Ec/lor	dB	-14	4.4	-14.4		-1	5.5 -1		-15.5		-15.5		.5	
S-CCPCH_Ec/lor	dB	-1 <i>°</i>	1.4	-1	1.4	-1	2.5	-12.5		-12.5		-12.5		
OCNS_Ec/lor	dB	-1.	52	-1.	.52	-1	.13	-1.	13	-1.13		-1.13		
\hat{I}_{or}/I_{oc} Note 1	dB	7.0	10.4	10.4	7.0	0	.3	0	.3	0	.3	0.3	3	
\hat{I}_{or}	dBm	-63.0	-59.6	-59.6 -63.0		-6	9.7	-69.7		-69.7		-69	.7	
I_{oc}	dBm/3.84 MHz					-70)						
CPICH_Ec/lo Note 1	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23	-23.5	

All other parameters and conditions specified in table 8.3.5.1.4 are unchanged.

Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.2 Two frequencies present in the neighbour list

8.3.5.2.1 Definition and applicability

The cell re-selection delay is defined as the time between the occurrence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the the preambles on the PRACH for sending RRC CELL UPDATE message to the UTRAN.

The requirements and this test apply to the FDD UE.

8.3.5.2.2 Minimum requirements

The cell re-selection delay shall be less than 1.9 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

If a cell has been detectable at least $T_{identify,inter}$, the cell reselection delay in CELL_FACH state to a FDD cell on a different frequency shall be less than

$$T_{reselection, inter} = T_{Measurement inter} + T_{IU} + 20 + T_{SI} + T_{RA} ms$$

where

 $T_{\mbox{\scriptsize Measurement_inter}}$ is 480 ms in this case

 T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

 T_{SI} = The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. 1280 ms is assumed in this test case.

 T_{RA} = The additional delay caused by the random access procedure. T_{RA} is a delay is caused by the physical random access procedure described in TS 25.214 clause 6.1. A persistence value is assumed to be 1 in this test case and therefore T_{RA} in this test case is 40 ms.

These requirements assume radio conditions to be sufficient, so that reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.2 and A.5.5.2.

8.3.5.2.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL_FACH state in the single carrier case

8.3.5.2.4 Method of test

8.3.5.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.5.2.1 to 8.3.5.2.5. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms

Table 8.3.5.2.1: General test parameters for Cell Re-selection in CELL_FACH, two freqs. in neighbour list

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
Access Service Class (ASC#0) – Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
T1		S	15	
T2		S	15	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in table 8.3.5.2.2 and table 8.3.5.2.3.

Table 8.3.5.2.2: Physical channel parameters for S-CCPCH, two freqs. in neighbour list

Parameter	Unit	Level
Channel bit rate	kbps	60
Channel symbol rate	ksps	30
Slot Format #I	-	4
TFCI	-	OFF
Power offsets of TFCI and Pilot fields relative to data field	dB	0

Table 8.3.5.2.3: Transport channel parameters for S-CCPCH, two freqs. in neighbour list

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

Table 8.3.5.2.4: Cell specific conditions for Cell re-selection in CELL_FACH state, two freqs. in neighbour list

Parameter	Unit		ell 1	Ce	Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T1 T2		T2	1	Γ1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Chan	nel 1	Channel		Channel 1		С	Channel 1		Channel 2		Chann	nel 2
CPICH_Ec/lor	dB	-10		-10		-10		-10		-10		-10		
PCCPCH_Ec/lor	dB	-12		-12	-12		-12		-12		-12		-12	
SCH_Ec/lor	dB	-12		-12		-12			-12		-12		-12	
PICH_Ec/lor	dB	-15		-15		-15			15		-15		-15	
S-CCPCH_Ec/lor	dB	-12		-12		-12		-1			-12		-12	
OCNS_Ec/lor	dB	-1.29	5	-1.295	5	-1.295		-1	.295		-1.295		-1.295	
\hat{I}_{or}/I_{oc}	dB	-1.8	2.2	2.2	-1.8	-6.8	-4.8	-6	8.8	-4.8	-4.8	-6.8	-4.8	-6.8
$\hat{I}_{or(Note1)}$	dBm	- 71.85	- 67.75	- 67.75	- 71.85	- 76.85	- 74.7	' 5	- 76.85	- 74.7	- 5 74.75	- 76.85	- 74.75	- 76.85
I_{oc}	dBm/3.8 4 MHz	-70												
CPICH_Ec/lo	dB	-15	-13	-13	-15	-2	:0		-20)	-20	0	-:	20
Propagation Condition		AWG	N					ı						
Cell_selection_ and_reselection_ quality_measure		CPIC E₀/N₀		CPICH E _o /N₀		CPICH E ₀ /N ₀	ł	CPICH E ₀ /N ₀		CPICH E ₀ /N ₀		CPICH E ₀ /N ₀		
Qqualmin	dB	-20		-20		-20		-2	:0		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115			-115		-115	
UE_TXPWR_ MAX_RACH	dBm	21		21		21		21		21		21		
Qoffset2 _{s, n}	dB	C1, C C1, C C1, C C1, C	3: 0 3: 0 54: 0 55: 0	C2, C C2, C C2, C C2, C C2, C	3: 0 4: 0 5: 0	C3, C2: 0 C4, C C3, C4: 0 C4, C C3, C5: 0 C4, C		C4, C2: 0 C4, C3: 0 C4, C5: 0		C5, C2: (C5, C3: (C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0	,		0		0	
Treselection	S	0		0		0		0			0		0	
Sintrasearch	dB	not se	ent	not se	nt	not se	nt	no	ot sent		not sent		not se	nt
Sintersearch	dB	not se	ent	not se	nt	not se	nt	no	ot sent		not sent		not se	nt
IE "FACH Measurement occasion info"		sent		sent		sent		se	ent		Sent		sent	
FACH Measurement occasion cycle length coefficient		3		3		3		3	3		3		3	
Inter-frequency FDD measurement indicator		TRUE	Ē	TRUE		TRUE		TRUE		TRUE		TRUE		
Inter-frequency TDD measurement indicator		FALS	SE	FALS	E	FALSE FAL		ALSE		FALSE		FALSI	FALSE	

Note 1 The nominal Îor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.5.2.4.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1 in table 8.3.5.2.5.
- 2) The UE is switched on.
- 3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

- 4) After 15 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.2.5.
- 5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.2.5.
- 8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.
- 10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore the cell re-selection delay shall be less than 2.0 s.(Minimum requirement + 100ms).

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Contents of CELL UPDATE CONFIRM message for CELL_FACH

Information Element	Value/remark
RRC transaction identifier	0
Activation time	Not Present
New C-RNTI	010101010101010 B
RRC State indicator	CELL_FACH

8.3.5.2.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.5.2.5: Cell specific test requirements for Cell re-selection in CELL_FACH state, two freqs. in neighbour list

Parameter	Unit	Ce	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2											

UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/lor	dB	-9.4		-9.4		-10.7		-10.7		-10.7		-10.7	
PCCPCH_Ec/lor	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
SCH_Ec/lor	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
PICH_Ec/lor	dB	-1-	4.4	-1	4.4	-1:	5.7	-1:	5.7	-15	5.7	-15	5.7
S-CCPCH_Ec/lor	dB	-1	1.4	-1	1.4	-1:	2.7	-1:	2.7	-12	2.7	-12	2.7
OCNS_Ec/lor	dB	-1	.52	-1	.52	-1	.08	-1	.08	-1.	08	-1.	80
\hat{I}_{or}/I_{oc} Note 1	dB	-1.80	+4.64	+4.64	-1.80	-6.80	-3.16	-6.80	-3.16	-3.16	-6.80	-3.16	-6.80
\hat{I}_{or}	dBm	-71.8	-67.0	-67.0	-71.8	-76.8	-74.8	-76.8	-74.8	-74.8	-76.8	-74.8	-76.8
I_{oc}	dBm/3.8 4 MHz	-70.0	-71.6	-71.6	-70.0	-70.0	-71.6	-70.0	-71.6	-71.6	-70.0	-71.6	-70.0
CPICH_Ec/lo Note 1	dB	-14.4	-11.6	-11.6	-14.4	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7

All other parameters and conditions specified in table 8.3.5.2.4 are unchanged.

Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

Note 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.3 Cell Reselection to GSM

8.3.5.3.1 Definition and applicability

The cell re-reselection delay is defined as the time from the beginning of time period T2, to the moment when the UE starts to transmit the random access in Cell 2 (the GSM cell).

This requirements and this test apply to UE supporting FDD PS and GSM GPRS.

8.3.5.3.2 Minimum requirements

The cell re-selection delay shall be less than $5.5 + T_{RA}$ s.

The rate of correct reselections observed during repeated tests shall be at least 90%.

NOTE: The cell re-selection delay can be expressed

$$T_{\text{reselection, GSM}} = T_{\text{identify,GSM}} + T_{\text{measurement, GSM}} + 40 + T_{\text{BCCH}} + T_{\text{RA}} \text{ ms}$$

where:

T_{identify,GSM} Specified in TS 25.133 [2] clause 8.4.2.5.2.1, here it is 2880 ms

 $T_{measurement, GSM}$ Specified in TS 25.133 [2] clause 5.5.2.1.4, here it is 640 ms

T_{BCCH} According to TS 05.08 [xx], the maximum time allowed to read the BCCH data, when being

synchronized to a BCCH carrier, is 1.9 s.

T_{RA} The additional delay caused by the random access procedure in the GSM cell, is 10 ms (2 GSM

radio frames).

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.4 and A.5.5.3.

8.3.5.3.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL_FACH state.

8.3.5.3.4 Method of test

8.3.5.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.5.3.1 to 8.3.5.3.5. This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. The UTRAN cell and the GSM cell are set to belong to different location areas. The GSM cell shall be set up to allow UE to transmit radio access burst in every GSM radio frame. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 6 GSM cells.

Table 8.3.5.3.1: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment		
Initial condition			Cell1			
	Neighbour cell		Cell2			
Final condition	Active cell		Cell2			
HCS				Not used		
Neighbour cell list size			24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1			
T1		S	5			
T2		S	10			

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in Table 8.3.5.3.2 and Table Table 8.3.5.3.3.

Table 8.3.5.3.2: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	kbps	60
Channel symbol rate	ksps	30
Slot Format #I	-	4
TFCI	-	OFF
Power offsets of TFCI and Pilot fields relative to data field	dB	0

Table 8.3.5.3.3: Transport channel parameters for S-CCPCH

Parameter	FACH			
Transport Channel Number	1			
Transport Block Size	240			
Transport Block Set Size	240			
Transmission Time Interval	10 ms			
Type of Error Protection	Convolution Coding			
Coding Rate	1/2			
Rate Matching attribute	256			
Size of CRC	16			
Position of TrCH in radio frame	Fixed			

Table 8.3.5.3.4: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)		
		T1	T2	
UTRA RF Channel		Chan	nal 1	
Number		Channel 1		
CPICH_Ec/lor	dB	-1		
PCCPCH_Ec/lor	dB	-1	2	
SCH_Ec/lor	dB	-1		
PICH_Ec/lor	dB	-1	5	
S-CCPCH_Ec/lor	dB	-12		
OCNS_Ec/lor	dB	-1.295		
\hat{I}_{or}/I_{oc}	dB	0	-5	
I_{oc}	dBm/3.84 MHz	-70		
CPICH_Ec/lo	dB	-13	-16.2	
CPICH_RSCP	dBm	-80	-85	
Propagation Condition		AWGN		
Cell_selection_and_				
reselection_quality_mea		CPICH Ec/Io		
sure				
Qqualmin	dB	-20		
Qrxlevmin	dBm	-11	15	
UE_TXPWR_MAX_ RACH	dBm	21		
Qoffset1 _{s, n}	dB	C1, C2: 0		
Qhyst1	dB	0		
Treselection	S	0		
Ssearch _{RAT}	dB	Not sent		
IE "FACH Measurement occasion info"		Sent		
FACH Measurement				
occasion cycle length		3	3	
coefficient				
Inter-frequency FDD			0.5	
measurement indicator		FAL	.5E	
Inter-frequency TDD		FALSE		
measurement indicator		FAL	JE	
Inter-RAT measurement indicators		Included		
>RAT type		GS	N/S	
>NAT type		93	JIVÍ	

Table 8.3.5.3.5: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)		
		T1	T2	
Absolute RF Channel Number		ARFCN 1		
RXLEV	dBm	-90	-75	
RXLEV_ACCESS_ MIN	dBm	-104		
MS_TXPWR_MAX_ CCH	dBm	33		

8.3.5.3.4.2 Procedure

- 1) The SS activates cell 1-2 with RF parameters set up according to T1 in tables 8.3.5.3.4 and 8.3.5.3.5.
- 2) The UE is switched on.
- 3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in CELL_FACH and the SS waits for this process to complete.
- 4) After 5 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in tables 8.3.5.1.4 and 8.3.5.1.5.

- 5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 5.51 s (=5.5 s + T_{RA} s) from the beginning of time period T2 then a success is recorded and the SS completes the location update procedure in GSM and the procedure continues with step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 10s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS completes the location update procedure in GSM and the procedure continues with step 7.
- 7) After 10 s from the beginning of time period T2, the parameters are changed to those defined for T1 in tables 8.3.5.1.4 and 8.3.5.1.5.
- 8) The SS waits for random access requests from the UE on cell 1. The SS completes the location update procedure in UTRA
- 9) Repeat step 3) to 8) until the confidence level according to annex F.6.2 is achieved.

8.3.5.3.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6 Cell Re-selection in CELL_PCH

8.3.6.1 One frequency present in the neighbour list

8.3.6.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.6.1.2 Minimum requirements

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95%.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

T_{evaluateFDD} See table 4.1 in TS 25.133 [2] clause 4.2.2.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received

by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.6.2 and A.5.6.1.

8.3.6.1.3 Test purpose

To verify that the UE meets the minimum requirements and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.6.1.4 Method of test

8.3.6.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 carrier and 6 cells as given in tables 8.3.6.1.1 to 8.3.6.1.3. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms.

Table 8.3.6.1.1: General test parameters for Cell Re-selection in CELL_PCH, one freq. in neighbour list

	Parameter	Unit	Value	Comment
initial	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4,	
			Cell5, Cell6	
final	nal Active cell Cell1		Cell1	
condition				
Access Service Class (ASC#0)				Selected so that no additional delay is caused by the
- Persisten	- Persistence value		1	random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle	length	S	1.28	The value shall be used for all cells in the test.
T1		S	15	T1 need to be defined so that cell re-selection reaction
				time is taken into account.
T2	s 15		15	T2 need to be defined so that cell re-selection reaction
				time is taken into account.

Table 8.3.6.1.2: Cell specific test parameters for Cell re-selection in CELL_PCH state, one freq. in neighbour list

Parameter	Unit	Ce	ell 1	Ce	I 2	Cel	I 3	Ce	II 4	C	ell 5	Ce	II 6
Parameter	Offic	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Chann	el 1	Channe	el 1	Chann	iel 1	Chanr	nel 1	Chanr	nel 1	Chanr	nel 1
CPICH Ec/lor	dB	-10		-10		-10		-10	-10		-10		
PCCPCH_Ec/lor	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/lor	dB	-12		-12		-12		-12	-12		-12		
PICH_Ec/lor	dB	-15		-15				-15		-15		-15	
OCNS_Ec/lor	dB	-0.941		-0.941	-0.941			-0.941		-0.941		-0.941	
\hat{I}_{or}/I_{oc}	dB	7.3	10.27	10.27	10.27 7.3			0.27		0.27		0.27	
$\hat{I}_{or(Note1)}$	dBm	-62.73	-59.73	-59.73	-59.73 -69.73 -		-69.73		-69.73	3	-69.73	3	
I_{oc}	dBm/ 3.84MHz	-70	0								•		
CPICH_Ec/lo	dB	-16	-13	-13 -16		-23		-23		-23		-23	
Propagation Condition							AW	GN					
Cell_selection_and_ reselection_quality_ measure		СРІСН	E ₀ /N ₀	СРІСН	E _c /N ₀	CPICH E₀/N₀	ł	CPICH E _c /N ₀		CPICH E ₀ /N ₀		CPICH E ₀ /N ₀	1
Qqualmin	dB	-2	20	-2	0	-2	0	-:	20	-20		-20	
Qrxlevmin	dBm	-1	15	-11	15	-11	15	-1	15	-1	115	-1	15
UE_TXPWR_ MAX_RACH	dBm	2	21	2	1	2	1	2	:1	21		21	
Qoffset2 _{s, n}	dB	C1, C1, C1,	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB		0	C)	0		0		0		0	
Treselection	S		0	C)	0	0 0 0		0	0			
Sintrasearch	dB	not	sent	not s	sent	not s	ent	not	sent	not sent		not sent	

Note 1 The nominal Îor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.6.1.4.2 Procedure

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.6.1.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) An RRC connection is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_PCH state on Cell 2 and then the SS waits for this process to complete.
- 4) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.6.1.3.
- 5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.6.1.3.

- 8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	100

Contents of CELL UPDATE CONFIRM message for CELL_PCH

Information Element	Value/remark
RRC transaction identifier	0
Activation time	Not Present
RRC State indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

8.3.6.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.6.1.3: Cell specific test requirements for Cell re-selection in CELL_PCH state, one freq. in neighbour list

Parameter	Unit	C	ell 1	Се	II 2	Ce	ell 3	Cel	4	Ce	ell 5	Ce	ell 6
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channe	Channel 1		Channel 1		Channel 1		nel 1	Channel 1	
CPICH_Ec/lor	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/lor	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/lor	dB	-11.4	4 -11.4			-12.5		-12.5		-12.5		-12.5	
PICH_Ec/lor	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
OCNS_Ec/lor	dB	-1.10		-1.10		-0.83		-0.83		-0.83		-0.83	
\hat{I}_{or}/I_{oc} Note 1	dB	7.00	10.40	10.40	7.00	0.30	0.30		0.30		0.30		
\hat{I}_{or}	dBm	- 63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm / 3,84 MHz		-70										
CPICH_Ec/lo Note 1	dB	- 15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

All other parameters and conditions specified in table 8.3.6.1.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6.2 Two frequencies present in the neighbour list

8.3.6.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.6.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

T_{evaluateFDD} See table 4.1 in TS 25.133 [2] clause 4.2.2.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by

the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.6.2 and A.5.6.2.

8.3.6.2.3 Test purpose

To verify that the UE meets the minimum requirement and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.6.2.4 Method of test

8.3.6.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.3.6.2.1 to 8.3.6.2.3. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms.

Table 8.3.6.2.1: General test parameters for Cell Re-selection in CELL_PCH, two freqs. in neighbour list

	Parameter	Unit	Value	Comment
initial	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
final condition	Active cell		Cell1	
Access Ser - Persisten	rvice Class (ASC#0) ce value	-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle	length	S	1.28	The value shall be used for all cells in the test.
T1		S	15	T1 need to be defined so that cell reselection reaction time is taken into account.
T2	T2		15	T2 need to be defined so that cell reselection reaction time is taken into account.

Table 8.3.6.2.2: Cell specific test parameters for Cell re-selection in CELL_PCH state, two freqs. in neighbour list

Parameter	Unit	Ce	ell 1	Ce	ell 2	Cel	I 3	Ce	II 4	Cell	15	Ce	ell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Chan	nel 1	Chan	nel 2	Chann	el 1	Channel 1		Channel 2		Channel 2		
CPICH_Ec/lor	dB	-10		-10		-10		-10		-10		-10		
PCCPCH_Ec/lor	dB	-12		-12		-12 -12	-12			-12		-12		
SCH_Ec/lor	dB	-12		-12				-12		-12		-12		
PICH_Ec/lor	dB	-15		-15		-15		-15		-15		-15		
OCNS_Ec/lor	dB	-0.94	1	-0.94	1	-0.941		-0.941		-0.941		-0.941		
\hat{I}_{or}/I_{oc}	dB	-3.4	2.2	2.2	-3.4	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4	
$\hat{I}_{or(Note1)}$	dBm	- 73.3 9	- 67.75	- 67.7 5	- 73.39	- 77.39	- 74.7 5	- 77.39	- 74.75	-74.75	- 77.39	- 74.7 5	- 77.39	
I_{oc}	dBm/3.8 4 MHz	-70												
CPICH_Ec/lo	dB	-16	-13	-13	-16	-20		-20		-20		-20		
Propagation Condition							A	AWGN						
Cell_selection_ and_reselection_ quality_measure		CPIC E ₀ /N ₀		CPIC E _c /N ₀		CPICH E _c /N ₀		CPICH E₀/N₀		CPICH E _c /N ₀		CPICH E₀/N₀		
Qqualmin	dB		20	-7	20	-2	0	-20		-20		-20		
Qrxlevmin	dBm	-1	15	-1	15	-11	5	-1	15	-11	5	-1	15	
UE_TXPWR_ MAX_RACH	dBm	2	21	2	21	2	1	2	1	21		2	21	
Qoffset2 _{s, n}	dB	C1, C1, C1,	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C C3, C	C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB		0		0	C)	0			0	
Treselection	S		0		0	0		(0		0		0	
Sintrasearch	dB	not	sent	not	sent	not s	ent	not	not sent		not sent		not sent	
Sintersearch	dB	not	sent	not	sent	not s	ent	not	sent	not s	ent	not	sent	

Note 1 The nominal Îor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.6.2.4.2 Procedure

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.6.2.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) A RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in CELL_PCH state on cell 2. The SS waits for this process to complete.
- 4) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.6.2.3.
- 5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.6.2.3.

- 8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	100

Contents of CELL UPDATE CONFIRM message for CELL_PCH

Information Element	Value/remark
RRC transaction identifier	0
Activation time	Not Present
RRC State indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

Contents of CELL UPDATE CONFIRM message for CELL_PCH

Information Element	Value/remark
RRC transaction identifier	0
Activation time	Not Present
RRC State indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

8.3.6.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Table 8.3.6.2.3: Cell specific test requirements for Cell re-selection in CELL_PCH state, two freqs. in neighbour list

Parameter	Unit	Ce	II 1	Ce	Cell 2		Cell 3		Cell 4		Cell 5		II 6
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2

UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2		
CPICH_Ec/lor	dB	-6	-9.3		-9.3		-10.8		-10.8		-10.8		-10.8	
PCCPCH_Ec/lor	dB	-1	1.3	-1	-11.3		-12.8		-12.8		-12.8		2.8	
SCH_Ec/lor	dB	-1	1.3	-1	-11.3		-12.8		-12.8		-12.8		-12.8	
PICH_Ec/lor	dB	-1	-14.3		-14.3		5.8	-15.8		-15.8		-15.8		
OCNS_Ec/lor	dB	-1	-1.13		-1.13		-0.77		-0.77		-0.77		77	
\hat{I}_{or}/I_{oc} Note 1	dB	-3.40	+4.80	+4.80	-3.40	-7.40	-3.00	-7.40	-3.00	-3.00	-7.40	-3.00	-7.40	
\hat{I}_{or}	dBm	-73.4	-67.0	-67.0	-73.4	-77.4	-74.8	-77.4	-74.8	-74.8	-77.4	-74.8	-77.4	
I_{oc}	dBm/3.8 4 MHz	-70.0	-71.8	-71.8	-70.0	-70.0	-71.8	-70.0	-71.8	-71.8	-70.0	-71.8	-70.0	
CPICH_Ec/lo Note 1	dB	-15.3	-11.5	-11.5	-15.3	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	

All other parameters and conditions specified in table 8.3.6.2.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.7 Cell Re-selection in URA_PCH

8.3.7.1 One frequency present in the neighbour list

8.3.7.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the URA UPDATE message with cause value "URA reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.7.1.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95%.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

T_{evaluateFDD} See table 4.1 in TS 25.133 [2] clause 4.2.2.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received

by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.7.2 and A.5.7.1.

8.3.7.1.3 Test purpose

To verify that the UE meets the minimum requirement and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.7.1.4 Method of test

8.3.7.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 carrier and 6 cells as given in tables 8.3.7.1.1 to 8.3.7.1.3. The UE is requested to monitor neighbouring cells on 1 carrier. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. In System Information Block Type 2 cell1 and cell 2 URA identity is set to a different value.

Table 8.3.7.1.1: General test parameters for Cell Re-selection in URA_PCH, one freq. in neighbour list

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
SYSTEM INFORMATION BLOCK TYPE 2 - URA identity list - URA identity		-	0000 0000 0000 0001(B) (Cell 1) 0000 0000 0000 0010(B) (Cell 2)	
Access Se - Persisten	rvice Class (ASC#0) ce value	-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle	length	S	1,28	The value shall be used for all cells in the test.
T1		S	15	T1 need to be defined so that cell re-selection reaction time is taken into account.
T2		S	15	T2 need to be defined so that cell re-selection reaction time is taken into account.

Table 8.3.7.1.2: Cell specific test parameters for Cell re-selection in URA_PCH state, one freq. in neighbour list

Parameter	Unit	Ce	ell 1	Cell	2	Cell 3	Cell 4	Cell 5	Cell 6	
		T1	T2	T1	T2	T1 T2	T1 T2	T1 T2	T1 T2	
UTRA RF Channel		Chanr	el 1	Channel	1	Channel 1	Channel 1	Channel 1	Channel 1	
Number	ID	40		40		10	40	40	40	
CPICH_Ec/lor	dB	-10		-10		-10	-10	-10	-10	
PCCPCH_Ec/lor	dB	-12		-12		-12	-12	-12	-12	
SCH_Ec/lor	dB	-12		-12		-12	-12	-12	-12	
PICH_Ec/lor	dB	-15		-15		-15	-15	-15	-15	
OCNS_Ec/lor	dB	-0,941		-0,941		-0,941	-0,941	-0,941	-0,941	
\hat{I}_{or}/I_{oc}	dB	7,3	10,27	10,27	7,3	0,27	0,27	0,27	0,27	
$\hat{I}_{or(Note\;1)}$	dBm	-62.73	-59.73	-59.73	62.73	-69.73	-69.73	-69.73	-69.73	
I_{oc}	dBm / 3,84 MHz	-70	•	•						
CPICH_Ec/lo	dB	-16	-13	-13	-16	-23	-23	-23	-23	
Propagation						AW	⊇NI			
Condition						AVV	JIN			
Cell_selection_and_										
reselection_quality_		CPICE	$H E_c/N_0$	CPICH E	$_{o}/N_{0}$	CPICH E ₀ /N ₀	CPICH E₀/N₀	CPICH E _c /N ₀	CPICH E ₀ /N ₀	
measure										
Qqualmin	dB		20	-20		-20	-20	-20	-20	
Qrxlevmin	dBm	-1	15	-11:	5	-115	-115	-115	-115	
UE_TXPWR_MAX_ RACH	dB	2	.1	21		21	21	21	21	
		C1,	C2: 0	C2, C	1: 0	C3, C1: 0	C4, C1: 0	C5, C1: 0	C6, C1: 0	
		C1,	C3: 0	C2, C		C3, C2: 0	C4, C2: 0	C5, C2: 0	C6, C2: 0	
Qoffset2 _{s, n}	dB	C1,	C4: 0	C2, C	4: 0	C3, C4: 0	C4, C3: 0	C5, C3: 0	C6, C3: 0	
		C1,	C5: 0	C2, C	5: 0	C3, C5: 0	C4, C5: 0	C5, C4: 0	C6, C4: 0	
		C1,	C6: 0	C2, C	6: 0	C3, C6: 0	C4, C6: 0	C5, C6: 0	C6, C5: 0	
Qhyst2	dB)	0		0	0	0	0	
Treselection	S)	0		0	0	0	0	
Sintrasearch	dB	not	sent	not se	ent	not sent	not sent	not sent	not sent	

Note 1 The nominal Îor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.7.1.4.2 Procedure

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.7.1.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) An RRC connection is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the URA_PCH state on Cell 2 and then the SS waits for this process to complete.
- 4) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.7.1.3.
- 5) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After a total of another 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.7.1.3.

- 8) If the UE responds on Cell 2 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	100

Contents of URA UPDATE CONFIRM message for URA_PCH

Information Element	Value/remark				
RRC transaction identifier	0				
RRC state indicator	URA_PCH				
UTRAN DRX cycle length coefficient	7				
URA identity	000000000000010 B				

8.3.7.1.5 Test requirements

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of 95 % of the cases.

Table 8.3.7.1.3: Cell specific test requirements for Cell re-selection in URA_PCH state, one freq. in neighbour list

Parameter	Unit	C	ell 1	Се	Cell 2		Cell 3		Cell 4		Cell 5		ell 6
		T1	T2	T1	T1 T2		T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Chan	Channel 1		el 1	Channel 1		Channel 1	
CPICH_Ec/lor	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/lor	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/lor	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/lor	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
OCNS_Ec/lor	dB	-1.10		-1.10		-0.83		-0.83		-0.83		-0.83	
\hat{I}_{or}/I_{oc} Note 1	dB	7.00	10.40	10.40	7.00	0.30	.30 0.30			0.30		0.30	
\hat{I}_{or}	dBm	- 63.0	-59.6	-59.6	9.6 -63.0 -69.7			-69.7		-69.7		-69.7	
I_{oc}	dBm / 3,84 MHz						-7	0					
CPICH_Ec/lo Note 1	dB	- 15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

All other parameters and conditions specified in table 8.3.7.1.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.7.2 Two frequencies present in the neighbour list

8.3.7.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the URA UPDATE message with cause value "URA reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.7.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

T_{evaluateFDD} See table 4.1 in TS 25.133 [2] clause 4.2.2.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by

the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.7.2 and A.5.7.2.

8.3.7.2.3 Test purpose

To verify that the UE meets the minimum requirement and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.7.2.4 Method of test

8.3.7.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.3.7.2.1 to 8.3.7.2.3. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. In System Information Block Type 2 in cell 1 and cell 2 URA identity is set to different value.

Table 8.3.7.2.1: General test parameters for Cell Re-selection in URA_PCH, two freqs. in neighbour

	Parameter	Unit	Value	Comment									
Initial	Active cell		Cell2										
condition	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6										
Initial condition	Active cell Cell2		Cell1										
SYSTEM II BLOCK TY - URA iden - URA iden	ntity list	-	0000 0000 0000 0001(B) (Cell 1) 0000 0000 0000 0010(B) (Cell 2)										
	Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.									
HCS				Not used									
DRX cycle	DRX cycle length		RX cycle length		X cycle length s		length		1,28	The value shall be used for all cells in the test.			
T1		S	15	T1 need to be defined so that cell reselection reaction time is taken into account.									
	T2	S	15	T2 need to be defined so that cell reselection reaction time is taken into account.									

Table 8.3.7.2.2: Cell specific test parameters for Cell Re-selection in URA_PCH state, two freqs. in neighbour list

Parameter	Unit	Ce	II 1	С	ell 2	- (Cell 3		Ce	ell 4	С	ell 5		Ce	ell 6
		T1	T2	T1	T2	T1	٦	Γ2	T1	T2	T1	Tź	2 7	⁻ 1	T2
UTRA RF Channel		Chan	nol 1	Chr	Channel 2		Channel 1		Channel 1		Cha	Channel 2		Channel 2	
Number		Cital	illei i	Channel 2 Channel 1		Chamilei		Cita	Charline 2		Charmer 2				
CPICH_Ec/lor	dB		10		-10		-10			10	_	-10			10
PCCPCH_Ec/lor	dB		12		-12		-12			12		-12			12
SCH_Ec/lor	dB		12		-12		-12			12		-12			12
PICH_Ec/lor	dB		15		-15		-15			15		-15			15
OCNS_Ec/lor	dB	-0.9	941	-C).9 <u>41</u>	-	0.941		-0.	941	-0	.941		-0.	941
\hat{I}_{or}/I_{oc}	dB	-3.4	2.2	2.2	-3.4	-7.	4 -4	1.8	-7.4	-4.8	-4.8	-7.	4 -4	1.8	-7.4
$\hat{I}_{or(Note1)}$	dBm	-73.39	- 67.7 5	- 67.7 5	- 73.3 9	- 77.3 9	- 74.7 5	- 77 9	7.3 74 5	i.7 -7		- 77.3 9	74.7 5	-7	77.39
I_{oc}	dBm / 3.84 MHz		-		- ,	-		-7	70						
CPICH_Ec/lo	dB	-16	-13	-13	-16		-20		-2	20		20		-	20
Propagation Condition								AW	'GN						
Cell_selection_and_ reselection_quality_ measure		CPICH	I E₀/N₀	CPIC	CH E₀/N₀	СРІ	CPICH E ₀ /N ₀ CPICH E ₀ /N ₀		CPIC	CPICH E√N₀		PICI	H E₀/N₀		
Qqualmin	dB	-2	20		-20		-20		-20			-20		-20	
Qrxlevmin	dBm	-1	15	-	115		-115		-1	15	-	115		-1	15
UE_TXPWR_MAX_ RACH	dB	2	1		21		21		2	21		21		21	
Qoffset2 _{s, n}	dB	C1, (C2: 0 C3: 0 C4: 0	C2, C3: 0		C	C3, C1: 0 C3, C2: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0		C5,	C5, C1: 0 C5, C2: 0 C5, C3: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0	
QUIISCIZS, n	ub.	C1, 0	C5: 0	C2, C4: 0 C2, C5: 0 C2, C6: 0		C	C3, C4: 0 C3, C5: 0 C3, C6: 0		C4,	C5: 0 C5: 0 C6: 0	C5,	C4: 0 C6: 0		C6,	C4: 0 C5: 0
Qhyst2	dB)		0		0		0			0			0
Treselection	S	(0		0		0		0			0		0	
Sintrasearch	dB	not:	not sent		not sent		ot sent		not sent		no	not sent		not sent	
Sintersearch	dB	not:	sent	no	t sent	n	ot sent		not	not sent		not sent		not sent	

Note 1 The nominal Îor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.7.2.4.2 Procedures

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.7.2.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) An RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in URA_PCH state on cell 2. The SS waits for this process to complete.
- 4) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.7.2.3.
- 5) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.7.2.3.

- 8) If the UE responds on Cell 2 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	100

Contents of URA UPDATE CONFIRM message for URA_PCH

Information Element	Value/remark				
RRC transaction identifier	0				
RRC state indicator	URA_PCH				
UTRAN DRX cycle length coefficient	7				
URA identity	000000000000010 B				

8.3.7.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Table 8.3.7.2.3: Cell specific test requirements for Cell re-selection in URA_PCH state, two freqs. in neighbour list

Parameter	Unit	Се	II 1	Cell 2		Cell 3 Cell 4		Cell 5		Cell 6			
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Chann	nel 1	Chann	nel 2	Chann	nel 1	Chann	el 1	Chann	iel 2	Chann	el 2
CPICH_Ec/lor	dB	-6	9.3	-6	9.3	-10	0.8	-10.8		-10	0.8	-10	0.8
PCCPCH_Ec/lor	dB	-1	1.3	-1	1.3	-12	2.8	-12	2.8	-12	2.8	-12.8	
SCH_Ec/lor	dB	-11.3		-1	1.3	-12	-12.8 -12.8		-12.8		-12.8		
PICH_Ec/lor	dB	-1	4.3	-1	4.3 -15.8		-15.8		-15.8		-15.8		
OCNS_Ec/lor	dB	-1	.13	-1	.13	-0.	.77	-0.	.77	-0.	.77	-0.	77
\hat{I}_{or}/I_{oc} Note 1	dB	-3.40	+4.80	+4.80	-3.40	-7.40	-3.00	-7.40	-3.00	-3.00	-7.40	-3.00	-7.40
\hat{I}_{or}	dBm	-73.4	-67.0	-67.0	-73.4	-77.4	-74.8	-77.4	-74.8	-74.8	-77.4	-74.8	-77.4
I_{oc}	dBm/3.8 4 MHz	-70.0	-71.8	-71.8	-70.0	-70.0	-71.8	-70.0	-71.8	-71.8	-70.0	-71.8	-70.0
CPICH_Ec/lo Note 1	dB	-15.3	-11.5	-11.5	-15.3	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8

All other parameters and conditions specified in table 8.3.7.2.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4 RRC Connection Control

8.4.1 RRC Re-establishment delay

8.4.1.1 Test 1

8.4.1.1.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{\text{UE-RE-ESTABLISH-REQ}}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send preambles on the PRACH.

 $T_{\text{UE-RE-ESTABLISH-REQ}}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.1.2 Minimum requirement

The Re-establishment delay $T_{\text{RE-ESTABLISH}}$ to a known cell shall be less than 1.9 s.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

 $T_{\text{RE-ESTABLISH}} = T_{\text{RRC-RE-ESTABLISH}} + T_{\text{UE-RE-ESTABLISH-REQ-KNOWN}}.$

where

 $T_{RRC-RE-ESTABLISH} = 160ms + (N_{313}-1)*10ms + T_{313}$

 $T_{UE-RE-ESTABLISH_REQ-KNOWN} = 50ms + T_{search} + T_{SI} + T_{RA}$

 $N_{313} = 20$

 $T_{313} = 0s$

 $T_{\text{search}} = 100 \text{ms}$

 T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

T_{SI} is the time required for receiving all the relevant system information data according to the

reception procedure and the RRC procedure delay of system information blocks defined in 25.331

for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 1820ms, allow 1.9s in the test case.

8.4.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.1.4 Method of test

8.4.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.1, table 8.4.1.2, and table 8.4.1.3 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consist of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.1 General test parameters for RRC re-establishment delay, Test 1

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference measurement channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control		On	
Active cell, Initial condition		Cell 1	
Active cell, Final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall only include intra frequency neighbours.
Cell 2			Included in the monitored set
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

Table 8.4.1.2 Cell specific parameters for RRC re-establishment delay test, Test 1

Parameter	Unit	Cell 1	Cell 2
		T0	T0
Cell Frequency	ChNr	1	1
CPICH_Ec/lor	dB	-10	-10
PCCPCH_Ec/lor	dB	-12	-12
SCH_Ec/lor	dB	-12	-12
PICH_Ec/lor	dB	-15	-15
DCH_Ec/lor	dB	-17	-infinity
OCNS_Ec/lor	dB	-1.049	-0.941
\hat{I}_{or}/I_{oc}	dB	2.39	-infinity
I_{oc}	dBm/ 3.84 MHz	-7	0
CPICH_Ec/Io	dB	-12	-infinty
Propagation Condition		AW	GN

Table 8.4.1.3 Cell specific parameters for RRC re-establishment delay test, Test 1

Parameter	Unit	Ce	II 1	Ce	II 2
		T1	T2	T1	T2
Cell Frequency	ChNr		1	1	
CPICH_Ec/lor	dB	Ī	10	-1	0
PCCPCH_Ec/lor	dB	-	12	-1	2
SCH_Ec/lor	dB	1	12	-1	2
PICH_Ec/lor	dB	1	15	-1	5
DCH_Ec/lor	dB	-17	-Infinity	Not app	olicable
OCNS_Ec/lor	dB	-1.049	-0.941	-0.9	941
\hat{I}_{or}/I_{oc}	dB	2,39	-Infinity	4,39	0,02
I_{oc}	dBm/ 3.84		-7	0	
<i>0</i> ¢	MHz				
CPICH_Ec/lo	dB	-15	-Infinity	-1	3
Propagation Condition		AWGN			

8.4.1.1.4.2 Procedure

- 1) The RF parameters are set up according to T0.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters.
- 4) The RF parameters are setup according to T1.
- 5) 10 s after step4 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 2.0 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T0.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 1920ms(Minimum requirement + 100ms), allow 2s in the test case.

8.4.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Note:

If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1.2 Test 2

8.4.1.2.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{\text{UE-E-ESTABLISH-REQ}}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send preambles on the PRACH.

 $T_{\text{UE-RE-ESTABLISH-REQ}}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.2.2 Minimum requirement

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

T_{RE-ESTABLISH}= T_{RRC-RE-ESTABLISH}+ T_{UE-RE-ESTABLISH-REQ-UNKNOWN}.

where

 $T_{RRC-RE-ESTABLISH} = 160ms + (N_{313}-1)*10ms + T_{313}$

 $T_{\text{UE-RE-ESTABLISH-REQ-UNKNOWN}}\!\!=\!\!50ms\!+\!T_{\text{search}}*NF+T_{SI}+T_{RA},$

 $N_{313} = 20$

 $T_{313} = 0s$

 $T_{search} = 800 ms$

NF is the number of different frequencies in the monitored set. 3 frequencies are assumed in this test

case.

 T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

 T_{SI} is the time required for receiving all the relevant system information data according to the

reception procedure and the RRC procedure delay of system information blocks defined in 25.331

for a UTRAN cell (ms).1280 ms is assumed in this test case.

This gives a total of 4120ms, allow 4.2s in the test case.

8.4.1.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.2.4 Method of test

8.4.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.3 and table 8.4.1.4 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.3 General test parameters for RRC re-establishment delay, Test 2

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference measurement channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control		On	
Active cell, initial condition		Cell 1	
Active cell, final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall include 2 additional frequencies.
Cell 2			Cell 2 is not included in the monitored set. Cell 2 is located on one of the 2 additional frequencies of the monitored set.
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

Table 8.4.1.4 Cell specific parameters for RRC re-establishment delay test, Test 2

Parameter	Unit	Cell 1		Cel	II 2
		T1	T2	T1	T2
Cell Frequency	ChNr		1	2)
CPICH_Ec/lor	dB		10	-1	0
PCCPCH_Ec/lor	dB		12	-1	2
SCH_Ec/lor	dB		12	-1	2
PICH_Ec/lor	dB		15	-1	5
DCH_Ec/lor	dB	-17	-Infinity	Not app	olicable
OCNS_Ec/lor	dB	-1.049	-0.941	-0.9	941
\hat{I}_{or}/I_{oc}	dB	-3,35	-Infinity	-Infinity	0,02
I_{oc}	dBm/ 3.84 MHz		-	70	
CPICH_Ec/lo	dB	-15	-Infinity	-Infinity	-13
Propagation Condition		AWGN			

8.4.1.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.

- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters.
- 4) The SS waits for random access requests from the UE on cell 2.
- 5) 10 s after step3 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 4.3 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 4220ms(Minimum requirement + 100ms), allow 4.3s in the test case.

8.4.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%

Note:

If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.2 Random Access

8.4.2.1 Correct behaviour when receiving an ACK

8.4.2.1.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in clause 6 of TS 25.214 [5] and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.1.2 Minimum Requirements

The UE shall have capability to calculate initial power according to the open loop algorithm and apply this power level at the first preamble and increase the power on additional preambles. The absolute power applied to the first preamble shall have an accuracy as specified in table 6.3 of TS 25.101 [1]. The relative power applied to additional preambles shall have an accuracy as specified in clause 6.5.2.1 of 25.101 [1].

The absolute power applied to the first preamble shall be -30 dBm with an accuracy as specified in clause 6.4.1.1 of TS 25.101 [1]. The accuracy is \pm 9dB in the case of normal condition or \pm 12dB in the case of extreme condition.

There are two relative powers, one is the power difference for preamble ramping and another is the power difference between last preamble part and message part. From the test parameter in the table 8.4.2.1.2, the test requirement of the power difference for all preamble ramping is 3dB (Power offset P0). The accuracy is ± 2 dB as specified in clause 6.5.2.1 of 25.101 [1]. The test requirement of the power difference between 10th preamble PRACH and message part is 3 dB (note). The accuracy is ± 2 dB as specified in clause 6.5.2.1 of 25.101 [1].

NOTE: In order to calculate the power difference between 10^{th} preamble PRACH and message part by using Power offset P _{p-m} in the table 8.4.2.1.2, the gain factors of PRACH message part are needed. The gain factor β_d is set to 15. The temporary gain factor β_c is set to 15.

The UE shall stop transmitting preambles upon a ACK on the AICH has been received and then transmit a message. The UE shall transmit 10 preambles and 1 message.

The normative reference for this requirements is TS 25.133 [2] clauses 6.3.2 and A.6.2.2.1.

8.4.2.1.3 Test purpose

The purpose of this test is to verify that the behaviour of the random access procedure is according to the requirements and that the PRACH power settings are within specified limits.

8.4.2.1.4 Method of test

8.4.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.1 in the case of the PRACH power measurement. And in the case of the function test of the random access procedure, connect the SS to the UE antenna connector as shown in figure A.8. A spectrum analyzer is set to 0 span mode.

See TS 34.108 [3] for details regarding generic call setup procedure.

Table 8.4.2.1.1: RF Parameters for Random Access test

Parameter	Unit	Cell 1
UTRA RF Channel Number		Channel 1
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
Number of other transmitted Acquisition Indicators	-	0
AICH_Ec/lor	dB	-10
PICH_Ec/lor	dB	-15
OCNS_Ec/lor when an AI is not transmitted	dB	-0,941
OCNS_Ec/lor when an AI is transmitted	dB	-1,516
\hat{I}_{or}/I_{oc}	dB	0
I_{oc}	dBm/3. 84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN

The test parameters "System Information Block (SIB) type 5 (ASC #0)" defined in clause 6.1 of TS 34.108 [3], shall be used in all random access tests (see note). Crucial parameters for the test requirements are repeated in tables 8.4.2.1.2 and A.8.4.3.1.3 and these overrule the parameters defined in SIB type 5.

NOTE: A parameter of AC-to-ASC mapping(AC0-9) in SIB5 of clause 6.1 of TS 34.108 [3] shall be set to 0 in the case of all random access tests. The EFACC of Type A, which is specified in clause 8.3.2.15 of TS 34.108 [3], shall be selected.

Table 8.4.2.1.2: UE parameters for Random Access test

Parameter	Unit	Value
Access Service Class		
(ASC#0)		
	01	1
- Persistence value		
Maximum number of preamble		2
ramping cycles (M _{max}).		
Maximum number of		12
preambles in one preamble		
ramping cycle		
(Preamble Retrans Max)		
The backoff time T_{B01}	ms	N/A
N _{B01min=} N _{B01max}	#TTI	10
Dower step when no	4D	3
Power step when no	dB	3
acquisition indicator is received		
(Power offset P0)		
Power offset between the last	dB	0
transmitted preamble and the	uБ	U
control part of the message		
(Power offset P p-m)		
Maximum allowed UL TX	DBm	21
power	ווטטוו	<u> </u>
power		

Table 8.4.2.1.3: SS parameters for Random Access test

Parameter	Unit	Value
Primary CPICH DL TX power	dBm	-8
UL interference	dBm	-92
SIR in open loop power	dB	-10
control (Constant value)		
AICH Power Offset	dB	0

8.4.2.1.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an ACK on the AICH shall be transmitted after 10 preambles have been received by the SS
- 2) Measure the first PRACH preamble output power, the each power difference for preamble ramping and the power difference between 10th preamble PRACH and message part of the UE according to annex B.
- 3) Measure the number of the preamble part and the message part by using a spectrum analyzer.

8.4.2.1.5 Test requirements

The accuracy of the first preamble as specified in clause 6.4.1.1 of TS 25.101 [1] shall not be verified in this test. It is verified under the section 5.4.1, Open loop power control.

There are two relative powers, one is the power difference for preamble ramping and another is the power difference between last preamble part and message part. From the test parameter in the table 8.4.2.1.2, the test requirement of the power difference for all preamble ramping is 3dB (Power offset P0). The accuracy is ± 3 dB. The test requirement of the power difference between 10th preamble PRACH and message part (control + data) is 3 dB (note). The accuracy is ± 3 dB

Table 8.4.2.1.4:
Test requirement for power difference

	Power difference preambles	ence for all		etween 10th preamble ge part (control+data)
Test requirement	3dB	±3 dB	3dB	±3 dB

NOTE: In order to calculate the power difference between 10th preamble PRACH and message part by using Power offset P $_{p\text{-m}}$ in the table 8.4.2.1.2, the gain factors of PRACH message part are needed. The gain factor β_d is set to 15. The temporary gain factor β_c is set to 15.

The UE shall stop transmitting preambles upon a ACK on the AICH has been received and then transmit a message. The UE shall transmit 10 preambles and 1 message.

Table 8.4.2.1.5: RF Parameters for Random Access test

Parameter	Unit	Cell 1
UTRA RF Channel Number		Channel 1
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
Number of other transmitted Acquisition Indicators	-	0
AICH_Ec/lor	dB	-10
PICH_Ec/lor	dB	-15
OCNS_Ec/lor when an AI is not transmitted	dB	-0,941
OCNS_Ec/lor when an AI is transmitted	dB	-1,516
\hat{I}_{or}/I_{oc}	dB	0
I_{oc}	dBm/3. 84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.2.2 Correct behaviour when receiving an NACK

8.4.2.2.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in clause 6 of TS 25.214 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.2.2 Minimum Requirements

The UE shall stop transmitting preambles upon a NACK on the AICH has been received and then repeat the ramping procedure when the back off timer T_{B01} expires.

The UE shall transmit 10 preambles in the first ramping cycle and no transmission shall be done by the UE within 100 ms after the NACK has been transmitted by the SS. Then the UE shall start the second preamble ramping cycle.

The normative reference for this requirements is TS 25.133 [2] clauses 6.3.2 and A.6.2.2.2.

8.4.2.2.3 Test purpose

The purpose of this test is to verify that the behaviour of the random access procedure is according to the requirements.

8.4.2.2.4 Method of test

8.4.2.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.8. A spectrum analyzer is set to 0 span mode.

See TS 34.108 [3] for details regarding generic call setup procedure.

8.4.2.2.4.2 Procedure

- A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an NACK on the AICH shall be transmitted after 10 preambles have been received by the SS
- 2) Measure the number of the preamble part and the time delay between 10th preamble in the first ramping cycle and first preamble in the second ramping cycle by using a spectrum analyzer.

8.4.2.2.5 Test requirements

The UE shall stop transmitting preambles upon a NACK on the AICH has been received and then repeat the ramping procedure when the back off timer T_{B01} expires.

The UE shall transmit 10 preambles in the first ramping cycle and no transmission shall be done by the UE within 100 ms after the NACK has been transmitted by the SS. Then the UE shall start the second preamble ramping cycle.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.2.3 Correct behaviour at Time-out

8.4.2.3.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in clause 6 of TS 25.214 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.3.2 Minimum Requirements

The UE shall stop transmit preambles when reaching the maximum number of preambles allowed in a cycle. The UE shall then repeat the ramping procedure until the maximum number of preamble ramping cycles are reached. No ACK/NACK shall be sent by SS during this test.

The UE shall transmit 2 preambles cycles, consisting of 12 preambles in each preamble cycle.

The normative reference for this requirements is TS 25.133 [2] clauses 6.3.2 and A.6.2.2.3.

8.4.2.3.3 Test purpose

The purpose of this test is to verify that the behaviour of the random access procedure is according to the requirements.

8.4.2.3.4 Method of test

8.4.2.3.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.8. A spectrum analyzer is set to 0 span mode.

See TS 34.108 [3] for details regarding generic call setup procedure.

8.4.2.3.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2, and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no AICH.
- 2) Measure the number of the preamble part by using a spectrum analyzer.

8.4.2.3.5 Test requirements

The UE shall stop transmit preambles when reaching the maximum number of preambles allowed in a cycle. The UE shall then repeat the ramping procedure until the maximum number of preamble ramping cycles are reached. No ACK/NACK shall be sent by SS during this test.

The UE shall transmit 2 preambles cycles, consisting of 12 preambles in each preamble cycle.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.2.4 Correct behaviour when reaching maximum transmit power

8.4.2.4.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in clause 6 of TS 25.214 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.4.2 Minimum Requirements

The UE shall not exceed the maximum allowed UL TX power configured by the SS. No ACK/NACK shall be sent by SS during this test.

The absolute power of any preambles belonging to the first or second preamble cycle shall not exceed 0 dBm with more than specified in section 6.5 of TS 25.133.

The normative reference for this requirements is TS 25.133 [2] clauses 6.3.2 and A.6.2.2.4.

8.4.2.4.3 Test purpose

The purpose of this test is to verify that the PRACH power settings are within specified limits.

8.4.2.4.4 Method of test

8.4.2.4.4.1 Initial condition

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.1.

See TS 34.108 [3] for details regarding generic call setup procedure.

Table 8.4.2.1.6: UE parameters for correct behaviour when reaching maximum transmit power

Parameter	Unit	Value
Access Service Class		
(ASC#0)		
	01	1
- Persistence value		
Maximum number of preamble		2
ramping cycles (M _{max}).		
Maximum number of		12
preambles in one preamble		
ramping cycle		
(Preamble Retrans Max)		
The backoff time T _{B01}	ms	N/A
$N_{B01min}=N_{B01max}$	#TTI	10
Power step when no	dB	3
acquisition indicator is		
received		
(Power offset P0)		
Power offset between the last	dB	0
transmitted preamble and the		
control part of the message		
(Power offset P p-m)		
Maximum allowed UL TX	dBm	0
power		

8.4.2.4.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no AICH.
- 2) Set the TX output level of the SS to obtain \hat{I}_{or} at the UE antenna connector. \hat{I}_{or} shall be according to table 8.4.2.1.4.
- 3) Measure the all PRACH preamble output power of the UE according to annex B.

8.4.2.4.5 Test requirements

The UE shall not exceed the maximum allowed UL TX power configured by the SS. No ACK/NACK shall be sent by SS during this test.

The absolute power of any preambles belonging to the first or second preamble cycle shall not exceed 0 dBm with more than the tolerance specified in section 6.5 of TS 25.133.

Table 8.4.2.4:
Test requirement for maximum preamble power

	Maximum p	reamble power
Test requirement	0dBm	+2.7, -3 dB

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.3 Transport format combination selection in UE

8.4.3.1 Interactive or Background, PS, UL: 64 kbps

8.4.3.1.1 Definition and applicability

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format set, according to the functionality specified in section 11.4 in TS25.321 [13]. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321 [13].

The requirements and this test apply to all types of UTRA for the FDD UE for Release 99, Release 4, Release 5 and later releases.

8.4.3.1.2 Minimum requirements

The UE shall continuously evaluate based on the *Elimination, Recovery* and *Blocking* criteria defined below, how TFCs on an uplink DPDCH can be used for the purpose of TFC selection. The evaluation shall be performed for every TFC in the TFCS using the estimated UE transmit power of a given TFC. The UE transmit power estimation for a given TFC shall be made using the UE transmitted power measured over the measurement period, defined in 9.1.6.1 of TS 25.133 [2] as one slot, and the gain factors of the corresponding TFC.

The UE shall consider the *Elimination* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC is greater than the Maximum UE transmitter power for at least X out of the last Y successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bit rate for each logical channel to upper layers within T_{notify} from the moment the *Elimination* criterion was detected.

The UE shall consider the *Recovery* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for the last Z successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Recovery* criterion was detected.

The evaluation of the *Elimination* criterion and the *Recovery* criterion shall be performed at least once per radio frame.

The definitions of the parameters X,Y and Z which shall be used when evaluating the *Elimination* and the *Recovery* criteria when no compressed mode patterns are activated are given in Table 8.4.3.1.1.

Table 8.4.3.1.1: X, Y, Z parameters for TFC selection

Х	Υ	Z
15	30	30

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of:

$$(T_{notify} + T_{modify} + T_{L1 proc})$$

where:

T_{notify} equals 15 ms

 T_{modify} equals $MAX(T_{adapt_max}, T_{TTI})$

 $T_{L1 proc}$ equals 15 ms

 T_{adapt_max} equals MAX(T_{adapt_1} , T_{adapt_2} , ..., T_{adapt_N})

N equals the number of logical channels that need to change rate

For Release 99 and Release 4, T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. Table 8.4.3.1.2 defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms.

Table 8.4.3.1.2: T_{adapt}

Service	T _{adapt} [ms]
UMTS AMR	40
UMTS AMR2	60

For Release 5 and later releases T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms. For services where either UMTS_AMR2 or UMTS_AMR_WB is used, Tadapt shall be considered to be equal to the time required to switch from the current codec mode to a new supported codec mode. In that case Tadapt equals 20 ms + 40 ms per codec mode switch. E.g. Tadapt equals 60ms if one codec mode switch is necessary and Tadapt equals 140ms if 3 codec mode switches are necessary.

T_{TTI} equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

Maximum UE transmitter power = MIN(Maximum allowed UL TX Power, UE maximum transmit power)

where

Maximum allowed UL TX Power is set by SS and defined in TS 25.331 [8], and

UE maximum transmit power is defined by the UE power class, and specified in TS 25.101 [1].

The normative reference for these requirements is TS 25.133 [2] clauses 6.4.2 and A.6.4.1.

8.4.3.1.3 Test purpose

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. The test will verify the general requirement on TFC selection in section 8.4.3.1.2 for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108 [3].

8.4.3.1.4 Method of test

8.4.3.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.4.3.1.3, 8.4.3.1.4 and Table 8.4.3.1.5 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

Details on the UL reference RAB in table 8.4.3.1.3 and 8.4.3.1.4 can be found in TS 34.108 [3] section "Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH".

Table 8.4.3.1.3: UL reference RAB, Interactive or Background

	TFI	64 kbps RAB (20ms TTI)	DCCH 3.4kbps (40ms TTI)
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
1	TF4, bits	4x336	N/A

Table 8.4.3.1.4: UL TFCI

TFCI	(64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF0, TF1)
UL_TFC2	(TF1, TF0)
UL_TFC3	(TF1, TF1)
UL_TFC4	(TF2, TF0)
UL_TFC5	(TF2, TF1)
UL_TFC6	(TF3, TF0)
UL_TFC7	(TF3, TF1)
UL_TFC8	(TF4, TF0)
UL_TFC9	(TF4, TF1)

Table 8.4.3.1.5: General test parameters

Parameter	Unit	Value	Comment
TFCS size		10	
TFCS		UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC8, UL_TFC9	
Power Control		On	
Active cell		Cell 1	
Maximum allowed UL TX power	dBm	21	
T1	S	30	
T2	S	10	
Propagation condition		AWGN	

The radio conditions in the test shall be sufficient, so that decoding of the TPC commands can be made without errors.

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL_TFC8 or UL_TFC9) during the entire test and it shall be ensured that the UE is using UL_TFC8 or UL_TFC9 at the end of T1.

8.4.3.1.4.2 Procedure

- 1) The UE is switched on.
- 2) The SS shall signal to the UE the allowed TFCS according to table 8.4.3.1.5.
- 3) For T1=30 secs the SS shall command the UE output power to be between 14 and 15 dB below the UE Maximum allowed UL Tx power (table 8.4.3.1.5).
- 4) The SS shall start sending continuously TPC_cmd=1 to the UE for T2=10 secs (see NOTE).
- 5) The time from the beginning of T2 until the UE blocks (stops using) UL_TFC8 and UL_TFC9 shall be measured by the SS. The UE shall stop using UL_TFC8 and UL_TFC9 within 140 ms from beginning of time period T2. A success is counted, if the UE stops within 140 ms. An error is counted otherwise.
- 6) Repeat steps 3-5 until the confidence level according to annex F.6.2 is achieved.

NOTE: This will emulate that UL_TFC8 to UL_TFC9 can not be supported because the UE reaches the maximum UL Tx power and still SS is sending power-up commands.

8.4.3.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.5 Timing and Signalling Characteristics

8.5.1 UE Transmit Timing

8.5.1.1 Definition and applicability

The UE transmit timing is defined as the timing of the uplink DPCCH/DPDCH frame relative to the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame from the reference cell. The reference point is the antenna connector of the UE.

The requirements and this test apply to all types of UTRA of the FDD UE.

8.5.1.2 Minimum requirements

The UE transmission timing error shall be less than or equal to ± 1.5 chips. The reference point for the UE initial transmit timing control requirement shall be the time when the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame is received from the reference cell plus T_0 chips. T_0 is defined in TS25.211 [19].

When the UE is not in soft handover, the reference cell shall be the one the UE has in the active set. The cell, which is selected as a reference cell, shall remain as a reference cell even if other cells are added to the active set. In case that the reference cell is removed from the active set the UE shall start adjusting its transmit timing no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account.

The UE shall be capable of changing the transmission timing according the received downlink DPCCH/DPDCH frame. The maximum amount of the timing change in one adjustment shall be ¼ chip.

The minimum adjustment rate shall be 233ns per second. The maximum adjustment rate shall be $\frac{1}{4}$ chip per 200 ms. In particular, within any given 800*d ms period, the UE transmit timing shall not change in excess of $\pm d$ chip from the timing at the beginning of this 800*d ms period, where $0 \le d \le 1/4$.

The normative reference for this requirement is TS 25.133 [2] clause 7.1.2.

8.5.1.3 Test purpose

The purpose of this test is to verify that the UE initial transmit timing accuracy, maximum amount of timing change in one adjustment, minimum and maximum adjustment rate are within the limits specified in 8.5.1.2.

8.5.1.4 Method of test

8.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

For this test, two cells on the same frequency are used.

- 1) Connect the test system to the UE antenna connector as shown in figure A.1.
- 2) A call is set up with Cell 1 according to the Generic call setup procedure. The test parameters are set up according to table 8.5.1.1.

Parameter	Unit	Level
DPCH_Ec/ lor, Cell 1 and Cell 2	dB	-17
CPICH_Ec/ lor, Cell 1 and Cell 2	dB	-10
PCCPH_Ec/ lor, Cell 1 and Cell 2	dB	-12
SCH_Ec/ lor, Cell 1 and Cell 2	dB	-12
PICH_Ec/ lor, Cell 1 and Cell 2	dB	-15
OCNS_Ec/ lor, Cell 1 and Cell 2	dB	-1.05
Î _{or,} Cell 1	dBm/3.84 MHz	-96
Î _{or,} Cell 2	dBm/3.84 MHz	-99
Information data rate	kbps	12.2
Relative delay of path received from cell	μs	+/-2
2 with respect to cell 1	·	
Propagation condition	А	WGN

Table 8.5.1.1: Test parameters for UE Transmit Timing requirements

8.5.1.4.2 Procedure

- a) After a connection is set up with cell 1, the test system shall verify that the UE transmit timing offset is within T_0 \pm 1.5 chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- b) Test system introduces cell 2 into the test system at delay +2 μs from cell 1. UE transmits Measurement report message, and Test system transmits ACTIVESET UPDATE message (Radio link addition information).
- c) Test system transmits Measurement Control message, and it verifies that cell 2 is added to the active set.
- d) Test system shall verify that the UE transmit timing offset is still within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- e) Test system switches Tx timing of cell 2 to a delay of -2 μs with respect to cell 1.
- f) Test system verifies cell 2 remains in the active set.
- g) Test system shall verify that the UE transmit timing offset is still within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- h) Test system stops sending cell 1 signals.
- i) Void
- j) UE transmitsMeasurement report message, and Test system transmits ACTIVESET UPDATE message (Radio link removal information). Test system verifies that UE transmit timing adjustment starts no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account. The adjustment step size and the adjustment rate shall be according to the requirements in clause 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
- k) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
- 1) Test system starts sending cell 1 signal again with its original timing. UE transmits Measurement report message, and Test system transmits ACTIVESET UPDATE message (Radio link addition information).
- m) Test system transmits Measurement Control message, and it verifies that cell 1 is added to the active set.
- n) Test system verifies that the UE transmit timing is still within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
- o) Test system stops sending cell 2 signals.
- p) Void.

- q) Test system verifies that UE transmit timing adjustment starts no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account. The adjustment step size and the adjustment rate shall be according to the requirements in clause 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- r) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

MEASUREMENT CONTROL message

Information Element	Value/Remark
Message Type	v aiuc/i\ciliai k
iviessage Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	. ~
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	0
-Filter coefficient	FDD
-CHOICE mode	CPICH RSCP
-Measurement quantity	
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	
-Cell synchronisation information reporting	
indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	FALSE
-CPICH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present
21 311 compressed mode status into	1101 1 1000111

ACTIVESET UPDATE message (Radio link addition information)

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
- RRC transaction identifier	0
- Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this message and
	writes to this IE. The first/ leftmost bit of the bit string
	contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal
	counter.
- Activation time	"now".
- New U-RNTI	Not Present
CN information elements	
- CN Information info	Not Present
Phy CH information elements	
Uplink radio resources	
- Maximum allowed UL TX power	33 dBm
Downlink radio resources	
- Radio link addition information	1
- Radio link addition information	
- Primary CPICH info	Adding Cell
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
 Primary CPICH usage for channel estimation 	Primary CPICH may be used
- DPCH frame offset	This should be refriected by the IE" Cell synchronisation
	information" in received MEASUREMENT REPORT
	message
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	Not Present
- Spreading factor	128
- Code number	96
- Scrambling code change	No code change
- TPC combination index	0
- SSDT Cell Identity	Not Present
- Closed loop timing adjustment mode	Not Present
- TFCI combining indicator	FALSE
- SCCPCH Information for FACH	Not Present
- Radio link removal information	Not Present
- TX Diversity Mode	Not Present
- SSDT information	Not Present

ACTIVESET UPDATE message (Radio link removal information)

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
- RRC transaction identifier	0
- Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this message and
	writes to this IE. The first/ leftmost bit of the bit string
	contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal
	counter.
- Activation time	"now".
- New U-RNTI	Not Present
CN information elements	
- CN Information info	Not Present
Phy CH information elements	
Uplink radio resources	
- Maximum allowed UL TX power	33 dBm
Downlink radio resources	
- Radio link addition information	Not Present
- Radio link removal information	1
- Primary CPICH info	Removing Cell
- TX Diversity Mode	Not Present
- SSDT information	Not Present

8.5.1.5 Test requirements

- 1) In step a), d) and g), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- 2) In step j), the adjustment step size and the adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
- 3) In step k) and n), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
- 4) In step q), the adjustment step size and the adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- 5) In step r), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- NOTE 1: The above Test Requirement differs from the Test Requirement of TS 25.133 [2] clause A7.1.2, from which the requirements for the test system are subtracted to give the above Test Requirement.
- NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6 UE Measurements Procedures

8.6.1 FDD intra frequency measurements

8.6.1.1 Event triggered reporting in AWGN propagation conditions

8.6.1.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.1.1.2 Minimum requirements

The UE shall be able to identify and decode the SFN of a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify FDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io \geq -20 dB, SCH_Ec/Io \geq -20 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

In the CELL_DCH state the measurement period for intra frequency measurements is 200 ms. When no transmission gap pattern sequence is activated, the UE shall be capable of performing CPICH measurements for 8 identified intra-frequency cells of the monitored set and/or the active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When one or more transmission gap pattern sequences are activated, the UE shall be capable of performing CPICH measurements for at least $Y_{\text{measurement intra}}$ cells , where $Y_{\text{measurement intra}}$ is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the sub-clause 9.1.1 and 9.1.2 of TS 25.133 [2]. If the UE has identified more than $Y_{\text{measurement intra}}$ cells, the UE shall perform measurements of all identified cells but the reporting rate of CPICH measurements of cells from UE physical layer to higher layers may be decreased.

$$\mathbf{Y}_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement FDD}} \cdot \frac{\mathbf{T}_{\text{Intra}}}{\mathbf{T}_{\text{Measurement Period, Intra}}} \right\} \text{ cells}$$

where

 $X_{basic\ measurement\ FDD} = 8$ (cells)

 $T_{\text{Measurement Period Intra}} = 200 \text{ ms.}$ The measurement period for Intra frequency CPICH measurements.

 T_{Intra} : This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

 $T_{basic_identify_FDD, intra} = 800$ ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined T _{identify intra} defined above.

If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement period, becomes undetectable for a period < 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $T_{Measurement_Period\ Intra}$ ms provided the timing to that cell has not

changed more than +/-32 chips, the UE CPICH measurement capabilities defined above are valid and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{identify_intra}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement_Period\ Intra}$ when the L3 filter has not been used and the UE CPICH measurement capabilities defined above are valid.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.1.

8.6.1.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.1.4 Method of test

8.6.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.6.1.1.1 to 8.6.1.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

Table 8.6.1.1.1: General test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference	As specified in C.3.1 and C.2.1
		Measurement Channel 12.2 kbps	
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation		0	Applicable for event 1A
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24	
T1	S	5	
T2	S	5	
T3	S	5	

Table 8.6.1.1.2: Cell specific test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Cell 1			Cell 2			
		T1	T1 T2 T3		T1	T2	T3	
CPICH_Ec/lor	dB		-10			-10		
PCCPCH_Ec/lor	dB		-12			-12		
SCH_Ec/lor	dB		-12			-12		
PICH_Ec/lor	dB		-15			-15		
DPCH_Ec/lor	dB		-17		N/A			
OCNS_Ec/lor	dB		-1.049			-0.941		
\hat{I}_{or}/I_{oc}	dB	0	6.97	0	-Infinity	5.97	-Infinity	
$\hat{I}_{or(Note1)}$	dBm	-70	-63.03	-70	-Infinity	-64.03	-Infinity	
I_{oc}	dBm/3.84 MHz	-70				·		
CPICH_Ec/lo	dB	-13	-13	-13	-Infinity	-14	-Infinity	
Propagation Condition		AWGN						

Note 1: The nominal lor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.6.1.1.4.2 Procedure

- 1. The RF parameters are set up according to T1 in table 8.6.1.1.3.
- 2. The UE is switched on.
- 3. A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4. SS shall transmit a MEASUREMENT CONTROL message.
- 5. After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.1.3.
- 6. UE shall transmit a MEASUREMENT REPORT message triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7. After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3 in table 8.6.1.1.3.
- 8. UE shall transmit a MEASUREMENT REPORT message triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9. After 5 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 10. Repeat steps 1-9 according to Annex F.6.2 Table 6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	value/Remark
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
-message authentication code	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
- A TO MODDAGO CO QUENTO MANDO.	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	l N / B
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD CPICH Ec/N0
-Measurement quantity	GEIGH_EG/INU
-Intra-frequency reporting quantity (10.3.7.41) -Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
-Intra-frequency measurement reporting criteria (10.3.7.39)	criteria
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant -Cells forbidden to affect Reporting Range	3 dB Not Present
-Vens forbidden to affect Reporting Range	1.0
-vv -Hysteresis	0 dB
-i iyətdi dələ	U UD

	Information Element/Group name	Value/Remark			
-Thresho	ld used frequency	Not Present			
	ng deactivation threshold	Not Present			
-Replace	ment activation threshold	Not Present			
-Time to t	trigger	0 ms			
-Amount	of reporting	Not Present			
-Reportin	ng interval	0 ms (note 2)			
-Reportin	ng cell status	Not Present			
Physical ch	nannel information elements				
-DPCH com	pressed mode status info (10.3.6.34)	Not Present			
Note 1: TI	he SFN-CFN observed time difference is calculated the	from the OFF and Tm parameters contained			
in	the IE "Cell synchronisation information ", TS 25.33	1, clause 10.3.7.6. According to TS 25.331,			
8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information					
reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in					
M	MEASUREMENT CONTROL.				
Note 2: R	Reporting interval = 0 ms means no periodical reporting	ng			

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

Table 8.6.1.1.3: Test requirements for Event triggered reporting in AWGN propagation conditions

Parameter	Unit		Cell 1			Cell 2	
		T1	T2	T3	T1	T2	T3
CPICH_Ec/lor	dB		-9.3			-9.3	
PCCPCH_Ec/lor	dB		-11.3			-11.3	
SCH_Ec/lor	dB		-11.3			-11.3	
PICH_Ec/lor	dB		-14.3			-14.3	
DPCH_Ec/lor	dB		-16.3			N/A	
OCNS			-1.26		-1.13		
$\hat{I}_{or}/I_{oc\ (Note\ 1)}$	dB	0	7.0	0	-Infinity	6.0	-Infinity
\hat{I}_{or}	dBm	-70	-63.0	-70	-Infinity	-64.0	-Infinity
I_{oc}	dBm/3.84 MHz		-70				
CPICH_Ec/lo	dB	-12.3	-12.3	-12.3	-Infinity	-13.3	-Infinity
(Note 1)							
Propagation		AWGN					
Condition							

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition

8.6.1.2.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay

excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.1.2.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.2.

8.6.1.2.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.2.4 Method of test

8.6.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.1.2.1.

Table 8.6.1.2.1: Cell specific initial test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Cell 1	Cell 2	Cell3		
		T0	T0	T0		
CPICH_Ec/lor	dB	-10	-10	-10		
PCCPCH_Ec/lor	dB	-12	-12	-12		
SCH_Ec/lor	dB	-12	-12	-12		
PICH_Ec/lor	dB	-15	-15	-15		
DPCH_Ec/lor	dB	-17	N/A	N/A		
OCNS_Ec/lor	dB	-1.049	-0.941	-0.941		
\hat{I}_{or}/I_{oc}	dB	0	-Inf	-Inf		
I_{oc}	dBm/ 3.84 MHz		-85			
CPICH_Ec/lo	dB	-13	-Inf	-Inf		
Propagation Condition		AWGN				

The test parameters are given in table 8.6.1.2.2 and 8.6.1.2.3. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A, 1C and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table 8.6.1.2.2: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Replacement activation threshold		0	Applicable for event 1C
Reporting		0	Applicable for event 1A
deactivation threshold			
Time to Trigger	ms	0	
Filter coefficient	1115	0	
Monitored cell list		32	
size			
T1	S	10	
T2	S	10	
T3	S	5	
T4	S	10	

Table 8.6.1.2.3: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit		Ce	II 1			Ce	II 2			Се	II3	
		T1	T2	Т3	T4	T1	T2	Т3	T4	T1	T2	Т3	T4
CPICH_Ec/lor	dB		-1	0			-1	0			-1	0	
PCCPCH_Ec/ lor	dB	-12			-12			-12					
SCH_Ec/lor	dB		-1	2			-1	2			-1	2	
PICH_Ec/lor	dB		-1	5		-15				-15			
DPCH_Ec/lor	dB	-17				N/A			N/A				
OCNS_Ec/lor	dB		-1.0	049			-0.941			-0.941			
\hat{I}_{or}/I_{oc}	dB	6.97	6.93	5.97	6.12	-Inf	9.43	6.97	7.62	5.97	6.93	-Inf	5.62
	dBm/												
I_{oc}	3.84						3-	35					
	MHz												
CPICH_Ec/lo	dB	-13	-16	-14	-15.5	-Inf	-13.5	-13	-14	-14	-16	-Inf	-16
Propagation Condition		AWGN											

8.6.1.2.4.2 Procedure

- 1) The RF parameters are set up according to T0.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) 5 seconds after step4 has completed, the SS shall switch the power settings for T0 to T1.
- 6) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T1 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.

- 7) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 8) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 9) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 10) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 11)UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 12) After 10 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 13)UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 14)UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 15) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.
- 16) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 17)UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 18)UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 19) After 10 seconds from the beginning of T4, the UE is switched off.
- 20) Repeat steps 1-19 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	value/Remark
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
- moodage admonitoration code	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AMBI O
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type -Intra-frequency measurement (10.3.7.36)	Intra-frequency measurement
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	Not i leacht
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	_
-Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	TDUE (Note 4)
-Cell synchronisation information reporting indicator	TRUE (Note 1) TRUE
-Cell Identity reporting indicator -CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	3
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant -Cells forbidden to affect Reporting Range	3 dB
-Veils forbidden to affect Reporting Range	Not Present
-vv -Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB

Information Element/Group name	Value/Remark
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1C
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	Not present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not present
-Replacement activation threshold	0
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.

NOTE 2: Reporting interval = 0 ms means no periodical reporting.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition

8.6.1.3.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.1.3.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.3.

8.6.1.3.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.3.4 Method of test

8.6.1.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.6.1.3.1 and 8.6.1.3.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table 8.6.1.3.1: General test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		32	
T1	S	10	
T2	S	10	
T3	S	10	
T4	S	10	

Table 8.6.1.3.2: Cell specific test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2			Cell3				
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/lor	dB			10			-1	0			-10		
PCCPCH_Ec/ lor	dB	-12		-12			-12						
SCH_Ec/lor	dB			12			-1	12		-12			
PICH_Ec/lor	dB	-15				-15			-15				
DPCH_Ec/lor	dB	-17				N/A			N/A				
OCNS_Ec/lor	dB		-1.	049			-0.941			-0.941			
\hat{I}_{or}/I_{oc}	dB	14.5 5	28.5 1	14.4 5	28.5 1	-Inf	27.5 1	13.9 5	21.5 1	8.05	21.5 1	13.9 5	27.5 1
I_{oc}	dBm/ 3.84 MHz	-85											
CPICH_Ec/lo	dB	-11	-13	-14.5	-13	-Inf	-14.0	-15	-20	-17.5	-20	-15	-14
Propagation Condition		AWGN											

8.6.1.3.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10 seconds from the beginning T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 10 seconds from the beginning T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 9) After 10 seconds from the beginning T3, the SS shall switch the power settings from T3 to T4.
- 10) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1B. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 11) After 10 seconds, the UE is switched off.
- 12) Repeat steps 1-11 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	value/Remark
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
-message authentication code	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
- A TO MODDAGO CO QUENTO MANDO.	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	l N / B
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD CPICH Ec/N0
-Measurement quantity	GEIGH_EG/INU
-Intra-frequency reporting quantity (10.3.7.41) -Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
-Intra-frequency measurement reporting criteria (10.3.7.39)	criteria
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant -Cells forbidden to affect Reporting Range	3 dB Not Present
-Vens forbidden to affect Reporting Range	1.0
-vv -Hysteresis	0 dB
-i iyətdi dələ	U UD

Information Element/Group name	Value/Remark
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.

NOTE 2: Reporting interval = 0 ms means no periodical reporting.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.3.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.1.4 Correct reporting of neighbours in fading propagation condition

8.6.1.4.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.1.4.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.4.

8.6.1.4.3 Test purpose

To verify that the UE meets the minimum requirements and also verify that the UE performs sufficient layer 1 filtering of the measurements. The test is performed in fading propagation conditions.

8.6.1.4.4 Method of test

8.6.1.4.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.6.1.4.1 and 8.6.1.4.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and Event 1B shall be used. The test consists of two successive time periods, each with time duration of T1 and T2 respectively.

The TTI of the uplink DCCH shall be 20ms.

Table 8.6.1.4.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	0	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	120	
Filter coefficient		0	
Monitored cell list size		24	Signalled before time T1.
T1	S	200	
T2	S	201	

Table 8.6.1.4.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Ce	II 2		
		T1	T2	T1	T2		
CPICH_Ec/lor	dB	-10		-10			
PCCPCH_Ec/lor	dB	-12		-12			
SCH_Ec/lor	dB	-12		-12			
PICH_Ec/lor	dB	-15		-15			
DPCH_Ec/lor	dB	-17	-17		N/A		
OCNS_Ec/lor	dB	-1.049		-0.941			
\hat{I}_{or}/I_{oc}	dB	7.29	3.29	3.29	7.29		
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/lo	dB	-12	-16	-16	-12		
Propagation Condition	Case 5 as specified in table D.2.2.1						

8.6.1.4.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up in AWGN conditions, according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) 5 seconds after step4 has completed, the fading simulator is switched on, configured with the settings described in the tables above at the beginning of T1.
- 6) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1A.
- 7) SS shall count the reports. The number of received event 1A reports shall be less than 60. If the SS fails to receive less than 60 event 1A reports, then then a failure is recorded. If the SS receives number of event 1A reports within the required limit, the number of successfull tests is increased by one.

- 8) After 200 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 9) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1B.
- 10) During the first 1s of time period T2 no event reports shall be counted.
- 11) After the first 1s SS shall start counting the reports. The number of received event 1B reports shall be less than 60. If the SS receives number of event 1B reports within the required limit, the number of successfull tests is increased by one.
- 12) After 201 seconds from the beginning of T2, the UE is switched off.
- 13) Repeat steps 1-12 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	value/Remark
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
- moodage admonitoration code	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AMBLO
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type -Intra-frequency measurement (10.3.7.36)	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	Not i leacht
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	_
-Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	TRUE (N. 4. 4)
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator -CHOICE mode	TRUE FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant -Cells forbidden to affect Reporting Range	0 dB
-Veils forbidden to affect Reporting Range	Not Present
-vv -Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	120 ms
-Amount of reporting	Not present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	0 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB

	Information Element/Group name	Value/Remark				
-Thres	hold used frequency	Not Present				
	rting deactivation threshold	Not Present				
-Repla	cement activation threshold	Not Present				
	to trigger	120 ms				
-Amou	int of reporting	Not Present				
-Repor	rting interval	0 ms (Note 2)				
	rting cell status	Not Present				
Physical	channel information elements					
-DPCH co	ompressed mode status info (10.3.6.34)	Not Present				
Note 1:	Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.					
Note 2:	Reporting interval = 0 ms means no periodical reporting	ng				

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.4.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check every time first if the number of the event 1A events is within the required limit, and then, check if the number of the event 1B events is within the required limit.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.2 FDD inter frequency measurements

8.6.2.1 Correct reporting of neighbours in AWGN propagation condition

8.6.2.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit the measurement report over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.2.1.2 Minimum requirements

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify inter}} = Max \left\{ 5000, T_{\text{basic identify FDD,inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter}}} \cdot N_{\text{Freq}} \right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io \geq -20 dB, SCH_Ec/Io \geq -17 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

When transmission gaps are scheduled for FDD inter frequency measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.1 and 9.1.2 of 25.133 with measurement period given by

$$T_{\text{measurement inter}} = Max \left\{ T_{\text{Measurement_Period Inter}}, T_{\text{basic measurement FDD inter}} \cdot \frac{T_{\text{Measurement_Period Inter}}}{T_{\text{Inter}}} \cdot N_{\textit{Freq}} \right\} ms$$

If the UE does not need compressed mode to perform inter-frequency measurements, the measurement period for inter-frequency measurements is 480 ms.

The UE shall be capable of performing CPICH measurements for $X_{basic\ measurement\ FDD\ inter}$ inter-frequency cells per FDD frequency of the monitored set or the virtual active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{Measurement_Inter}$.

 $X_{basic\;measurement\;FDDinter} = 6$

 $T_{Measurement_Period\ Inter} = 480\ ms.$ The period used for calculating the measurement period $T_{measurement_inter}$ for interfrequency CPICH measurements.

 $T_{Inter:}$ This is the minimum time that is available for inter frequency measurements, during the period $T_{Measurement_Period\ inter}$ with an arbitrarily chosen timing. The minimum time per transmission gap is calculated by using the actual idle length within the transmission gap as given in the table 11 of Annex B in TS 25.212 and by assuming 2*0.5 ms for implementation margin and after that taking only full slots into account in the calculation.

 $T_{basic_identify_FDD,inter} = 800$ ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

 $T_{basic_measurement_FDD\ inter} = 50$ ms. This is the time period used in the equation for defining the measurement period for inter frequency CPICH measurements.

N_{Freq}: Number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than T $_{identify\ inter}$ defined in Clause 8.1.2.3.1 of 25.133 When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{identify_inter}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement_Period\ Inter}$ provided the timing to that cell has not changed more than +/-32 chips while transmission gap has not been available and the L3 filter has not been used.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.1.

8.6.2.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.2.1.4 Method of test

8.6.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.2.1.1

Table 8.6.2.1.1: Cell specific initial test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3			
		T0	T0	T0			
CPICH_Ec/lor	dB	-10	-10	-10			
PCCPCH_Ec/lor	dB	-12	-12	-12			
SCH_Ec/lor	dB	-12	-12	-12			
PICH_Ec/lor	dB	-15	-15	-15			
DPCH_Ec/lor	dB	-17	N/A	N/A			
OCNS_Ec/lor	dB	-1.049	-0.941	-0.941			
\hat{I}_{or}/I_{oc}	dB	0	-Inf	-Inf			
I_{oc}	dBm/3 .84 MHz		-70				
CPICH_Ec/lo	dB	-13	-Inf	-Inf			
Propagation Condition		AWGN					

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables 8.6.2.1.2 and 8.6.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Table 8.6.2.1.2: General test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Compressed mode		C.5.2 set 1	As specified in C.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	Measurement control information is sent before the compressed mode pattern starts.
T1	S	10	
T2	S	5	

Table 8.6.2.1.3: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Се	II 1	Cel	l 2	Ce	II 3
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Char	Channel 1 Channel 1		nel 1	Channel 2	
CPICH_Ec/lor	dB	-10		-10		-10	
PCCPCH_Ec/lor	dB	-12		-12		-12	
SCH_Ec/lor	dB	-12		-12		-12	
PICH_Ec/lor	dB	-15		-15		-15	
DPCH_Ec/lor	dB	-17		N/A		N/A	
OCNS_Ec/lor	dB	-1.049		-0.941		-0.941	
\hat{I}_{or}/I_{oc}	dB	0	5.42	-Infinity	3.92	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	dB	-13	-13	-Infinity	-14.5	-14	-14
Propagation Condition	AWGN						

8.6.2.1.4.2 Procedure

- 1) The RF parameters are set up according to T0.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message (inter frequency).
- 5) SS shall transmit a MEASUREMENT CONTROL message (intra frequency).
- 6) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 7) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 8) 5 seconds after step7 has completed, the SS shall switch the power settings from T0 to T1.
- 9) UE shall transmit a MEASUREMENT REPORT message (inter frequency) triggered by event 2C. The measurement reporting delay from the beginning of T1 shall be less than 9.08 seconds. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 10) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 11) UE shall transmit a MEASUREMENT REPORT message (intra frequency) triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 1040 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 12) After 5 seconds from the beginning of T2, the UE is switched off.
- 13) Repeat steps 1-12 until the confidence level according to annex F.6.2 is achieved.
- NOTE: The measurement reporting delay is 956.2 ms plus 80 ms delay uncertainty (twice the TTI). This gives a total of 1036.2 ms and rounded off to 1040 ms.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement:

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info -Activation time	Not Present Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	Hotticon
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
Downlink radio resources	500
-CHOICE mode	FDD Not Brown
-Downlink PDSCH information -Downlink information common for all radio links	Not Present
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	100
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 - TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	500
-TGMP	FDD measurement
-TGPRC -TGSN	Not present 4
-TG5N -TGL1	7
-TGL1	Not Present
-TGD	UNDEFINED
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	B
-DeltaSIR1	3.0
-DeltaSIRafter1 -DeltaSIR2	3.0 Not Present
-DeltaSIR2 -DeltaSIRafter2	Not Present Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present

-Downlink information per radio link list - Downlink information for each radio link FDD -Choice mode -Primary CPICH info -Primary scrambling code -PDSCH with SHO DCH Info 100 Not Present -PDSCH code mapping Not Present -Downlink DPCH info for each RL -CHOICE mode FDD -Primary CPICH usage for channel estimation Primary CPICH may be used -DPCH frame offset Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400 -Secondary CPICH info Not Present -DL channelisation code -Secondary scrambling code Not Present -Spreading factor 128 -Code number 96 -Scrambling code change No code change -TPC combination index -SSDT Cell Identity Not Present -Closed loop timing adjustment mode Not Present -SCCPCH Information for FACH Not Present

MEASUREMENT CONTROL message (inter frequency):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	- arabitantit
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
DDO I	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	internal counter.
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
- CHOICE Inter-frequency cell removal - New Inter frequency cells	NOT FIESEIIL
- Inter frequency cell id	0
- Frequency info	Ĭ
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not Present
- UARFCN downlink(Nd)	Same frequency as "Channel2" in Table
	8.6.2.1.3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator - CHOICE mode	TRUE FDD
- Primary CPICH info	FDD
- Primary scrambling code	Set to Primary scrambling code of Cell3
- Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell3
	described in Table 8.6.2.1.3
- Tx Diversity Indicator	FALSE
- Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-Intra-frequency reporting criteria	
-Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9)	
-Filter Coefficient (10.3.7.9) -CHOICE mode	0 FDD
-Measurement quantity	CPICH_Ec/N0
-Inter-frequency reporting criteria	3
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/N0
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	TPLIE (Note 1)
-Cell synchronisation information reporting indicator -Cell Identity reporting indicator	TRUE (Note 1) TRUE
-Cell identity reporting indicator -CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
	criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1

Information Element/Group name	Value/Remark
-Inter-frequency event identity	Event 2C
-Threshold used frequency	Not present
-W used frequency	Not present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status	
-CHOICE reported cell	Report cells within monitored set on non- used frequency
-Maximum number of reported cells	3
-Parameters required for each non-used frequency	
-Threshold non used frequency	-18 dB
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.

MEASUREMENT CONTROL message (intra frequency):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	Taido/Nomain
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
-message authentication code	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
-RRC message sequence number	internal counter.
Measurement Information elements	internal counter.
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	Modify
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	Not Descrit
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	4 dB
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
	1.0
-vv -Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Reporting deactivation threshold -Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	l N / B
-DPCH compressed mode status info (10.3.6.34)	Not Present

	Information Element/Group name	Value/Remark		
Note 1:	The SFN-CFN observed time difference is calculated	from the OFF and Tm parameters contained		
	in the IE "Cell synchronisation information ", TS 25.33	1, clause 10.3.7.6. According to TS 25.331,		
	8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information			
	reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in			
	MEASUREMENT CONTROL.			
Note 2:	Reporting interval = 0 ms means no periodical reportir	ng		

MEASUREMENT REPORT message for Inter frequency test cases

MEASUREMENT REPORT message for Intra frequency test cases

These messages are common for all inter and intra frequency test cases and are described in Annex I.

8.6.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.2.2 Correct reporting of neighbours in fading propagation condition

8.6.2.2.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit the measurement report over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH. The requirements and this test apply to the FDD UE.

The requirements and this test apply to all types of UTRA for the FDD UE for Release 5 and later releases.

8.6.2.2.2 Minimum requirements

The requirements are the same as in sub clause 8.6.2.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.2.

8.6.2.2.3 Test purpose

To verify that the UE meets the minimum requirements. The test is performed in fading propagation conditions.

8.6.2.2.4 Method of test

8.6.2.2.4.1 Initial conditions

Test environment: normal: see clauses G.2.1 and G.2.2.

Frequencies to be tested: mod range; see clause G.2.4.

The test parameters are given in table 8.6.2.2.4.1 and 8.6.2.2.4.2. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used. The test consists of two successive time periods, each with time duration of T1 and T2 respectively.

Table 8.6.2.2.4.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		A.22 set 2 (TGPL1=12)	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold (Ec/N0) for Event 2C	dB	-18	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 8 on frequency Channel 2	Measurement control information is sent before the compressed mode pattern starts.
Propagation Condition		Case 5	As specified in Annex B of TS 25.101.
Frequency offset	ppm	+/- 0.1	Frequency offset between Cell 1 and Cell 2.
T1	S	2	
T2	S	40	

Table 8.6.2.2.4.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Unit Cell 1 Cell 2		12
		T1	T2	T1	T2	
UTRA RF Channel Number		Chan	nel 1	Channel 2		
CPICH_Ec/lor	dB	-1	0	-10		
PCCPCH_Ec/lor	dB	-1	2	-12		
SCH_Ec/lor	dB	-1	-12		-12	
PICH_Ec/lor	dB	-15		-15		
DPCH_Ec/lor	dB	Note 1		N/A		
OCNS_Ec/lor	dB	Note 2 -0.941		941		
\hat{I}_{or}/I_{oc}	dB	C)	-Infinity	-1.8	
I_{oc}	dBm/3.84 MHz	-70 -70		0		
CPICH_Ec/Io	dB	-13 -Infinity		-14		
Propagation Condition	Case 5 as specified in Annex B of TS25.101					

Note 1: The DPCH level is controlled by the power control loop

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.

8.6.2.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up in AWGN conditions, according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 2 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C. The measurement reporting delay from the beginning of T2 shall be less than 36.4 s. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

- 7) After 40 seconds from the beginning of T2, the UE is switched off.
- 8) Repeat steps 1-7 according to Annex F.6.2 Table 6.2.8

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the
-RRC message sequence number	most significant bit of the MAC-I. SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
Measurement Identity	2
Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
- CHOICE Inter-frequency cell removal	Not Present
- New Inter frequency cells	
- Inter frequency cell id	0
- Frequency info	
- CHOICE mode	FDD
- UARFCN uplink(Nu)	Not Present
- UARFCN downlink(Nd)	Same frequency as "Channel2" in Table
	8.6.2.1.3
- Cell info	
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
 Primary scrambling code Primary CPICH Tx Power 	Set to Primary scrambling code of Cell3 Set to Primary CPICH Tx Power of Cell3 described in Table 8.6.2.1.3
- Tx Diversity Indicator	FALSE
- Cell Selection and Re-selection info	Set to Cell Selection and Re-selection info of Cell3
- Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-Intra-frequency reporting criteria	
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Inter-frequency reporting criteria	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/N0
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
•	criteria

Information Element/Group name	Value/Remark
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity	Event 2C
-Threshold used frequency	Not present
-W used frequency	Not present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	3
-Parameters required for each non-used frequency	
-Threshold non used frequency	-18 dB
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.

MEASUREMENT REPORT message for Inter frequency test cases

These messages are common for all inter frequency test cases and are described in Annex I.

8.6.2.2.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95% According to annex F.6.2. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.3 TDD measurements

8.6.3.1 Correct reporting of TDD neighbours in AWGN propagation condition

8.6.3.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the combined FDD and TDD UE.

8.6.3.1.2 Minimum requirement

When transmission gaps are scheduled for inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within

$$T_{\text{identify TDD inter}} = Max \left\{ 5000, N_{\text{basic identify TDD inter}} \cdot \frac{T_{\text{Measurement Period TDD inter}}}{N_{\text{TDD inter}}} \cdot N_{\text{Freq}} \right\} ms$$

If the UE does not need compressed mode to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

An inter-frequency TDD cell shall be considered detectable when P-CCPCH Ec/Io \geq -8 dB and SCH_Ec/Io \geq -13 dB. When L3 filtering is used an additional delay can be expected.

When transmission gaps are scheduled for inter frequency TDD measurements the UE physical layer shall be capable of reporting measurements to higher layers with a measurement period as given by

$$T_{\text{measurement TDD inter}} = Max \left\{ T_{\text{Measurement Period TDD inter}}, N_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{Measurement Period TDD inter}}}{N_{\text{TDD inter}}} \cdot N_{\textit{Freq}} \right\} ms$$

If the UE does not need compressed mode to perform inter-frequency TDD measurements, the measurement period for inter-frequency TDD measurements shall be 480 ms.

The UE shall be capable of performing P-CCPCH RSCP measurements for $X_{\text{basic measurement TDD inter}}$ inter-frequency TDD cells per TDD frequency of the monitored set and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{\text{measurement TDD inter}}$.

where

$$X_{basic measurement TDD inter} = 6 (cells)$$

 $T_{Measurement_Period\ TDD\ inter} = 480\ ms.$ The time period used for calculating the measurement period $T_{measurement_TDD\ inter}$ for inter frequency P-CCPCH RSCP measurements.

 $N_{TDD\ inter:}$ This is the smallest resulting integer number of transmission gap patterns in a transmission gap pattern sequence assigned to UE by UTRAN for inter frequency TDD measurements during the time period $T_{Measurement_Period\ TDD\ inter}$ with an arbitrarily chosen timing.

 $N_{basic_identify_TDD\ inter}$ =80. This is the number of transmission gap patterns in a transmission gap pattern sequence for inter-frequency TDD measurements during the time period used in the inter frequency TDD equation where the maximum allowed time for the UE to identify a new inter frequency TDD cell is defined.

 $N_{basic_measurement_TDD\ inter} = 5$. This is the number of transmission gap patterns in a transmission gap pattern sequence for inter-frequency TDD measurements during the time period $T_{Measurement_Period\ TDD\ inter}$ with an arbitrarily chosen timing that is used in the inter-frequency TDD equation for defining where the measurement period for inter frequency P-CCPCH RSCP measurements is defined.

N_{Freq}: This is the number of TDD frequencies indicated in the inter frequency measurement control information.

The normative reference for this requirement is TS 25.133 [2] clauses 8.1.2.4 and A.8.3.1

8.6.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.6.3.1.4 Method of test

8.6.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.3.1.1, 8.6.3.1.2 and 8.6.3.1.3. The test consists of 2 successive time periods, with a time duration T1 and T2. Two cells shall be present in the test, cell 1 being the UTRA FDD serving cell and cell 2 being a UTRA TDD neighbour cell on the unused frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The TTI of the uplink DCCH shall be 20 ms.

Table 8.6.3.1.1: General test parameters for Correct reporting of TDD inter-frequency neighbours in **AWGN** propagation condition

Parai	Parameter Unit Value		Comment	
DCH pai	rameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 34.121 Annex C
Power	Control		On	
	lity value on CH	BLER	0.01	
Compres	sed mode		A.22 set 3	As specified in TS 34.121 Annex C
Initial	Active cell		Cell 1	FDD cell
conditions	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 1	FDD cell
(O	dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hyste	eresis	dB	0	Hysteresis parameter for event 2C
Time to	Trigger	ms	0	
	l non-used iency	dBm	-71	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		S	15	
T	2	S	10	

Table 8.6.3.1.2: Cell 1 specific parameters for Correct reporting of TDD inter-frequency neighbours in **AWGN** propagation condition

Parameter	Unit	Cell 1
		T1, T2
UTRA RF Channel Number		Channel 1
CPICH_Ec/lor	dB	-10
P-CCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DPCH_Ec/lor	dB	Note 1
OCNS_Ec/lor	dB	Note 2
\hat{I}_{or}/I_{oc}	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN
	val ia aantrallas	AWGN

The DPCH level is controlled by the power control loop Note 1:

Note 2: The power of the OCNS channel that is added shall make the total

power from the cell to be equal to I_{or}.

Table 8.6.3.1.3: Cell 2 specific parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition

Parameter	Unit	Cell 2			
DL timeslot number		0 8		3	
		T1	T2	T1	T2
UTRA RF Channel			Char	nel 2	
Number			Criai	11161 2	
P-CCPCH_Ec/lor	dB	-:	3	n.	a.
PICH_Ec/lor	dB	n.	a.	T	3
SCH_Ec/lor	dB	-9			
SCH_t _{offset}	dB	10			
OCNS_Ec/lor	dB	-3.12			
P-CCPCH RSCP	dBm	-75	-67	n.a.	n.a.
\hat{I}_{or}/I_{oc}	dB	-2	6	-2	6
I_{oc}	dBm/3,84 MHz	-70			
Propagation Condition		AWGN			
Note that the transmit energy per PN chip for the SCH is averaged over the 256				er the 256	

Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.

8.6.3.1.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message.
- 6) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message
- 7) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 2c for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 9.2 s. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 9) After 10 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 10) Repeat steps 1-9 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	Value/IVeillal K
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
Management Information algorithm	internal counter.
Measurement Information elements	4
-Measurement Identity -Measurement Command (10.3.7.46)	1 Modify
-Measurement Reporting Mode (10.3.7.49)	Widdity
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE inter-frequency cell removal	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36) -CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2 in Table
Oracle Gradients	8.6.2.4.1.2
-Cell info (10.3.7.2)	0.0.2
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	TDD
-CHOICE mode	TDD
-CHOICE Sync case -Timeslot	2 0
-cell parameters ID	Set to cell parameters ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2
	as described in Table 8.6.2.4.1.2
-Timesllot list	Not Present
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	later framework at 100 to 100
-CHOICE reporting critera	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9) -CHOICE mode	0 TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	I milary Cor Officor
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	Unteria
-Parameters required for each event	1
- salamotoro regamento con essari event	1 .

Information Element/Group name	Value/Remark
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting Cell Status (10.361)	
-CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency
-Maximum number of reported cells	3
-Parameters required for each non-used frequenc	
- Threshold non-used frequency	-71
- W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (Step 6)

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info -Activation time	Not Present Not Present
-Activation time	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	THOU TOOGIN
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
Downlink radio resources	500
-CHOICE mode	FDD Not Brown
-Downlink PDSCH information -Downlink information common for all radio links	Not Present
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	100
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 - TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	TDD measurement
-TGPRC	Not present
-TGSN -TGL1	10 10
-TGL1 -TGL2	Not Present
-TGD	0
-TGPL1	11
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	puncturing
-Downlink frame type	A
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present Not Present
-DeltaSIRafter2 -N Identify abort	Not Present Not Present
-N identify abort -T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present

-Downlink information per radio link list	
- Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as
	currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this message and
	writes to this IE. The first/ leftmost bit of the bit string
	contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE mode	TDD
-UARFCN(Nt)	Same frequency as channel 2
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

8.6.3.1.5 Test requirements

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 9.2 s from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

8.6.4 GSM measurements

8.6.4.1 Correct reporting of GSM neighbours in AWGN propagation condition

8.6.4.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit the measurement report over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH.

The requirements in this section apply only to UE supporting FDD and GSM for Release 99, Release 4, Release 5 and later releases.

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8.6.4.1.2 Minimum requirements

Measurements on GSM cells can be requested with BSIC verified or BSIC non-verified.

- 1) In CELL_DCH state when a transmission gap pattern sequence is provided by the UTRAN the UE shall continuously measure GSM cells and search for new GSM cells given in the monitored set.
- 2) If the UE does not need compressed mode to perform GSM measurements:
 - the UE shall measure all GSM cells present in the monitored set
 - the relevant requirements for GSM dedicated mode when a TCH channel is assigned in TS 45.008 shall apply.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.5 and A.8.4.1.

8.6.4.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.4.1.4 Method of test

8.6.4.1.4.1 Test 1 initial conditions

Test 1 with BSIC verification required case:

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.6.4.1, 8.6.4.2 and 8.6.4.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3B and 3C shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively.

Table 8.6.4.1: General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition, Test 1

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI			Only applicable for UE requiring compressed mode patterns
measurement		DL Compressed mode reference pattern 2 in Set 2	As specified in table A.22 TS 25.101 section A.5
- GSM Initial BSIC			
identification		Pattern 2	As specified in section 8.1.2.5.2.1 TS 25.133table 8.7.
Active cell		Cell 1	
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the compressed mode patterns starts.
N Identify abort		66	Taken from table 8.7.
T1	S	5	
T2	S	7	
T3	S	5	

Table 8.6.4.2: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 1)

Parameter	Unit	Cell 1
		T1, T2, T3
UTRA RF Channel		Channel 1
Number		
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DPCH_Ec/lor	dB	Note 1
OCNS_Ec/lor	dB	Note 2
\hat{I}_{or}/I_{oc}	dB	0
I_{oc}	dBm/ 3.84	-85
OC .	MHz	
CPICH_Ec/lo	dB	-13
Propagation		AWGN
Condition		

Note 1: The DPCH level is controlled by the power control loop.

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to $I_{\rm or}$.

Table 8.6.4.3: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 2)

Parameter	Unit	Cell 2		
Farailletei	Offic	T1	T2	Т3
Absolute RF Channel Number		Д	RFCN 1	1
RXLEV	dBm	-Infinity	-75	-85

8.6.4.1.4.2 Test 1 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C. The measurement reporting delay from the beginning of T2 shall be less than 6.24s. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 7 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 3B. The measurement reporting delay from the beginning of T3 shall be less than 960 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 9) After 5 seconds from the beginning of T3, the UE is switched off.
- 10) Repeat steps 1-9 according to Annex F.6.2 Table F.6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Message Type (10.2.17) UE information elements RRC transaction identifier Integrity check info Sc calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE. from its internal counter. SS provides the value of this IE. from its internal counter. SS provides the value of this IE. from its internal counter. SS provides the value of this IE. from its internal counter. SS provides the value of this IE. from its internal counter. SS provides the value of this IE. from its internal counter. SS provides the value of this IE. from its internal counter. SS provides the value of this IE. from its internal counter. SS provides the value of this IE. from its internal counter. SS provides the value of this IE. from its internal counter. SS provides the value of this IE. from its internal counter. SS provides the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the MAC-I. SS provides the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the MAC-I. SS provides the value of this IE. from its internal counter. SS provides the value of the MAC-I. SS provides the value of MAC-I for this message and writes to this IE. from its internal counter. SS provides the value of MAC-I for this message and writes to this IE. from its internal counter. SS provides the value of the MAC-I. SS provides the value of the MAC-I. SS provides the value of the MAC-I. Store fires SS provides the value of the MAC-I. Store fires SS provides the value of the MAC-I. Store fires SS provides the value of the MAC-I. Store fires SS provides the value of the MAC-I. Store fires SS provides the value of the MAC-I. Store fires SS provides the value of the MAC-I. Store fires SS pro	Information Element/Group name	Value/Remark
UE information elements	•	Value/Remark
-RRC transaction identifier -Integrity check info -message authentication code -message authentication code -RRC message sequence number -Measurement Information elements -Measurement Information elements -Measurement Reporting Mode (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurement type -Inter-RAT measurement periodical (10.3.7.27) -Inter-RAT measurement objects list (10.3.7.23) -Inter-RAT measurement quantity (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.31) -Parameters required for each event -Inter-RAT measurement reporting criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold own system -W -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61)		
-Integrity check info -message authentication code -message authentication code -RRC message sequence number -Measurement Information elements -Measurement Reporting Mode (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Reporting Mode (10.3.7.1) -Reporting all reporting (10.3.7.27) -Inter-RAT measurement sits (10.3.7.27) -Inter-RAT measurement (10.3.7.27) -Inter-RAT measurement objects list (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -CHOICE system -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT reporting of the bit string internal counter. -Reporting cell status (10.3.7.24 -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61)		0
-message authentication code SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the bit string contains the most significant bit of the MAC-I.		
message and writes to this IE. The first/leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter. Measurement Information elements -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Reporting Mode (10.3.7.49) -Measurement Reporting Mode (10.3.7.49) -Measurement Reporting Mode (10.3.7.1) -CHOICE Measurement slist (10.3.7.27) -Inter-RAT measurement (10.3.7.27) -Inter-RAT measurement objects list (10.3.7.23) -Inter-RAT measurement quantity (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -CHOICE mode -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold other system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61)		SS calculates the value of MAC-I for this
Leftmost bit of the bit string contains the most significant bit of the MAC-I. So provides the value of this IE, from its internal counter. Measurement Information elements		
SS provides the value of this IE, from its internal counter. Measurement Information elements -Measurement Identity -Measurement Reporting Mode (10.3.7.46) -Measurement Report Iransfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1) -CHOICE Measurement type -Inter-RAT measurement (10.3.7.27) -Inter-RAT measurement objects list (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -CHOICE mode -Measurement quantity -CHOICE system -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -Reporting cell status (10.3.7.26) -Reporting cell status (10.3.7.26) -Reporting cell status (10.3.7.27) -Reporting cell status (10.3.7.29) -Reporting cell status (10.3.7.2		leftmost bit of the bit string contains the
Internal counter. Internal counter.		
Measurement Information elements -Measurement Identity	-RRC message sequence number	
-Measurement Reporting Mode (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1) -CHOICE Measurement (10.3.7.27) -Inter-RAT measurement (10.3.7.27) -Inter-RAT measurement objects list (10.3.7.23) -Inter-RAT measurement quantity (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -CHOICE mode -Measurement quantity -CHOICE system -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61)		internal counter.
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-Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1) -CHOICE Measurement type -Inter-RAT measurement (10.3.7.27) -Inter-RAT measurement objects list (10.3.7.23) -Inter-RAT measurement quantity (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -CHOICE mode -Measurement quantity -CHOICE system -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold other system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61)		
-Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1) -CHOICE Measurement (10.3.7.27) -Inter-RAT measurement objects list (10.3.7.23) -Inter-RAT measurement quantity (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -CHOICE mode -Measurement quantity -CHOICE system -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61)		Setup
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-CHOICE Measurement type -Inter-RAT measurement (10.3.7.27) -Inter-RAT measurement objects list (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -CHOICE mode -Measurement quantity -CHOICE system -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -W -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) Inter-RAT measurement reporting criteria -80 dBm -9 ms		
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-Inter-RAT measurement quantity (10.3.7.29) -Measurement quantity for UTRAN quality estimate (10.3.7.38) -Filter coefficient -CHOICE mode -Measurement quantity -CHOICE system -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61)		Not Present
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-CHOICE system -Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) GSM GSM Carrier RSSI 0 Required Not Present Inter-RAT measurement reporting criteria Loss 2 Event 3B Not Present Not Present Not Present -80 dBm 0 dB 0 ms	-CHOICE mode	FDD
-Measurement quantity -Filter coefficient -BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) GSM Carrier RSSI 0 Required Not Present Inter-RAT measurement reporting criteria Loter-RAT measurement reporting criteria Not Present Not Present Not Present -80 dBm 0 dB 0 ms		CPICH Ec/N0
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-BSIC verification required -Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) Required Not Present Inter-RAT measurement reporting criteria Loss Present Not Present Not Present Not Present -80 dBm 0 dB 0 ms		
-Inter-RAT reporting quantity (10.3.7.32) -Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) Not Present Inter-RAT measurement reporting criteria Levent 3B Not Present		1 -
-Reporting cell status (10.3.7.61) -CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) Not Present Inter-RAT measurement reporting criteria 2 Event 3B Not Present Not Present -80 dBm 0 dB 0 ms		Required
-CHOICE report criteria -Inter-RAT measurement reporting criteria (10.3.7.30) -Parameters required for each event -Inter-RAT event identity (10.3.7.24 -Threshold own system -W -Threshold other system -Hysteresis -Time to trigger -Reporting criteria (10.3.7.30) 2 Event 3B Not Present Not Present -80 dBm 0 dB 0 ms		Not Descript
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-Threshold own system -W -Threshold other system -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) Not Present Not Present OdB -80 dBm 0 dB 0 ms		
-W -Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) Not Present -80 dBm 0 dB 0 ms		
-Threshold other system -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -80 dBm 0 dB 0 ms		
-Hysteresis 0 dB -Time to trigger 0 ms -Reporting cell status (10.3.7.61)	-Threshold other system	-80 dBm
-Time to trigger -Reporting cell status (10.3.7.61)		0 dB
-Reporting cell status (10.3.7.61)		0 ms
OHOIOE		
	-CHOICE reported cell	Report cells within active set or within
virtual active set or of the other RAT		
-Maximum number of reported cells 2		
-Inter-RAT event identity (10.3.7.24) Event 3C		
-Threshold own system Not Present	<u> </u>	
-W Not Present -Threshold other system -80 dBm		
11 11 11 11 11 11 11 11 11 11 11 11 11		
-Hysteresis 0 dB -Time to trigger 0 ms		1
-Reporting cell status (10.3.7.61)		0 1113
-CHOICE reported cell Report cells within active set or within		Report cells within active set or within
virtual active set or of the other RAT	5.1010E 10p0100 00ll	
-Maximum number of reported cells 2	-Maximum number of reported cells	
Physical channel information elements	Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34) Active (for all three patterns specified in		Active (for all three patterns specified in
table 8.6.4.1)		table 8.6.4.1)

8.6.4.1.4.3 Test 2 initial conditions

Test 2 without BSIC verification required case:

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.6.4.4, 8.6.4.5 and 8.6.4.6 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3B and 3C shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively.

Table 8.6.4.4: General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition, Test 2

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI			Only applicable for UE requiring compressed mode patterns
measurement		DL Compressed mode reference pattern 2 in Set 2	As specified in table A.22 TS 25.101 section A.5
Active cell		Cell 1	
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		not required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	Ms	0	
Filter coefficient		0	
Monitored cell list size		24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the compressed mode patterns starts.
T1	S	5	
T2	S	2	
T3	S	5	

Table 8.6.4.5: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 1)

Parameter	Unit	Cell 1
		T1, T2, T3
UTRA RF Channel		Channel 1
Number		
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DPCH_Ec/lor	dB	Note 1
OCNS_Ec/lor	dB	Note 2
\hat{I}_{or}/I_{oc}	dB	0
I_{oc}	dBm/ 3.84	-85
oc	MHz	
CPICH_Ec/lo	dB	-13
Propagation		AWGN
Condition		

Note 1: The DPCH level is controlled by the power control loop.

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to $I_{\rm or}$.

Table 8.6.4.6: Cell specific test parameters for Correct reporting of GSM neighbours in AWGN propagation condition (cell 2)

Parameter	Unit		Cell 2	
Faranietei	Offic	T1	T2	T3
Absolute RF Channel Number		Д	RFCN 1	1
RXLEV	dBm	-Infinity	-75	-85

8.6.4.1.4.4 Test 2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C. The measurement reporting delay from the beginning of T2 shall be less than 960 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 7 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message triggered by event 3B. The measurement reporting delay from the beginning of T3 shall be less than 960 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 9) After 5 seconds from the beginning of T3, the UE is switched off.
- 10) Repeat steps 1-9 according to Annex F.6.2 Table F.6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	Value/Nemark
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
message authentioation code	message and writes to this IE. The first/
	leftmost bit of the bit string contains the
	most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
Titto message sequence number	internal counter.
Measurement Information elements	internal counter.
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	Cottap
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate	
(10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Not Required
-Inter-RAT reporting quantity (10.3.7.32)	'
-Reporting cell status (10.3.7.61)	Not Present
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	2
-Inter-RAT event identity (10.3.7.24)	Event 3B
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within
	virtual active set or of the other RAT
-Maximum number of reported cells	2
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within
	virtual active set or of the other RAT
-Maximum number of reported cells	2
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Active (for the pattern specified in table
	8.6.4.4)

MEASUREMENT REPORT message for inter – RAT test cases

These messages are common for all inter-RAT test cases and are described in Annex I.

8.6.4.1.5 Test requirements

8.6.4.1.5.1 TEST 1 With BSIC verification required

For the test to pass, the total number of successful tests shall be at least 90% of the cases, with a confidence level of 95%. The number of successfull tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.4.1.5.2 TEST 2 Without BSIC verification required

For the test to pass, the total number of successful tests shall be at least 90% of the cases, with a confidence level of 95%. The number of successfull tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7 Measurements Performance Requirements

Unless explicitly stated:

- Reported measurements shall be within defined range in 90 % of the cases.
- Measurement channel is 12.2 kbps as defined in Annex C, sub-clause C.3.1. This measurement channel is used both in active cell and cells to be measured.
- Physical channels used as defined in Annex E.
- Cell 1 is the active cell.
- Single task reporting.
- Power control is active.

8.7.1 CPICH RSCP

8.7.1.1 Intra frequency measurements accuracy

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the actual CPICH RSCP power from same cell.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

- CPICH_RSCP1|_{dBm} ≥ -114 dBm for Band I.
- CPICH_RSCP1|_{dBm} ≥ -112 dBm for Band II,
- CPICH_RSCP1|_{dBm} ≥ -111dBm for Band III.

$$-\frac{I_o}{(\hat{I}_{or})_{in,dR}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in,dR} \le 20dB$$

Table 8.7.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

		Accurac	cy [dB]		Conditions	
Parameter	Unit	Normal	Extreme	lo [dBm/3.84 MHz]		Hz]
		condition	condition	Band I	Band II	Band III
CPICH RSCP	dBm	±6	±9	-9470	-9270	-9170
CFICIT_ROCF	dBm	±8	±11	-7050	-7050	-7050

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.1 and A.9.1.1.2.

8.7.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits in clause 8.7.1.1.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.4 Method of test

8.7.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: CPICH RSCP Intra frequency parameters

Poro	meter	Unit	Tes	st 1	Tes	st 2	Tes	st 3
Falai	neter	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Char	nel number		Char	nel 1	Channel 1		Channel 1	
CPICH_Ec/lor		dB	-1	10	-1	0	-1	0
PCCPCH_Ec/Id	or	dB	-1	2	-1	2	-1	2
SCH_Ec/lor		dB	-1	2	-1	2	-1	2
PICH_Ec/lor		dB	-1	15	-1	5	-1	5
DPCH_Ec/lor		dB	-15	-	-15	-	-15	-
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
	Band I		-75.54		-59.98		-97.47	
loc	Band II	dBm/ 3.84 MHz					-95.47	
	Band III						-94.47	
Îor/loc		dB	4	0	9	0	0	-6.53
СРІСН	Band I						-107.47	-114.0
RSCP, Note 1	Band II	dBm	-81.5	-85.5	-60.98	-69.88	-105.47	-112.0
NOCE, NOTE I	Band III						-104.47	-111.0
	Band I						-6	94
Io, Note 1	Band II	dBm/3.84 MHz	-6	69	-50		-92	
	Band III						-91	
Propagation co	ndition	-	AW	'GN	AW	'GN	AW	GN

NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.1.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.4.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check CPICH_RSCP value in MEASUREMENT REPORT messages. CPICH RSCP power of Cell 1 r and Cell 2 eported by UE is compared to actual CPICH RSCP power for each MEASUREMENT REPORT message.
- 5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	5
-Measurement Command	SETUP
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	
-Cell synchronisation information reporting	FALSE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	Depart all paties and apply a all a within
-CHOICE reported cell	Report all active set cells + cells within
Maximum number of reported calls	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2 Not Present
-Measurement validity	
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	Not Proport
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.1.5 Test requirements

Table 8.7.1.1.1.3: CPICH_RSCP Intra frequency absolute accuracy, test requirement

		Accura	cy [dB]		Conditions		
Parameter	Unit	Normal	Extreme	lo [dBm/3.84 MHz]			
		condition	condition	Band I	Band II	Band III	
CPICH RSCP	dBm	±7.4	±10.4	-9470	-9270	-9170	
CPICH_RSCP	dBm	±9.4	±12.4	-7050	-7050	-7050	

Table 8.7.1.1.1.4: CPICH RSCP Intra frequency test parameters

Daras	meter	Unit	Tes	st 1	Tes	st 2	Tes	st 3
Farai	illetei	Offic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Char	nnel number		Char	nel 1	Char	nel 1	Chan	nel 1
CPICH_Ec/lor		dB	-1	10	-10		-1	0
PCCPCH_Ec/Id	or	dB	-1	2	-1	12	-1	2
SCH_Ec/lor		dB	-1	2	-1	12	-1	2
PICH_Ec/lor		dB	-1	15	-1	15	-1	5
DPCH_Ec/lor		dB	-15	-	-15	-	-15	-
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
	Band I		-74.54		-61,6		-96.47	
loc	Band II	dBm/ 3.84 MHz					-94.47	
	Band III					-0.94 1,6 0.3	-93	.47
Îor/loc		dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH	Band I						-106.17	-112.7
RSCP, Note 1	Band II	dBm	-80.2	-84.2	-62.3	-71.3	-104.17	-110.7
NOCE, NOTE I	Band III						-103.17	-109.7
	Band I						-92	2,8
Io, Note 1	Band II	dBm / 3.84 MHz	-67	7.8	-5 ⁻	1,4	-90	0.8
	Band III						-89	9.8
Propagation co	ndition		AW	'GN	AW	'GN	AW	GN

NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the absolut intra frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.1.1.5.

Table 8.7.1.1.1.5: CPICH_RSCP Intra frequency absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3 (Band I)	Test 3 (Band II)	Test 3 (Band III)
Normal Conditions					
Lowest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 1)	26	44	2	4	5
Highest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 1)	45	63	17	19	20
Lowest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 2)	22	35	0	0	0
Highest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 2)	41	54	10	12	13
Extreme Conditions					
Lowest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 1)	23	41	0	1	2
Highest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 1)	48	66	20	22	23
Lowest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 2)	19	32	0	0	0
Highest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 2)	44	57	13	15	16

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1.2 Relative accuracy requirement

8.7.1.1.2.1 Definition and applicability

The relative accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.1.2.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

- CPICH_RSCP1,2 $|_{dBm} \ge -114 dBm$ for Band I,.
- CPICH_RSCP1,2|_{dBm} ≥ -112 dBm for Band II,
- CPICH_RSCP1,2 $|_{dBm} \ge -111 dBm$ for Band III.

-
$$\left| CPICH _RSCP1 \right|_{in \ dBm} - CPICH _RSCP2 \right|_{in \ dBm} \le 20 dB$$

$$-\frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dB} \le 20dB$$

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

		Accura	cy [dB]		Conditions	
Parameter	Unit	Normal	Extreme	lo [dBm/3.84 MHz]		
		condition	condition	Band I	Band II	Band III
CPICH_RSCP	dBm	±3	±3	-9450	-9250	-9150

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.2 and A.9.1.1.2.

8.7.1.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.1.2.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.2.3.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 5) The result of step 3) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.2.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.2.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated.
- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.1.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.1.2.5 Test requirements

Table 8.7.1.1.2.2: CPICH_RSCP Intra frequency relative accuracy, test requirements

		Accura	cy [dB]	Conditions			
Parameter	Unit	nit Normal Extreme lo [dBn		dBm/3.84 MH	Hz]		
		condition	condition	Band I	Band II	Band III	
CPICH_RSCP	dBm	±3.8	±3.8	-9450	-9250	-9150	

Table 8.7.1.1.2.3: CPICH RSCP Intra frequency test parameters

Poro	meter	Unit	Tes	st 1	Tes	st 2	Tes	st 3
Fala	meter	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Char	nnel number		Char	nel 1	Char	nel 1	Chan	nel 1
CPICH_Ec/lor		dB	-1	0	-10		-1	0
PCCPCH_Ec/ld	or	dB	-1	2	-1	12	-1	2
SCH_Ec/lor		dB	-1	2	-1	12	-1	2
PICH_Ec/lor		dB	-1	15	-1	15	-1	5
DPCH_Ec/lor		dB	-15	-	-15	-	-15	-
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
	Band I		-74.54		-61,6		-96.47	
loc	Band II	dBm/ 3.84 MHz					-94	.47
	Band III						-93.47	
Îor/loc		dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH	Band I						-106.17	-112.7
RSCP, Note 1	Band II	dBm	-80.2	-84.2	-62.3	-71.3	-104.17	-110.7
NOCE, NOTE I	Band III						-103.17	-109.7
	Band I						-92	2,8
Io, Note 1	Band II	dBm/ 3.84 MHz	-67	7.8	-5	1,4	-90.8	
	Band III						-89	9.8
Propagation co	ndition	-	AW	'GN	AW	'GN	AW	GN
NOTE 1: CDIC	TH PSCP and In	levels have been calc	ulated from	other nar	amotore fo	r informati	on nurnose	se Thoy

NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the relative intra frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.1.2.4.

Table 8.7.1.1.2.4: CPICH_RSCP Intra frequency relative accuracy requirements for the reported values

	Test 1	Test 2	Test 3				
Normal Conditions							
Lowest reported value cell 2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 13)	CPICH_RSCP_(x - 11)				
Highest reported value cell 2	CPICH_RSCP_x	CPICH_RSCP_(x - 5)	CPICH_RSCP_(x - 3)				
Extreme Conditions							
Lowest reported value cell2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 13)	CPICH_RSCP_(x - 11)				
Highest reported value cell2	CPICH_RSCP_x	CPICH_RSCP_(x - 5)	CPICH_RSCP_(x - 3)				
CPICH_RSCP_x is the reported value of cell 1							

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2 Inter frequency measurement accuracy

8.7.1.2.1 Relative accuracy requirement

8.7.1.2.1.1 Definition and applicability

The relative accuracy of CPICH RSCP in inter frequency case is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.2.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

- CPICH_RSCP1,2 $|_{dBm} \ge -114 dBm$ for Band I.
- CPICH_RSCP1,2|_{dBm} ≥ -112 dBm for Band II,
- CPICH_RSCP1,2|_{dBm} ≥ -111 dBm for Band III.

$$-\left|CPICH _RSCP1\right|_{in \ dBm} - CPICH _RSCP2\Big|_{in \ dBm} \le 20dB.$$

- | Channel $1_{Io}|_{dBm/3.84 \text{ MHz}}$ -Channel $2_{Io}|_{dBm/3.84 \text{ MHz}}$ | $\leq 20 \text{ dB}$.

$$- \left. \frac{I_o}{\left(\hat{I}_{or} \right)_{in\ dB}} \right. - \left. \left(\frac{CPICH_E_c}{I_{or}} \right) \right|_{in\ dB} \leq 20 dB \, .$$

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

		Accura	cy [dB]		Conditions	
Parameter	Unit	Normal	Extreme	eme lo [dBm/3.84 MHz]		:]
		condition	condition	Band I	Band II	Band III
CPICH_RSCP	dBm	±6	±6	-9450 -9250 -9150		

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.2.1 and A.9.1.1.2.

8.7.1.2.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.2.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256". CPICH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

•						
Param	otor	Unit	Tes	st 1	Tes	st 2
Faiaiii	etei	Ollit	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Chan	nel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/lor		dB	-1	10	-1	10
PCCPCH_Ec/lo	r	dB	-12		-1	12
SCH_Ec/lor		dB	-1	12	-1	12
PICH_Ec/lor		dB	-1	15	-1	15
DPCH_Ec/lor		dB	-15	-	-15	-
OCNS_Ec/lor	OCNS_Ec/lor		-1.11	-0.94	-1.11	-0.94
	Band I	dBm/ 3.84		-60.00	-84.00	-94.46
loc	Band II	MHz	-60.00		-82.00	-92.46
	Band III	IVII IZ			-81.00	-91.46
Îor/loc		dB	9.54	9.54	0	-9.54
CPICH RSCP,	Band I				-94.0	-114.0
Note 1	Band II	dBm	-60.46	-60.46	-92.0	-112.0
Note i	Band III				-91.0	-111.0
	Band I	dBm/3.84			-81.0	-94.0
Io, Note 1	Band II	MHz	-50.00	-50.00	-79.0	-92.0
·	Band III	IVITIZ			-78.0	-91.0
Propagation con	dition	-	AW	'GN	AWGN	

Table 8.7.1.2.1.2: CPICH RSCP Inter frequency parameters

NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for test 2 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.1.2.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.4.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 7) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated.
- 9) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info -Activation time	Not Present Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	THE THEORY
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	500
-CHOICE mode -Downlink PDSCH information	FDD Not Present
-Downlink PDSCH information -Downlink information common for all radio links	Not Plesent
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	EDD massacrament
-TGMP -TGPRC	FDD measurement
-TGSN	Infinity 4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	B
-DeltaSIR1	3.0
-DeltaSIRafter1 -DeltaSIR2	3.0 Not Present
-DeltaSIRafter2	Not Present Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present

-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Florent	Value /Damanh
Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells	FALSE
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	FALSE
-CHOICE mode	
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FDD
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	Not Present
Maximum number of reported calls	Depart all active act calls a salls within
-Maximum number of reported cells	Report all active set cells + cells within
-Measurement validity	monitored set on used frequency
-CHOICE report criteria	Virtual/active set cells + 2
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria
	Infinity
Dhysical shannel information along the	250 ms
Physical channel information elements	Not Proport
-DPCH compressed mode status info	Not Present

Second MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	-
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	
	Report cells within monitored set on non-used
-Maximum number of reported cells	frequency
-Measurement validity	2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.2.1.5 Test requirements

Table 8.7.1.2.1.3: CPICH_RSCP Inter frequency relative accuracy, test requirements

		Accuracy [dB]		Conditions		
Parameter	Unit	Normal Extreme		lo [dBm/3.84 MHz]		<u>[</u>]
		condition	condition	Band I	Band II	Band III
CPICH_RSCP	dBm	±7.1	±7.1	-9450 -9250 -91		-9150

Table 8.7.1.2.1.4: CPICH RSCP Inter frequency tests parameters

Parameter		Unit	Tes	st 1	Test 2		
Paraili	1 di diffetei		Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Chan	nel number		Channel 1 Channel 2		Channel 1	Channel 2	
CPICH_Ec/lor		dB	-1	0	1	10	
PCCPCH_Ec/lo	r	dB	-1	2	-1	12	
SCH_Ec/lor		dB	-1	2	-1	12	
PICH_Ec/lor		dB	-1	5	-1	15	
DPCH_Ec/lor		dB	-15	-	-15	-	
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	
	Band I	dBm/ 3.84 MHz	-61.6	-61.6	-83.00	-93.46	
loc	Band II				-81.00	-91.46	
	Band III				-80.00	-90.46	
Îor/loc		dB	9.84	9.84	0.3	-9.24	
CPICH RSCP,	Band I				-92.7	-112.7	
Note 1	Band II	dBm	-61.8	-61.8	-90.7	-110.7	
Note 1	Band III				-89.7	-109.7	
	Band I	dBm/3.84			-79.8	-93.0	
Io, Note 1	Band II	MHz	-51.3	-51.3	-77.8	-91.0	
	Band III	IVITIZ			-76.8	-90.0	
Propagation condition -			AW	'GN	AWGN		

NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for test 2 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the relative inter frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.2.1.5.

Table 8.7.1.2.1.5: CPICH_RSCP Inter frequency relative accuracy requirements for the reported values

	Test 1	Test 2
Normal Conditions		
Lowest reported value cell 2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 28)
Highest reported value cell 2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x - 12)
Extreme Conditions		
Lowest reported value cell2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 28)
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x - 12)
CPICH_RSCP_x is the reported value	ue of cell 1	

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2 CPICH Ec/lo

8.7.2.1 Intra frequency measurements accuracy

8.7.2.1.1 Absolute accuracy requirement

8.7.2.1.1.1 Definition and applicability

The absolute accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the actual CPICH Ec/Io power ratio from same cell.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.1.1 are valid under the following conditions:

- CPICH_RSCP1 $|_{dBm} \ge -114 dBm$ for Band I.
- CPICH_RSCP1|_{dBm} ≥ -112 dBm for Band II,
- CPICH_RSCP1|_{dBm} ≥ -111 dBm for Band III.

$$-\frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dR}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dR} \le 20dB.$$

Table 8.7.2.1.1.1: CPICH_Ec/lo Intra frequency absolute accuracy, minimum requirements

Parameter Unit		Accuracy [dB]		Conditions			
		Normal condition	Extreme	lo [dBm/3.84 MHz]			
	Normal condition		condition	Band I	Band II	Band III	
		±1,5 for -14 ≤ CPICH Ec/lo					
CPICH_Ec/lo	dB	± 2 for -16 \leq CPICH Ec/lo $<$ -14	±3	-9450	-9250	-9150	
		± 3 for $-20 \le CPICH Ec/lo < -16$					

The normative reference for this requirement is TS 25.133 [2] clause 9.1.2.1.1.

8.7.2.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io absolute measurement accuracy is within the specified limits in clause 8.7.2.1.1.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.1.1.4 Method of test

8.7.2.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH Ec/Io intra frequency absolute accuracy requirements are tested by using the test parameters in table 8.7.2.1.1.2.

Do	· om otor	Unit	Te	st 1	Tes	st 2	Tes	st 3				
Parameter		Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2				
UTRA RF Ch	annel number		Char	nel 1	Char	Channel 1		nel 1				
CPICH_Ec/Id	r	dB		10	-1	10	-1	0				
PCCPCH_E	/lor	dB		12	-1	12	-1	2				
SCH_Ec/lor		dB		12	-1	12	-1	2				
PICH_Ec/lor		dB		15	-1	15	-1	-15				
DPCH_Ec/lo	•	dB	-15	-	-15	-	-6	-				
OCNS_Ec/lo	r	dB	-1.11	-0.94	-1.11	-0.94	-2.56	-0.94				
	Band I		-56.98				-89	0.07	-94	.98		
loc	Band II	dBm/ 3.84 MHz			-87.07		-92.98					
	Band III						-86	5.07	-91	.98		
Îor/loc	•	dB	3.0	3.0	-2.9	-2.9	-9.0	-9.0				
CPICH Ec/lo	Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0				
Io, Note 1 Band I			-50		<u>'</u>				-8	36	-6	94
Band II		dBm/3.84 MHz			-50		-8	34	-6	92		
	Band III				-8	33	-6	91				
Propagation	condition	-	AW	AWGN		AWGN		AWGN				

Table 8.7.2.1.1.2: CPICH_Ec/lo Intra frequency parameters

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.2.1.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.1.5.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check CPICH_Ec/No value in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1, which is compared to the actual CPICH Ec/Io power ratio from the same cell for each MEASUREMENT REPORT message.
- 5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.5 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.5 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Table 8.7.2.1.1.3: CPICH Ec/lo measurement report mapping

Reported value	Measured quantity value	Unit
CPICH_Ec/No _00	CPICH Ec/lo < -24	dB
CPICH_Ec/No _01	-24 ≤ CPICH Ec/lo < -23.5	dB
CPICH_Ec/No _02	-23.5 ≤ CPICH Ec/lo < -23	dB
CPICH_Ec/No _47	-1 ≤ CPICH Ec/lo < -0.5	dB
CPICH_Ec/No _48	-0.5 ≤ CPICH Ec/lo < 0	dB
CPICH_Ec/No _49	0 ≤ CPICH Ec/lo	dB

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
-message admentication code	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
-KKO message sequence number	internal counter.
Measurement Information elements	The state of the s
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical reporting
- Periodical Reporting / Event Trigger Reporting	
Mode	Not Present
-Additional measurement list	Intra-frequency measurement
-CHOICE Measurement Type	' '
-Intra-frequency measurement	
- Intra-frequency measurement objects list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	
-Cell synchronisation information reporting	
indicator	FALSE
-Cell Identity reporting indicator	
-CHOICE mode	FALSE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells	FALSE
-Reporting cell status	Not Present
-CHOICE reported cell	
	Report all active set cells + cells within
-Maximum number of reported cells	monitored set on used frequency
-Measurement validity	Virtual/active set cells + 2
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.1.1.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in subclause 8.7.2.1.1.2 as shown in table 8.7.2.1.1.4.

Table 8.7.2.1.1.4: CPICH_Ec/lo Intra frequency absolute accuracy, test requirements

		Accuracy [dB]	Conditions			
Parameter	Unit	Normal condition	Extreme	lo [dBm/3.84 MHz]		
		Normal condition	condition	Band I	Band II	Band III
~		-3.11.9 for -14 ≤ CPICH Ec/lo -3.62.4 for -16 ≤ CPICH Ec/lo < -14 -4.63.4 for -20 ≤ CPICH Ec/lo < -16	-4.63.4	-9487	-9285	-9184
		\pm 1.95 for -14 \leq CPICH Ec/lo \pm 2.4 for -16 \leq CPICH Ec/lo $<$ -14 \pm 3.4 for -20 \leq CPICH Ec/lo $<$ -16	± 3.4	-8750	-8550	-8450

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.1.1.5: CPICH_Ec/lo Intra frequency tests parameters

Parameter		Unit	Tes	st 1	Test 2		Test 3			
		Offic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2		
UTRA RF Ch	annel number		Channel 1		Channel 1		Channel 1			
CPICH_Ec/lo	r	dB	-0	.7	-9	.8	-9	.9		
PCCPCH_Ec	/lor	dB	-1	1.7	-11	1.8	-11	1.9		
SCH_Ec/lor		dB	-1	1.7	-11	1.8	-11	1.9		
PICH_Ec/lor		dB	-14	4.7	-14	-14.8		-14.9		
DPCH_Ec/lor	,	dB	-14.7	-	-14.8	-	-5.9	-		
OCNS_Ec/lor	•	dB	-1.2	-1.02	-1.17	-0.99	-2.64	-0.97		
	Band I				-89	.07	-93	.98		
loc	Band II	dBm/ 3.84 MHz	-58.5		-58.5		-87.07		-91	.98
	Band III				-86	.07	-90	.98		
Îor/loc		dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7		
CPICH Ec/lo,	Note 1	dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6		
	Band I				-85	.85	-92	2.9		
Io, Note 1	Band II	dBm / 3.84 MHz	-5	-51.3		-83.85		0.9		
Band III					-82	.85	-89	9.9		
Propagation of	Propagation condition		AW	'GN	AWGN		AWGN			
NOTE 1 CE	NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They									

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the absolute intra frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.1.1.6.

Table 8.7.2.1.1.6: CPICH_Ec/lo Intra frequency absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value	CPICH_Ec/No_17	CPICH_Ec/No_12	CPICH_Ec/No_0
Highest reported value	CPICH_Ec/No_25	CPICH_Ec/No_22	CPICH_Ec/No_16
Extreme Conditions			
Lowest reported value	CPICH_Ec/No_14	CPICH_Ec/No_10	CPICH_Ec/No_0
Highest reported value	CPICH_Ec/No_28	CPICH_Ec/No_24	CPICH_Ec/No_16

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.1.2 Relative accuracy requirement

8.7.2.1.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.1.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.2.1 are valid under the following conditions:

- CPICH_RSCP1,2|_{dBm} ≥ -114 dBm for Band I.
- CPICH_RSCP1,2|_{dBm} ≥ -112 dBm for Band II,
- CPICH_RSCP1,2 $|_{dBm} \ge -111$ dBm for Band III.

-
$$|CPICH _RSCP1|_{in dBm} - CPICH _RSCP2|_{in dBm}| \le 20dB$$
.

$$-\frac{I_o}{\left(\hat{I}_{or}\right)_{in,dB}} - \left(\frac{CPICH - E_c}{I_{or}}\right)_{in,dB} \le 20dB.$$

Table 8.7.2.1.2.1: CPICH_Ec/lo Intra frequency relative accuracy

		Accuracy [dB]			Conditions	
Parameter	Unit	Normal condition	Extreme	lo	[dBm/3.84 MI	lz]
		Normal condition	condition	Band I	Band II	Band III
	dB	\pm 1,5 for -14 \leq CPICH Ec/lo				
CPICH_Ec/lo		±2 for -16 ≤ CPICH Ec/lo < -14	±3	-9450	-9250	-9150
		± 3 for $-20 \le CPICH Ec/lo < -16$				

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.2.1.2 and A.9.1.2.2.

8.7.2.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io relative measurement accuracy is within the specified limits in clause 8.7.2.1.2.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.1.2.4 Method of test

8.7.2.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are in the same frequency. CPICH Ec/Io intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.1.1.2.

8.7.2.1.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.2.3.

- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio value measured from Cell 1 is compared to CPICH_Ec/Io power ratio value measured from Cell 2 for each MEASUREMENT REPORT message.
- 5) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.2.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.2.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated.
- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.2.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.1.2.5 Test requirements

Table 8.7.2.1.2.2: CPICH_Ec/lo Intra frequency relative accuracy

		Accuracy [dB]			Conditions	
Parameter	Unit	Normal condition	Extreme	lo [dBm / 3.84 M	Hz]
		Normal condition	condition	Band I	Band II	Band III
	dB	±2.3 for -14 ≤ CPICH Ec/lo				
CPICH_Ec/lo		± 2.8 for -16 \leq CPICH Ec/lo $<$ -14	±3.8	-9450	-9250	-9150
		± 3.8 for $-20 \le CPICH Ec/lo < -16$				

Table 8.7.2.1.2.3: CPICH_Ec/lo Intra frequency tests parameters

Parameter		Unit	Tes	st 1	Tes	st 2	Test 3		
		Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Char	nnel number		Char	nel 1	Channel 1		Channel 1		
CPICH_Ec/lor		dB	-6).7	-9	-9.8		.9	
PCCPCH_Ec/lo	or	dB	-1	1.7	-11	1.8	-11	1.9	
SCH_Ec/lor		dB	-1	1.7	-11	1.8	-11	1.9	
PICH_Ec/lor		dB	-14	4.7	-14	-14.8		-14.9	
DPCH_Ec/lor		dB	-14.7	-	-14.8	-	-5.9	-	
OCNS_Ec/lor		dB	-1.2	- 1.02	-1.17	-0.99	-2.64	-0.97	
	Band I				-89	.07	-93	.98	
loc	Band II	dBm/ 3.84 MHz	-58	8.5	-87	.07	-91	.98	
	Band III				-86.07		-90.98		
Îor/loc		dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7	
CPICH Ec/Io, Note 1		dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6	
	Band I				-85	.85	-92	2.9	
Io, Note 1	Band II	dBm / 3.84 MHz	-5	1,3	-83	.85	-90	0.9	
	Band III				-82	.85	-89	9.9	
Propagation co		-		'GN	AWGN		AWGN		

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the relative intra frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.1.2.4.

Table 8.7.2.1.2.4: CPICH_Ec/lo Intra frequency relative accuracy requirements for the reported values

	Test 1	Test 2	Test 3				
Normal Conditions							
Lowest reported value cell 2	CPICH_Ec/No_(x - 5)	CPICH_Ec/No_(x - 6)	CPICH_Ec/No_(x - 8)				
Highest reported value cell 2	CPICH_Ec/No_(x+ 5)	CPICH_Ec/No_(x + 6)	CPICH_Ec/No_(x+ 8)				
Extreme Conditions							
Lowest reported value cell2	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 8)				
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x+ 8)	CPICH_Ec/No_(x+ 8)				
CPICH_Ec/No_x is the reported value of cell 1							

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.2 Inter frequency measurement accuracy

8.7.2.2.1 Absolute accuracy requirement

Void

8.7.2.2.2 Relative accuracy requirement

8.7.2.2.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io in the inter frequency case is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.2.2.1 are valid under the following conditions:

- CPICH_RSCP1,2 $|_{dBm} \ge -114 dBm$ for Band I.
- CPICH_RSCP1,2|_{dBm} ≥ -112 dBm for Band II,
- CPICH_RSCP1,2 $|_{dBm} \ge -111 dBm$ for Band III.

-
$$|CPICH _RSCP1|_{in \ dBm} - CPICH _RSCP2|_{in \ dBm}| \le 20dB$$
.

- | Channel 1_Io $|_{dBm/3.84 \text{ MHz}}$ -Channel 2_Io $|_{dBm/3.84 \text{ MHz}}$ | $\leq 20 \text{ dB}$.

$$- \frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dB} \le 20dB.$$

Table 8.7.2.2.2.1: CPICH_Ec/lo Inter frequency relative accuracy, minimum requirements

		Accuracy [dB]			Conditions		
Parameter	Unit	Normal condition	Extreme	lo	[dBm/3.84 MH	łz]	
		Normal condition	condition	Band I	Band II	Band III	
	dB	±1.5 for -14 ≤ CPICH Ec/lo					
CPICH_Ec/lo		± 2 for -16 \leq CPICH Ec/lo $<$ -14	±3	-9450	-9250	-9150	
		± 3 for $-20 \le CPICH Ec/lo < -16$					

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.2.2.2 and A.9.1.2.2.

8.7.2.2.2.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io relative measurement accuracy is within the specified limits in clause 8.7.2.2.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.2.2.4 Method of test

8.7.2.2.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256". CPICH Ec/Io inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.2.2.2.

Parameter		Unit	Test 1		Test 2		Test 3	
		Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF (Channel		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
number			Chameri	Charmer 2	Chameri	Charmer 2	Chameri	Criarinei 2
CPICH_Ec	/lor	dB	-1	10	-1	10	-1	0
PCCPCH_	Ec/lor	dB	-1	12	-1	12	-1	2
SCH_Ec/ld	r	dB	-1	12	-1	12	-1	2
PICH_Ec/Id	or	dB	-15		-15		-15	
DPCH_Ec/	lor	dB	-15	-	-6	-	-6	1
OCNS_Ec/	lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
	Band I	dBm/ 3.84			-87.27	-87.27	-94.46	-94.46
loc	Band II	MHz	-52.22	52.22 -52.22	-85.27	-85.27	-92.46	-92.46
	Band III	IVII IZ			-84.27	-84.27	-91.46	-91.46
Îor/loc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/	lo, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
	Band I	dDm/2 04			-86	-86	-94	-94
Io, Note 1	Band II	MHz	dBm/3.84 -50	-50	-84	-84	-92	-92
	Band III	IVII IZ			-83	-83	-91	-91
Propagatio	n condition	-	AW	'GN	AWGN		AWGN	

Table 8.7.2.2.2: CPICH Ec/lo Inter frequency parameters

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.2.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.2.2.4.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio measured from Cell 1 is compared to CPICH_Ec/Io power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 7) The result of step 6) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated.
- 9) After 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI -New C-RNTI	Not Present Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	Not i resent
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links -Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	100
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 - TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN -TGL1	4 7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	В
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2 -DeltaSIRafter2	Not Present Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present

-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-freqquency measurement objects list	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells	FALSE
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	FALSE
-CHOICE mode	
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FDD
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells	TRUE
-Reporting quantities for detected set cells -Reporting cell status	FALSE
-CHOICE reported cell	Not Present
S. 1310L Topolitud boli	133.1100011
-Maximum number of reported cells	Report all active set cells + cells within
-Measurement validity	monitored set on used frequency
-CHOICE report criteria	Virtual/active set cells + 2
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria
Toporting intorval	Infinity
	250 ms
Physical channel information elements	200 1110
-DPCH compressed mode status info	Not Present
יום	INOLITOSCIIL

Second MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	TDUE
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting indicator	TRUE
	IRUE
-Cell Identity reporting indicator -CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH EC/NO reporting indicator -CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	TALOE
STICIOL TOPORTOG OCII	Report cells within monitored set on non-used
-Maximum number of reported cells	frequency
-Measurement validity	2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
-13	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.2.5 Test requirements

The effect of assumed thermal noise and noise generated in the receiver (-99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in clause 8.7.2.2.2.2 as shown in table 8.7.2.2.2.3.

Table 8.7.2.2.2.3: CPICH_Ec/lo Inter frequency relative accuracy, test requirements

Parameter	Unit	Normal condition	Extreme	lo [dBm/3.84 MHz]			
			condition	Band I	Band II	Band III	
CPICH_Ec/Io	dB	± 3.5 for -14 \leq CPICH Ec/lo					
		±4 for -16 ≤ CPICH Ec/lo < -14	± 5	-9487	-9285	-9184	
		± 5 for $-20 \le CPICH Ec/lo < -16$					
		± 2.3 for -14 \leq CPICH Ec/lo					
		± 2.8 for -16 ≤ CPICH Ec/lo < -14	± 3.8	-8750	-8550	-8450	
		\pm 3.8 for -20 \leq CPICH Ec/lo $<$ -16					

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.2.2.4: CPICH Ec/lo Inter frequency tests parameters

Parameter		Unit	Test 1		Test 2		Test 3	
		Oill	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
number								
CPICH_Ec		dB	-1	10	-1	10	-1	10
PCCPCH_	Ec/lor	dB	-1	12	-1	12	-1	12
SCH_Ec/ld	or	dB	-1	12	-1	12	-1	12
PICH_Ec/Id	or	dB	-1	15	-15		-15	
DPCH_Ec/	lor	dB	-15	-	-6	-	-6	-
OCNS_Ec/	lor	dB	-1.12	-0.95	-2.55	-0.94	-2.55	-0.94
	Band I	dBm/ 3.84	-/204	-53.5 -53.5	-86.27	-86.27	-93.46	-93.46
loc	Band II	MHz	-53.5		-84.27	-84.27	-91.46	-91.46
	Band III	IVII IZ			-83.27	-83.27	-90.46	-90.46
Îor/loc		dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/	lo, Note 1	dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
	Band I	dBm /3.84			-84.9	-84.9	-93	-93
Io, Note 1	Band II	MHz	-51.15	-51.15	-82.9	-82.9	-91	-91
	Band III	IVII IZ			-81.9	-81.9	-90	-90
Propagatio	n condition		AW	'GN	AWGN		AWGN	

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

The reported values for the relative inter frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.2.2.5.

Table 8.7.2.2.2.5: CPICH_Ec/lo Inter frequency relative accuracy requirements for the reported values

	Test 1	Test 2	Test 3				
Normal Conditions							
Lowest reported value cell 2	CPICH_Ec/No_(x -5)	CPICH_Ec/No_(x - 6)	CPICH_Ec/No_(x - 10)				
Highest reported value cell 2	CPICH_Ec/No_(x+5)	CPICH_Ec/No_(x + 6)	CPICH_Ec/No_(x +10)				
Extreme Conditions							
Lowest reported value cell2	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 10)				
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x + 10)				
CPICH_Ec/No_x is the reported value of cell 1							

8.7.3 UTRA Carrier RSSI

NOTE: This measurement is for Inter-frequency handover evaluation.

8.7.3.1 Absolute measurement accuracy requirement

8.7.3.1.1 Definition and applicability

The absolute accuracy of UTRA Carrier RSSI is defined as the UTRA Carrier RSSI measured from one frequency compared to the actual UTRA Carrier RSSI power of that same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3.1.2 Minimum Requirements

Table 8.7.3.1.1: UTRA Carrier RSSI Inter frequency absolute accuracy

		Accuracy [dB]		Conditions			
Parameter	Unit	Unit	Normal	Extreme	lo	[dBm/3.84 MF	lz]
		condition	condition	Band I	Band II	Band III	
UTRA Carrier	dBm	± 4	± 7	-9470	-9270	-9170	
RSSI	dBm	± 6	± 9	-7050	-7050	-7050	

The normative reference for this requirement is TS 25.133 [2] clause 9.1.3.1.

8.7.3.1.3 Test purpose

The purpose of this test is to verify that the UTRA Carrier RSSI measurement is within the specified limits. This measurement is for inter-frequency handover evaluation.

8.7.3.1.4 Method of test

8.7.3.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, Set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256". UTRA Carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

		1						
Para	motor	Unit	Test 1		Test 2		Test 3	
Parameter		Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec	/lor	dB	-1	10	-1	10	-1	0
PCCPCH_	Ec/lor	dB	-1	12	-1	12	-1	2
SCH_Ec/Id	or	dB	-1	12	-1	12	-1	2
PICH_Ec/le	or	dB	-15		-15		-15	
DPCH_Ec/	'lor	dB	-15	-	-6	-	-6	-
OCNS_Ec/	lor l	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
	Band I	dD/2.04	-52.22	-52.22	-70.27	-70.27	-94.46	-94.46
loc	Band II	dBm/ 3.84 MHz					-92.46	-92.46
	Band III	IVI□Z					-91.46	-91.46
Îor/loc	•	dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/	To, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
	Band I	dDm/2 04					-94	-94
Io, Note 1	Band II	dBm/3.84 MHz	-50	-50	-69	-69	-92	-92
	Band III	IVITZ				-91	-91	
Propagatio	n condition	-	AW	GN	AWGN		AWGN	

Table 8.7.3.1.2: UTRA Carrier RSSI Inter frequency test parameters

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.3.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.3.1.2.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA Carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.
- 7) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) above is repeated.
- 8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 2):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	N. B.
-CN Information info	Not Present
UTRAN mobility information elements	Not Propert
-URA identity	Not Present
RB information elements	Not Propert
-Downlink counter synchronisation info PhyCH information elements	Not Present
	Not Present
-Frequency info Uplink radio resources	Not Present
-Maximum allowed UL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	Not i leselit
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	THOU TOOSIN
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	FDD
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN -TGL1	4 7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	В
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present

-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message for Inter frequency measurement (step 4):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode -Additional measurement list	Not Present
-Additional measurement list -CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	inter-frequency measurement
-Inter-frequency measurement	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included.
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	THOU TOOSIN
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting cell status -CHOICE reported cell	FALSE
-Choice reported cell	Papart calls within manitared set on non-used
-Maximum number of reported cells	Report cells within monitored set on non-used frequency
-Measurement validity	2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.3.1.5 Test requirements

The UTRA Carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.3.1.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in subclause 8.7.3.1.2 as shown in table 8.7.3.1.3.

Table 8.7.3.1.3: UTRA Carrier RSSI absolute accuracy

				Accuracy	/ [dB]		
Parameter	Unit	No	Normal condition		Extreme condition		tion
		Test 1	Test 2	Test 3	Test 1	Test 2	Test 3
UTRA Carrier RSSI	dBm	± 7.15	± 5.1	-55.8	± 10.15	± 8.1	-88.8

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

Table 8.7.3.1.4: UTRA Carrier RSSI Inter frequency test parameters

Paran	Parameter		Tes	st 1	Test 2		Test 3	
raiailletei		Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF C	hannel		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
number			Chamer	Charmer 2	Chamer	Charmer 2	Cildille	Charmer 2
CPICH_Ec/	lor	dB	-1	10	-1	0	-1	10
PCCPCH_E	Ec/lor	dB	-1	12	-1	2	-1	12
SCH_Ec/lor	ſ	dB	-1	12	-1	2	-1	12
PICH_Ec/lo	r	dB	-15 -15		-15			
DPCH_Ec/I	or	dB	-15	-	-6	-	-6	-
OCNS_Ec/I	or	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
	Band I	dD/2.04					-93.46	-93.46
loc	Band II	dBm/ 3.84 MHz	-53.5	-53.5	-69.27	-69.27	-91.46	-91.46
	Band III	IVII IZ					-90.46	-90.46
Îor/loc		dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/I	o, Note 1	dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
	Band I	dD/0.04					-93	-93
Io, Note 1	Band II	dBm/3.84 MHz	-51.15	-51.15	-67.9	-67.9	-91	-91
	Band III	IVI⊓Z					-90	-90
Propagation	n condition	-	AW	GN	AWGN		AWGN	

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the UTRA Carrier RSSI absolute measurement shall meet the requirements in table 8.7.3.1.5.

Table 8.7.3.1.5: UTRA Carrier RSSI absolute accuracy requirements for the reported values

	Test 1 Test 2		Test 3	
Normal Conditions	•			
Lowest reported	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	
value (Cell 2)	42	27	02	
Highest reported	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	
value (Cell 2)	57	38	13	
Extreme Condition	IS			
Lowest reported	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	
value (Cell 2)	39	24	00	
Highest reported	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	
value (Cell 2)	60	41	16	

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3.2 Relative measurement accuracy requirement

8.7.3.2.1 Definition and applicability

The relative accuracy requirement is defined as the UTRA Carrier RSSI measured from one frequency compared to the UTRA Carrier RSSI measured from another frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3.2.2 Minimum Requirements

The accuracy requirements in table 8.7.3.2.1 are valid under the following condition:

| Channel 1_ $Io|_{dBm/3.84 \text{ MHz}}$ -Channel 2_ $Io|_{dBm/3.84 \text{ MHz}}$ | < 20 dB.

Table 8.7.3.2.1: UTRA Carrier RSSI Inter frequency relative accuracy

		Accura	cy [dB]	Conditions		
Parameter	Unit	Normal	Extreme	Extreme Io [dBm/3.84 MHz		z]
		condition	condition	Band I	Band II	Band III
UTRA Carrier RSSI	dBm	± 7	± 11	-9470	-9270	-9170

The normative reference for this requirement is TS 25.133 [2] clause 9.1.3.2.

8.7.3.2.3 Test purpose

The purpose of this test is to verify that the UTRA Carrier RSSI measurement is within the specified limits. This measurement is for inter-frequency handover evaluation.

8.7.3.2.4 Method of test

8.7.3.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, Set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 – TTI/10msec))mod 256". UTRA Carrier RSSI relative accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

8.7.3.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 3 are set up according to table 8.7.3.2.3.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.

- 6) SS shall check UTRA carrier RSSI value of Channel 1 and Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power value measured from Channel 1 is compared to UTRA carrier RSSI power value measured from Channel 2 for each MEASUREMENT REPORT message.
- 7) The result of step 6) is compared to actual power level difference of UTRA Carrier RSSI of Channel 1 and Channel 2.
- 8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message and MEASUREMENT CONTROL message for Inter frequency measurement in clause 8.7.3.1.4.2 is used.

MEASUREMENT REPORT message for inter - frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.3.2.5 Test requirements

The UTRA Carrier RSSI relative measurement accuracy shall meet the requirements in clause 8.7.3.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in clause 8.7.3.2.2 as shown in table 8.7.3.2.2.

Table 8.7.3.2.2: UTRA Carrier RSSI relative accuracy

		Accuracy	Accuracy [dB]		
Parameter	Unit	Normal condition	Extreme condition		
		Test 3	Test 3		
UTRA Carrier RSSI	dBm	± 7.4	± 11.4		

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

Table 8.7.3.2.3: UTRA Carrier RSSI Inter frequency test parameters

Parameter		Unit	Tes	st 3
	Farameter		Cell 1	Cell 2
UTRA RF C	Channel number		Channel 1	Channel 2
CPICH_Ec/	'lor	dB	-1	0
PCCPCH_E	Ec/lor	dB	-1	2
SCH_Ec/lo	r	dB	-1	2
PICH_Ec/Id	or	dB	-1	5
DPCH_Ec/I	or	dB	-6	•
OCNS_Ec/	OCNS_Ec/lor		-2.56	-0.94
	Band I	-ID/ 0.04	-93.46	-93.46
loc	Band II	dBm/ 3.84 MHz	-91.46	-91.46
	Band III	IVII IZ	-90.46	-90.46
Îor/loc		dB	-9.24	-9.24
CPICH Ec/l	o, Note 1	dBm	-19.7	-19.7
	Band I	dBm/3.84	-93	-93
Io, Note 1	Band II	MHz	-91	-91
	Band III	IVII IZ	-90	-90
Propagation condition		-	AWGN	
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for				
information purposes. They are not settable parameters themselves.				

The reported values for the UTRA Carrier RSSI relative measurement shall meet the requirements in table 8.7.3.2.4.

Table 8.7.3.2.4: UTRA Carrier RSSI relative accuracy requirements for the reported values

	Test 3		
Normal Conditions			
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_(x - 8)		
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_(x + 8)		
Extreme Conditions			
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV(x - 12)		
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV(x + 12)		
UTRA_carrier_RSSI_LEV_x is the reported value of cell 1			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3A GSM Carrier RSSI

8.7.3A.1 Definition and applicability

The GSM carrier RSSI measurement is used for handover between UTRAN and GSM.

The requirements and this test apply to the combined FDD and GSM UE.

8.7.3A.2 Minimum Requirements

The UE shall meet the measurement accuracy requirements stated for RXLEV below, when the given measurement time allows the UE to take at least 3 GSM carrier RSSI samples per GSM carrier in the monitored set during the measurement period.

The R.M.S received signal level at the receiver input shall be measured by the UE and the BSS over the full range of -110 dBm to -48 dBm with an absolute accuracy of ± 4 dB from -110 dBm to -70 dBm under normal conditions and ± 6 dB over the full range under both normal and extreme conditions. The R.M.S received signal level at the receiver input shall be measured by the UE above -48 dBm up to -38 dBm with an absolute accuracy of ± 9 dB under both normal and extreme conditions.

If the received signal level falls below the reference sensitivity level for the type of UE or BSS, then the measured level shall be within the range allowing for the absolute accuracy specified above. In case the upper limit of this range is below the reference sensitivity level for the type of UE or BSS, then the upper limit shall be considered as equal to the reference sensitivity level.

The reporting range and mapping specified for RXLEV in TS 05.08 shall apply.

The normative reference for this requirement is TS 25.133 [2] clause 8.1.2.5 and 9.1.4 and TS 05.08 [20] clause 8.1.2.

8.7.3A.3 Test purpose

The purpose of this test is to verify that the GSM Carrier RSSI measurement accuracy in CELL_DCH state, for UE that needs compressed mode to perform GSM measurements, is within the specified limits. This measurement is for UTRAN to GSM handover evaluation.

8.7.3A.4 Method of test

8.7.3A.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In the test in Cell_DCH state compressed mode with purpose "GSM Carrier RSSI Measurement" is applied to measure on GSM. The gap length is 7, detailed definition is in clause C.5, Set 2 of table C.5.2 except for TGPRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 – TTI/10msec))mod 256". Table 8.7.3A.1 defines

the limits of signal strengths and code powers on the UMTS FDD cell, where the requirement is applicable. In the measurement control information it is indicated to the UE that periodic reporting of the GSM RSSI measurement.

Table 8.7.3A.1: General GSM Carrier RSSI test parameters

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in section C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI measurement		Compressed mode reference pattern 2 Set 2	As specified in table C.5.2 section C.5
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		Not required	
Monitored cell list size		6 GSM neighbours including ARFCN 1	Measurement control information is sent before the compressed mode patterns starts.

Table 8.7.3A.2: Cell specific GSM Carrier RSSI test parameters

Parameter	Unit	Cell 1
UTRA RF Channel number	=	Channel 1
Îor/loc	DB	-1
loc	dBm/ 3.84 MHz	-70
Propagation condition	-	AWGN

- 1) The SS is set to produce the BCCHs of 6 surrounding cells at $28 \text{ dB}\mu\text{Vemf}(\)$. The fading profile for the BCCHs of the serving and surrounding cells will be set to static, see $51.010\text{-}1\ [25]$. The limits of the GSM test parameters are defined in TS $05.08\ [20]$.
- 2) After 30 seconds a call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Cell 1 is set up according to table 8.7.3A.1 and 8.7.3A.2.

8.7.3A.4.2 Procedure

- 1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 3) SS shall transmit MEASUREMENT CONTROL message.
- 4) UE shall transmit periodically MEASUREMENT REPORT messages.
- 5) SS shall check GSM carrier RSSI value of the GSM cells in MEASUREMENT REPORT messages. The measurement is done in 105 steps. The initial signal levels of the BCCHs of the surrounding cells are adjusted according to table 8.3.7A.3. At each step the SS keeps the signal levels stable for one reporting period, except at steps 21 + m × 21 where the level is held stable for 1,75 reporting periods. The GSM CARRIER RSSI value for the period in which the change occurs (reported in the following period) is discarded. The SS records the GSM CARRIER RSSI values reported for the surrounding cell BCCHs in steps 1 + m × 21 and 21 + m × 21. The GSM CARRIER RSSI values for BCCH 1 are recorded by the SS for all 105 steps.

NOTE: This extension at steps $21 + m \times 21$ is to allow an extra quarter reporting period for the UE to stabilize for steps $1 + m \times 21$.

Table 8.3.7A.3: Signal levels at receiver input in $dB\mu Vemf(\)$

	ARFCN	BCCH1	BCCH2	ВССН3	ВССН4	ВССН5	ВССН6
Step	GSM 450	276	293	264	269	281	288
	GSM 480	323	340	311	316	328	335
	GSM 900:	62	124	20	40	80	100
	DCS 1 800	700	885	585	660	790	835
	PCS 1 900	700	805	585	660	790	550
	450/900	124	276	293	269	288	1
	480/900	124	323	340	316	335	1
	450/1 800	885	276	293	269	288	512
	480/1 800	885	323	340	316	335	512
	900/1 800	885	62	124	40	100	512
	450/900/1 80	124	276	885	293	1	512
	0						
	480/900/1 80	124	323	885	340	1	512
	0						
	GSM 850	189	251	150	170	210	230
	GSM 750	475	511	440	455	485	500
	750/850	251	475	511	455	485	128
1 + m × 21		64,5 - m×	64,5 - m×	64,5 - m ×	64,5 - m ×	64,5 - m×	64,5 - m × 10
		10	10	10	10	10	,
2 + m × 21		63,5 - m×	54,5 - m×	54,5 - m×	54,5 - m×	54,5 - m ×	54,5 - m × 10
		10	10	10	10	10	,
3 + m × 21		62,5 - m×	44,5 - m×	44,5 - m×	44,5 - m×	44,5 - m×	44,5 - m × 10
		10	10	10	10	10	,
						44,5 - m×	44,5 - m × 10
						10	,
17 + m×						44,5 - m×	44,5 - m × 10
21						10	,
18 + m×						44,5 - m×	44,5 - m × 10
21						10	,-
						44,5 - m×	44,5 - m × 10
						10	
21 + m×		44,5 - m×	44,5 - m×	44,5 - m ×	44,5 - m×	44,5 - m×	44,5 - m × 10
21		10	10	10	10	10	
m = 0, 1, 2, 3	3, 4.						•

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	l _N · B
-URA identity	Not Present
RB information elements	N. B.
-Downlink counter synchronisation info	Not Present
PhyCH information elements	Not Decout
-Frequency info	Not Present
Uplink radio resources	Not Dropont
-Maximum allowed UL TX power	Not Present Not Present
- CHOICE channel requirement Downlink radio resources	Not Flesent
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	Not i losom
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 - TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	0014
-TGMP	GSM carrier RSSI measurement
-TGPRC	Infinity
-TGSN -TGL1	4 7
-TGL2	Not Present
-TGD	0
-TGPL1	12
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	В
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present

-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	A also asside data disea de DLO
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-RAT measurement
-Inter-RAT measurement	inter to trineasurement
-Inter-RAT measurement objects list	
-CHOICE Inter-RAT cell removal	Not Present
-New inter-RAT cells	
-Inter-RAT cell id	9
-CHOICE Radio Access Technology	GSM
-GSM	
-Cell individual offset	0
-Cell selection and re-selection info	Not Present
-BSIC	
-Base transceiver Station Identity Code (BSIC)	Reference to TS 34.108 table 6.1.10 for Cell 9
-Band indicator	According to PICS/PIXIT
-BCCH ARFCN	Not Brosser
-Cell for measurement	Not Present
-Inter-RAT measurement quantity -Measurement quantity for UTRAN quality	Not Present
estimate	Not Flesent
-CHOICE system	GSM
-GSM	GOIVI
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	not required
-Inter-RAT reporting quantity	
-UTRAN estimated quality	FALSE
-CHOICE system	GSM
-GSM	
-Observed time difference to GSM cell Reporting	FALSE
indicator	TRUE
-GSM carrier RSSI reporting indicator	TRUE
-Reporting cell status	Deport cells within active act as within victual
-CHOICE reported cell	Report cells within active set or within virtual
-Maximum number of reported colls	active set or of the other RAT
-Maximum number of reported cells -CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	000 1110
-DPCH compressed mode status info	Not Present
2. C. Compressed mede diated into	

MEASUREMENT REPORT message for inter – RAT test cases

This message is common for all inter-RAT test cases in clause 8.7 and is described in Annex I.

8.7.3A.5 Test requirements

- a) For each of the steps 1, 21, 22, 42, 43 and 64, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 4 if the measurements are on the same or on different RF channel within the same frequency band and no more than 8 (12 for extreme temperature conditions) if the measurements are on different frequency bands.
- b) For each of the steps 63 and 85, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 5 for small UE, DCS 1 800 and PCS 1 900 (Class 1 and 2) UE or 4 for other UE if the measurements are on the same or on different RF channel within the same frequency band and no more than 9 for small UE, DCS 1 800 and PCS 1 900 (Class 1 and 2) UE or 8 for other UE and other PCS 1 900 UE (13 and 12 for extreme temperature conditions) if the measurements are on different frequency bands.
- c) For step 84, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 5 if the measurements are on the same or on different RF channel within the same frequency band and no more than 9 (13 for extreme temperature conditions) if the measurements are on different frequency bands.
- d) For step 105, of the reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 6 if the measurements are on the same or on different RF channel within the same frequency band and no more than 10 (14 for extreme temperature conditions) if the measurements are on different frequency bands.

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3A.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3B Transport channel BLER

Void.

8.7.3C UE transmitted power

8.7.3C.1 Definition and applicability

The UE transmitted power absolute accuracy is defined as difference between the UE reported value and the UE transmitted power measured by test system. The reference point for the UE transmitted power shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3C.2 Minimum requirements

The measurement period in CELL_DCH state is 1 slot.

Table 8.7.3C.2.1 UE transmitted power absolute accuracy

Parameter		Accuracy [dB]		
Farameter	1		PUEMAX 21dBm	
UE transmitted power=PUEMAX	dBm	+1/-3	±2	
UE transmitted power=PUEMAX-1	dBm	+1.5/-3.5	±2.5	
UE transmitted power=PUEMAX-2	dBm	+2/-4	±3	
UE transmitted power=PUEMAX-3	dBm	+2.5/-4.5	±3.5	
PUEMAX-10≤UE transmitted power <puemax-3< td=""><td>dBm</td><td>+3/-5</td><td>±4</td></puemax-3<>	dBm	+3/-5	±4	

NOTE 1: User equipment maximum output power, PUEMAX, is the maximum output power level without tolerance defined for the power class of the UE in TS 25.101 [1] section 6.2.1.

NOTE 2: UE transmitted power is the reported value.

For each empty slot created by compressed mode, no value shall be reported by the UE L1 for those slots.

The normative reference for this requirement is TS 25.133 [2] clause 9.1.6.

8.7.3C.3 Test purpose

The purpose of this test is to verify that for any reported value of UE Transmitted Power in the range PUEMAX to PUEMAX-10 that the actual UE mean power lies within the range specified in clause 8.7.3C.2.

8.7.3C.4 Method of test

8.7.3C.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS to the UE antenna connector as shown in figure A.1.

The test parameters are given in Table 8.7.3C.4.1 and 8.7.3C.4.2 below. In the measurement control information it shall be indicated to the UE that periodic reporting of the UE transmitted power measurement shall be used.

Table 8.7.3C.4.1: General test parameters for UE transmitted power

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement	As specified in clause C.3.1
•		Channel 12.2 kbps	
Power Control		On	
Target quality value on DTCH	BLER	0.01	

Table 8.7.3C.4.2: Cell Specific parameters for UE transmitted power

Unit	Cell 1
dB	-10
dB	-12
dB	-12
dB	-15
dB	Note1
dB	Note 2
dB	0
dBm/3.84 MHz	-70
dB	-13
	AWGN
	dB dB dB dB dB dB dB dB

Note 1: The DPCH level is controlled by the power control loop

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or.}

8.7.3C.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters are set up according to table 8.7.3C.4.1 and 8.7.3C.4.2. Set the UE power and Maximum allowed UL TX power to the maximum power for the UE power class.

- 2) SS shall send continuously during the entire test Up power control commands to the UE.
- 3) SS shall transmit the MEASUREMENT CONTROL message as defined in the specific message contents below.
- 4) Decode the UE Transmitted power reported by the UE in the next available MEASUREMENT REPORT message.
- 5) Measure the mean power of the UE over a period of one timeslot.
- 6) Steps 4 and 5 shall be repeated 1000 times.
- 7) Decrease the Maximum allowed UL TX power by 1 dB. The SS shall transmit the PHYSICAL CHANNEL RECONFIGURATION message, as defined in the specific message contents below.
- 8) SS shall wait for the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE.
- 9) Repeat from step 4) until the Maximum allowed UL TX Power reaches PUEMAX-10.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of
	MAC-I for this message and
	writes to this IE. The first/
	leftmost bit of the bit string
	contains the most significant
	bit of the MAC-I.
-RRC message sequence number	SS provides the value of this
	IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	5
-Measurement Command	SETUP
-CHOICE Measurement type	UE Internal measurement
-UE Internal measurement quantity	
-Measurement quantity	UE Transmitted power
-Filter coefficient	0
-UE Internal reporting quantity	
-UE Transmitted power	TRUE
-CHOICE mode	FDD
-UE Rx-Tx time difference	FALSE
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250
-Measurement Reporting Mode	AMBLO
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-AdditionalMeasurementList	Not Present
Physical channel information elements	Not Droppet
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message:

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on PIXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	5
Measured Results	
- CHOICE Measurement	UE Internal measured results
- Choice mode	FDD
- UE Transmitted power	Checked that this IE is present
- UE Rx-Tx report entries	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

PHYSICAL CHANNEL RECONFIGURATION message:

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	At the first time this value is set to PUEMAX-1.
	After the second time this value is decreased
	with 1 dB from previous value.
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	Not Present
-Downlink information per radio link list	Not Present

8.7.3C.5 Test requirements

Compare each of the UE transmitted power reports against the following mean power measurement. At least 90% of the mean power measurements for any one value of reported UE transmitted power shall be within the range specified in table 8.7.3C.5.

NOTE It is not expected or required that the distribution of UE transmitted power reports is even for the 11 possible reported values.

_ ,		Mean Power range [dB]		
Parameter	Unit		PUEMAX 21dBm	
UE transmitted power=PUEMAX	dBm	+1.7/-3.7	±2.7	
UE transmitted power=PUEMAX-1	dBm	+2.2/-4.2	±3.2	
UE transmitted power=PUEMAX-2	dBm	+2.7/-4.7	±3.7	
UE transmitted power=PUEMAX-3	dBm	+3.2/-5.2	±4.2	
UE transmitted power=PUEMAX-4	dBm	+3.7/-5.7	±4.7	
UE transmitted power=PUEMAX-5	dBm	+3.7/-5.7	±4.7	
UE transmitted power=PUEMAX-6	dBm	+3.7/-5.7	±4.7	
UE transmitted power=PUEMAX-7	dBm	+3.7/-5.7	±4.7	
UE transmitted power=PUEMAX-8	dBm	+3.7/-5.7	±4.7	
UE transmitted power=PUEMAX-9	dBm	+3.7/-5.7	±4.7	
UE transmitted power=PUEMAX-10	dBm	+3.7/-5.7	±4.7	

Table 8.7.3C.5 UE transmitted power test requirements

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4 SFN-CFN observed time difference

8.7.4.1 Intra frequency measurement requirement

8.7.4.1.1 Definition and applicability

The intra frequency SFN-CFN observed time difference is defined as the SFN-CFN observed time difference from the active cell to a neighbour cell that is in the same frequency. This measurement is specified in clause 5.1.8 of TS 25.215 [22].

The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.4.1.2 Minimum requirements

The accuracy requirement in table 8.7.4.1.1 is valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114 dBm$ for Band I.

CPICH_RSCP1,2 $|_{dBm} \ge -112 dBm$ for Band II,

CPICH_RSCP1,2 $|_{dBm} \ge -111 dBm$ for Band III.

$$\left| CPICH \ _RSCP1 \right|_{in\ dBm} - CPICH \ _RSCP2 \Big|_{in\ dBm} \right| \le 20dB$$

$$\begin{split} & \frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dB} \leq 20dB \\ & \frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{P-CCPCH_E_c}{I_{or}}\right)_{in\ dB} \text{ is low enough to ensure successful SFN decoding.} \end{split}$$

Table 8.7.4.1.1 SFN-CFN observed time difference intra frequency accuracy

				Conditions	
Parameter	Unit	Accuracy [chip]	lo [dBm/3.84 MHz]		
			Band I	Band II	Band III
SFN-CFN observed time difference	chip	± 1	-9450	-9250	-9150

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.7.1 and A.9.1.4.2.

8.7.4.1.3 Test Purpose

The purpose of this test is to verify that the SFN-CFN observed time difference measurement accuracy is within the specified limits in the clause 8.7.4.1.2. This measurement is for handover timing purposes to identify active cell and neighbour cell time difference.

8.7.4.1.4 Method of test

8.7.4.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

In this case all cells are in the same frequency. Table 8.7.4.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

De		I I m i 4	Te	st 1	Test 2		Tes	st 3
Pa	rameter	Unit	Cell 1 Cell 2		Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Ch	nannel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Id	or	dB	-1	10	-1	0	-1	0
PCCPCH_E	c/lor	dB	-1	12	-1	2	-1	2
SCH_Ec/lor		dB	-1	12	-1	2	-1	2
PICH_Ec/lor		dB	-1	15	-1	5	-1	5
DPCH_Ec/lo	r	dB	-1	15	-1	5	-1	5
OCNS_Ec/lo	r	dB	-1	.11	-1.11 -1.1		11	
Îor/loc		dB	10).5	10.5 10.5).5	
loc		dBm/ 3.84 MHz		<i>dB</i> = <i>loc,</i> te 1	, Io –13.7 dB = Ioc, Io –13.7 dE Note 1 Note		,	
	Band I						-9)4
lo	Band II	dBm/3.84 MHz	-50	-72		-9)2	
	Band III						-91	
SFN-CFN ob difference as 25.215 [22]	served time specified in TS	chip	x Note 2					
Propagation	condition	-	AWGN AWGN AWG		GN			

Table 8.7.4.1.2: SFN-CFN observed time difference Intra frequency test parameters

NOTE 1: loc level shall be adjusted according the total signal power lo at receiver input and the geometry factor Îor/loc.

NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters "OFF" and "Tm" as specified in TS 25.215 [22]

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.4.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.1.4.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT message.
- 4) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.8 of TS 25.215 [22]. This value shall be compared to the actual SFN-CFN observed time difference value for each MEASUREMENT REPORT message.
- 5) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for intra frequency measurement

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	Not Present
- Intra-frequency measurement objects list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	TOUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TRUE FDD
-CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells	FALSE
-Cell synchronisation information reporting	TALOL
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FDD
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	Not Present
-Maximum number of reported cells	Report all active set cells + cells within
-Measurement validity	monitored set on used frequency
-CHOICE report criteria	Virtual/active set cells + 2
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria
	Infinity
	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.4.1.5 Test requirements

Table 8.7.4.1.3 SFN-CFN observed time difference intra frequency accuracy

			Conditions lo [dBm/3.84 MHz]		
Parameter	Unit	Accuracy [chip]			
		, , , , ,	Band I	Band II	Band III
SFN-CFN observed time difference	chip	± 1.5	-9450	-9250	-9150

Table 8.7.4.1.4: SFN-CFN observed time difference Intra frequency test parameters

Parameter	Unit	Test 1	Test 2	Test 3	
Farameter	Offic	Cell 1 Cell 2	Cell 1 Cell 2	Cell 1 Cell 2	
UTRA RF Channel number		Channel 1	Channel 1	Channel 1	
CPICH_Ec/lor	dB	-10	-10	-10	
PCCPCH_Ec/lor	dB	-12	-12	-12	
SCH_Ec/lor	dB	-12	-12	-12	
PICH_Ec/lor	dB	-15	-15	-15	
DPCH_Ec/lor	dB	-15	-15	-15	
OCNS_Ec/lor	dB	-1.11	-1.11	-1.11	
Îor/loc	dB	10.8	10.8	10.8	
Band I				-106.7	
loc Band II	dBm/ 3.84 MHz	Bm/ 3.84 MHz	-85.7	-104.7	
Band III				-103.7	
Band I				-92.7	
Io, Note 1 Band II	dBm/3.84 MHz	-51.3	-71.7	-90.7	
Band III				-89.7	
SFN-CFN observed time		X			
difference as specified in TS	chip		X Note 2		
25.215 [22]		Note 2			
Propagation condition	-	AWGN AWGN AWGN			

NOTE 1: lo level has been calculated from other parameters for information purposes. It is not a settable parameter itself.

NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters "OFF" and "Tm" as specified in TS 25.215 [22].

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The accuracy of the SFN-CFN observed time difference measurement value calculated from the reported "OFF" and "Tm" values shall meet the requirements in table 8.7.4.1.5.

Table 8.7.4.1.5: SFN-CFN observed time difference measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3			
Lowest reported value	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)			
Highest reported value	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)			
SFN-CFN_TIME (X) is the reported value for the actual SFN-CFN observed time difference value as defined in						
table 8.7.4.1.4						

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4.2 Inter frequency measurement requirement

8.7.4.2.1 Definition and applicability

The inter frequency SFN-CFN observed time difference is defined as the SFN-CFN time difference from the active cell to a neighbour cell that is in a different frequency. This measurement is specified in clause 5.1.8 of TS 25.215 [22].

The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.4.2.2 Minimum requirements

The accuracy requirement in table 8.7.4.2.1 is valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114 dBm$ for Band I.

CPICH_RSCP1,2 $|_{dBm} \ge -112 \text{ dBm for Band II}$,

CPICH_RSCP1,2 $|_{dBm} \ge -111 dBm$ for Band III.

$$|CPICH _RSCP1|_{in \ dBm} - CPICH _RSCP2|_{in \ dBm}| \le 20dB$$

| Channel 1_ $Io|_{dBm/3.84 \text{ MHz}}$ -Channel 2_ $Io|_{dBm/3.84 \text{ MHz}}$ | $\leq 20 \text{ dB}$.

$$\left. \frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} \right|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}} \right)_{in\ dB} \le 20dB$$

Table 8.7.4.2.1 SFN-CFN observed time difference inter frequency accuracy

		Acquirocy	Conditions Io [dBm/3.84 MHz]				
Parameter	Parameter Unit Accuracy [chip]						
			Band I	Band II	Band III		
SFN-CFN observed time difference	chip	± 1	-9450	-9250	-9150		

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.7.2 and A.9.1.4.2.

8.7.4.2.3 Test purpose

The purpose of this test is to verify that the SFN-CFN observed time difference measurement accuracy is within the specified limits in the clause 8.7.4.2.2. This measurement is for handover timing purposes to identify active cell and neighbour cell time difference.

8.7.4.2.4 Method of test

8.7.4.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

In this test case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256". Table 8.7.4.2.2 defines the limits of signal strengths and code powers, where the requirement is applicable.

AWGN

-)aramatar	Unit	Te	st 1	Tes	st 2	Tes	st 3	
Parameter		Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2	
CPICH_Ec	/lor	dB		0	-10		-10		
PCCPCH_I	Ec/lor	dB		12	-1	12	-12		
SCH_Ec/lo	or	dB		12	-1	12	-1	12	
PICH_Ec/ld	or	dB	-15		-15		-15		
DPCH_Ec/	lor	dB	-15		-15		-15		
OCNS_Ec/	'lor	dB	-1.11		-1.11		-1.11		
Îor/loc		dB	10.1		10.1		10.1		
loc		dBm/ 3.84 MHz	lo −10.6	Io -10.6 dB = Ioc,		dB = loc,	lo -10.6	dB = loc,	
100		UDITI/ 3.04 IVII IZ	No	Note 1		Note 1		Note 1	
Band I							-6	94	
lo Band II		dBm/3.84 MHz	-50		-72		-6	-92	
Band III							-6	91	
S FN-CFN observed time difference as specified in TS		chip	X Note 2						

Table 8.7.4.2.2: SFN-CFN observed time difference Inter frequency tests parameters

NOTE 1: *loc* level shall be adjusted in each carrier frequency according the total signal power *lo* at receiver input and the geometry factor *lor/loc*.

AWGN

AWGN

NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters "OFF" and "Tm" as specified in TS 25.215 [22].

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.4.2.4.2 Procedure

25.215 [22]

Propagation condition

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.2.4.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.8 of TS 25.215 [22]. Note that according to TS 25.215 [22] UE is always reporting "OFF" parameter to be zero. This value shall be compared to the actual SFN-CFN observed time difference value for each MEASUREMENT REPORT message taking into account that "OFF" parameter is set to zero.
- 7) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.2.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 5) and 6) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.2.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 5) and 6) above are repeated.
- 8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for inter frequency measurement

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
- moodage dan omedaen oode	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	Not Decorat
-URA identity	Not Present
RB information elements	Not Decemb
-Downlink counter synchronisation info	Not Present
PhyCH information elements	Not Droppet
-Frequency info	Not Present
Uplink radio resources	Not Present
-Maximum allowed UL TX power - CHOICE channel requirement	Not Present
Downlink radio resources	Not Flesent
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	Trock Frozenic
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	EDD magazinamant
-TGMP -TGPRC	FDD measurement
-TGSN	Infinity 4
-TG1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	В
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present

-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message for Inter frequency measurement

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	
-Inter-frequency cell info list	<u>_</u>
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	
-Inter-frequency measurement quantity	Inter-frequency reporting criteria
-CHOICE reporting criteria -Filter coefficient	
-Filter Coefficient -CHOICE mode	0 FDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	CHOTTKOCI
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	
	Report cells within monitored set on non-used
-Maximum number of reported cells	frequency
-Measurement validity	2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
Dhysical shaped information of the state of	500 ms
Physical channel information elements	Not Proport
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.4.2.5 Test requirements

Table 8.7.4.2.3 SFN-CFN observed time difference inter frequency accuracy

Parameter Unit Accuracy [chip]			Conditions lo [dBm/3.84 MHz]				
		Band I	Band II	Band III			
SFN-CFN observed time difference	chip	± 1.5	-9450	-9250	-9150		

Table 8.7.4.2.4: SFN-CFN observed time difference Inter frequency tests parameters

Poro	Parameter		Tes	st 1	Tes	st 2	Test 3	
Fala			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/lor		dB	-1	0	-1	0	-10	
PCCPCH_Ec/I	or	dB	-1	2	-1	2	-1	12
SCH_Ec/lor		dB	-1	2	-1	2	-1	12
PICH_Ec/lor		dB	-1	5	-1	5	-1	15
DPCH_Ec/lor		dB	-1	5	-1	5	-1	15
OCNS_Ec/lor		dB	-1.	11	-1.	11	-1.	.11
Îor/loc		dB	10).4	10.4		10.4	
	Band I						103.5	
loc	Band II	dBm/ 3.84 MHz	-62.1		-82.6		101.5	
	Band III						100.5	
	Band I						-92.7	
Io, Note 1	Band II	dBm/3.84 MHz	-51.3		-71.8		-90.7	
	Band III						-89.7	
SFN-CFN observed time difference as specified in TS 25.215 [22]		chip	x Note 2					
Propagation condition -		-	AWGN AWGN A			AW	'GN	
NOTE 1: Io level has been calculated from other parameters for information purposes. It is not a settable parameter itself.						,,		
NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters "OFF" and "Tm" as specified in TS 25.215 [22].						m″ as		

The accuracy of the SFN-CFN observed time difference measurement value calculated from the reported "OFF" and "Tm" values shall meet the requirements in table 8.7.4.2.5.

2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests

Table 8.7.4.2.5: SFN-CFN observed time difference measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3			
Lowest reported value	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)			
Highest reported value	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)			
SFN-CFN_TIME (X) is the reported value for the actual SFN-CFN observed time difference value as defined in						
table 8.7.4.2.4 taking into account that "OFF" parameter is set to zero.						

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

SFN-SFN observed time difference 8.7.5

8.7.5.1 SFN-SFN observed time difference type 1

8.7.5.1.1 Definition and applicability

This measurement is specified in clause 5.1.9 of TS 25.215 [22]. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.5.1.2 Minimum requirements

The accuracy requirement in table 8.7.5.1.1 is valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114 \ dBm$ for Band I.

CPICH RSCP1,2 $|_{dBm} \ge -112$ dBm for Band II,

CPICH_RSCP1,2 $|_{dBm} \ge -111 dBm$ for Band III.

$$|CPICH _RSCP1|_{in \ dBm} - CPICH _RSCP2|_{in \ dBm}| \le 20dB$$

$$\frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dB} \le 20dB$$

$$\frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{P - CCPCH - E_c}{I_{or}}\right)_{in\ dB} = \left(\frac{P - CCPCH - E_c}{I_{or}}\right)_{in\ dB} \text{ is low enough to ensure successful SFN decoding.}$$

Table 8.7.5.1.1 SFN-SFN observed time difference type 1 measurement accuracy

			Conditions				
Parameter	Unit Accuracy [chip]			lo [dBm/3.84 MHz]			
			Band I	Band II	Band III		
SFN-SFN observed time difference type1	chip	± 1	-9450	-9250	-9150		

The normative reference for this requirement is TS 25.133 [2] clause 9.1.8.1.1 and A.9.1.5.1.2.

8.7.5.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-SFN observed time difference type 1 is within the limit specified in clause 8.7.5.1.2. This measurement is for identifying time difference between two cells.

8.7.5.1.4 Method of test

8.7.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

1) Connect SS to the UE antenna connector as shown in figure A.1

2) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.3. The RF parameters for Test 1 are set up according to table 8.7.5.1.2.

In this case all cells are in the same frequency. Table 8.7.5.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table 8.7.5.1.2: SFN-SFN observed time difference type 1 Intra frequency test parameters

Parameter	Unit	Tes	st 1	Tes	Test 2		Test 3	
Farailletei	Oilit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Chan	Channel 1		Channel 1		nel 1	
CPICH_Ec/lor	dB	-1	0	-1	-10 -		10	
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	12	
SCH_Ec/lor	dB	-1	-12		-12		12	
PICH_Ec/lor	dB	-1	5	-1	5	-1	15	
S-CCPCH_Ec/lor	dB	-12		-12		-12		
OCNS_Ec/lor	dB	-1.29		-1.29		-1.29		
Îor/loc	dB	10.5		10.5		10.5		
loc	dBm/ 3.84 MHz	lo -13.7 dB = loc,		lo -13.7 dB = loc,		lo -13.7 dB = loc,		
IOC	UDIII/ 3.04 IVITZ	Note 1		Note 1		Note 1		
Band I		-50 -72			-94			
lo Band II	dBm/3.84 MHz			-72		-92		
Band III						-6	91	
SFN-SFN observed time		X Note 2						
difference type 1 as specified	chip			X Note 2				
in TS 25.215 [22				NOU	G Z			
Propagation condition	-	AW	AWGN AWGN		AWGN			

NOTE 1: *loc* level shall be adjusted according the total signal power *lo* at receiver input and the geometry factor *lor/loc*.

NOTE2: For example, x= 491520 or 9830399. This is a calculated value using the parameters "OFF" and "Tm" as specified in TS 25.215 [22].

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.5.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT message.
- 3) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual SFN-SFN observed time difference type 1 value for each MEASUREMENT REPORT message.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Editor's note: UE behaviour is not specified for the current MEASUREMENT CONTROL message and therefore it is TBD.

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	N · B
-Additional measurement list-CHOICE	Not Present
Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	Not Droppet
- Intra-frequency measurement objects list	Not Present
-Intra-frequency measurement quantity -Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	CHOTTOO
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells	FALSE
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FDD
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	Not Present
-Maximum number of reported cells	Report all active set cells + cells within
-Measurement validity	monitored set on used frequency
-CHOICE report criteria	Virtual/active set cells + 2
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria
	Infinity
	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.5.1.5 Test requirements

Table 8.7.5.1.3 SFN-SFN observed time difference type 1 measurement accuracy

Parameter	Unit	Accuracy [chip]	Conditions Io [dBm/3.84 MHz] Band I Band II Band] Band III
SFN-SFN observed time difference type1	chip	± 1.5	-9450	-9250	-9150

Table 8.7.5.1.4: SFN-SFN observed time difference type 1 Intra frequency test parameters

Param	otor	Unit	Te	st 1	Test 2		Tes	Test 3		
raiaiii	etei	Oilit	Cell 1	Cell 2	Cell 1	Cell 2		Cell 2		
UTRA RF Chann	el number		Char	nel 1	Char	nel 1	Char	nel 1		
CPICH_Ec/lor		dB	-1	10	-1	10	-1	10		
PCCPCH_Ec/lor		dB		12	-1	12	-1	12		
SCH_Ec/lor		dB	-1	12	-1	12	-1	12		
PICH_Ec/lor		dB		15	-1	15	-1	15		
S-CCPCH_Ec/loi	•	dB		12	-1	12	-1	12		
OCNS_Ec/lor		dB	-1.29		-1.29		-1.	-1.29		.29
Îor/loc		dB	10).8	10.8		10.8			
	Band I						-106.7			
loc	Band II	dBm/ 3.84 MHz	-65.	3 dB	-8	-12 -1.29 10.8 -85.7	-10	14.7		
	Band III						-10	3.7		
	Band I						-92	2.7		
Io, Note 1	Band II	dBm/3.84 MHz	-5	1.3	-7	1.7	-12 -15 -15 -12 -1.2! 10.8 -106 -104 -103 -92. -90.	0.7		
	Band III						-89	9.7		
SFN-SFN observ	ed time					.,				
difference type 1 in TS 25.215 [22]		chip	X Note 2							
Propagation cond	dition	-	AW	'GN	AW	'GN	AW	'GN		

NOTE 1: lo level has been calculated from other parameters for information purposes. It is not a settable parameter itself.

NOTE2: For example, x= 491520 or 9830399. This is a calculated value using the parameters "OFF" and "Tm" as specified in TS 25.215 [22].

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for SFN-SFN observed time difference type 1 accuracy shall meet the requirements in table 8.7.5.1.5.

Table 8.7.5.1.5: SFN-SFN observed time difference type 1 measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3			
Lowest reported value	T1_SFN-SFN_TIME_(X - 2)	T1_SFN-SFN_TIME_(X - 2)	$T1_SFN-SFN_TIME_(X-2)$			
Highest reported value	$T1_SFN-SFN_TIME_(X + 2)$	$T1_SFN-SFN_TIME_(X + 2)$	$T1_SFN-SFN_TIME_(X + 2)$			
T1_SFN-SFN_TIME_(X) is the reporting value corresponding to SFN-SFN observed time difference type 1 measured						
by system simulator	-	-				

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.5.2 SFN-SFN observed time difference type 2

Void.

8.7.6 UE Rx-Tx time difference

8.7.6.1 UE Rx-Tx time difference type 1

8.7.6.1.1 Definition and applicability

The UE Rx-Tx time difference is defined as the time difference between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time) of the downlink DPCH frame from the measured radio link. The reference point of the UE Rx-Tx time difference shall be the antenna connector of the UE. This measurement is specified in clause 5.1.10 of TS 25.215.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.6.1.2 Minimum requirements

Table 8.7.6.1.1 UE Rx-Tx time difference type 1 measurement accuracy

		Acquirocv		Conditions		
Parameter	Unit	Accuracy	lo [dBm/3.84MHz]			
		[chip]	Band I	Band II	Band III	
UE RX-TX time difference	chip	± 1.5	-9450	-9250	-9150	

The normative reference for this requirement is TS 25.133 [2] clause 9.1.9.1.1 and A.9.1.6.1.2.

8.7.6.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of Rx-Tx time difference is within the limit specified in clause 8.7.6.1.2. This measurement is used for call setup purposes to compensate propagation delay of DL and UL.

8.7.6.1.4 Method of test

8.7.6.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS to the UE antenna connector as shown in figure A.1

Table 8.7.6.1.2: UE Rx-Tx time difference type 1 intra frequency test parameters

Unit	Test 1	Test 2	Test 3	
Onit	Cell 1	Cell 1	Cell 1	
	Channel 1	Channel 1	Channel 1	
dB	-10	-10	-10	
dB	-12	-12	-12	
dB	-12	-12	-12	
dB	-15	-15	-15	
dB	-15	-15	-15	
dB	-1.11	-1.11	-1.11	
dB	10.5	10.5	10.5	
dDm/2.04.MU=	lo -10.9 dB = loc,	lo -10.9 dB = loc,	lo -10.9 dB = loc,	
UDIII/ 3.04 IVITZ	Note 1	Note 1	Note 1	
	-94			
dBm/3.84 MHz	-92	-72	-50	
	-91			
-	AWGN	AWGN	AWGN	
	dB dBM/3.84 MHz	Cell 1 Channel 1 dB -10 dB -12 dB -15 dB -15 dB -1.11 dB 10.5 dBm/ 3.84 MHz Io -10.9 dB = loc, Note 1 -94 -94 -91 -91 - AWGN	Cell 1 Cell 1 Channel 1 Channel 1 Channel 1 dB -10 -10 dB -12 -12 dB -15 -15 dB -15 -15 dB -1.11 -1.11 dB 10.5 10.5 dBm/ 3.84 MHz Io -10.9 dB = loc, Note 1 dBm/3.84 MHz -94 -92 -91 -72	

NOTE 1: loc level shall be adjusted according the total signal power spectral density lo at receiver input and the geometry factor lor/loc.

8.7.6.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters are set up according to table 8.7.6.1.4 for Test 1.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT message.
- 4) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The comparison should be repeated 1000 times.
- 5) The RF parameters are set up according table 8.7.6.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period.
- 6) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The comparison should be repeated 1000 times.
- 7) The RF parameters are set up according table 8.7.6.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period.
- 8) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The comparison should be repeated 1000 times.
- 9) SS shall transmit RRC CONNECTION RELEASE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 2):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of
	MAC-I for this message and
	writes to this IE. The first/
	leftmost bit of the bit string
	contains the most significant
	bit of the MAC-I.
-RRC message sequence number	SS provides the value of this
	IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
- Additional measurements list	Not Present
-Measurement Reporting Mode	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	UE Internal measurement
-CHOICE Measurement type	
-UE Internal measurement quantity	FDD
-CHOICE mode	UE Rx-Tx time difference
-Measurement quantity	0
-Filter coefficient	
-UE Internal reporting quantity	
-UE Transmitted power	FALSE
-CHOICE mode	FDD
-UE Rx-Tx time difference	TRUE
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250
-Measurement Reporting Mode	AMBLO
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
- CHOICE Measurement	UE Internal measured results
- Choice mode	FDD
- UE Transmitted power	Checked that this IE is absent
- UE Rx-Tx report entries	
- Primary CPICH info	Checked that this IE is present
- UE Rx-Tx time difference type 1	Checked that this IE is present
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information - Primary CPICH info	Checked that this IE is absent
- Primary scrambling code	100
- CPICH Ec/N0	Checked that this IE is absent
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is absent
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

8.7.6.1.5 Test requirements

Table 8.7.6.1.3 UE Rx-Tx time difference type 1 measurement accuracy

				Conditions	
Parameter	Unit	Accuracy [chip]	lo [dBm/3.84MHz]		
			Band I	Band II	Band III
UE RX-TX time difference	chip	± 2.0	-9450	-9250	-9150

Table 8.7.6.1.4: UE Rx-Tx time difference type 1 intra frequency test parameters

Pos	rameter	Unit	Test 1	Test 2	Test 3	
Pai	rameter	Unit	Cell 1	Cell 1	Cell 1	
UTRA RF C	hannel number		Channel 1	Channel 1	Channel 1	
CPICH_Ec/	lor	dB	-10	-10	-10	
PCCPCH_E	c/lor	dB	-12	-12	-12	
SCH_Ec/loi	f	dB	-12	-12	-12	
PICH_Ec/lo	r	dB	-15	-15	-15	
DPCH_Ec/I	or	dB	-15	-15	-15	
OCNS_Ec/I	or	dB	-1.11	-1.11	-1.11	
Îor/loc		dB	10.5	10.5	10.5	
	Band I		-103.6			
loc	Band II	dBm/ 3.84 MHz	-101.6	-82.9	-62.2	
	Band III		-100.6			
	Band I		-92.7			
	Band II	dBm/3.84 MHz	-90.7	-72	-51.3	
	Band III		-89.7			
Propagation	condition	-	AWGN	AWGN	AWGN	

NOTE 1: loc level shall be adjusted according the total signal power spectral density lo at receiver input and the geometry factor lor/loc.

The reported values for UE Rx-Tx time difference accuracy shall meet the requirements in table 8.7.6.1.5.

Table 8.7.6.1.5: UE Tx-Rx time difference type 1 measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3				
Lowest reported value	RX-TX_TIME_(X – 2)	RX-TX_TIME_(X - 2)	$RX-TX_TIME_(X-2)$				
Highest reported value	$RX-TX_TIME_(X + 2)$	$RX-TX_TIME_(X + 2)$	$RX-TX_TIME_(X + 2)$				
RX-TX_TIME_(X) is the reporting value corresponding to UE Rx-Tx time difference measured by system							
simulator							

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.6.2 UE Rx-Tx time difference type 2

Void

8.7.7 Observed time difference to GSM cell

Void

8.7.8 P-CCPCH RSCP

8.7.8.1 Absolute measurement accuracy

8.7.8.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured in an UTRA TDD cell on one frequency compared to the actual P-CCPCH RSCP power of that cell on the same frequency.

The requirements and this test apply only to UE supporting both UTRA FDD and UTRA TDD.

8.7.8.1.2 Minimum Requirements

The accuracy requirement in table 8.7.8.1.1 is valid under the following conditions:

P-CCPCH_RSCP ≥ -102 dBm,

$$\frac{I_o}{(\hat{I}_{or})_{in,dR}} - \left(\frac{P - CCPCH - E_c}{I_{or}}\right)_{in,dR} \le 8dB$$

Table 8.7.8.1.1: P-CCPCH RSCP inter frequency absolute accuracy

		Accura	Accuracy [dB]		
Parameter	Unit	Normal conditions	Extreme conditions	lo [dBm/3.84 MHz]	
P-CCPCH RSCP	dBm	± 6	± 9	-9470	
F-CCFCH_R3CF	dBm	± 8	± 11	-7050	

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.11.1 and A.9.1.8.

8.7.8.1.3 Test purpose

The purpose of this test is to verify that the P-CCPCH RSCP absolute measurement accuracy is within the specified limits.

8.7.8.1.4 Method of test

8.7.8.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 is a UTRA FDD cell and cell 2 is a UTRA TDD cell. The second Beacon timeslot shall be provided for cell 2 in timeslot 8. Compressed mode as specified in TS 25.101 [1] section A.5, set 3 of table A.22, is applied. TGPRC and TGCFN shall be set to "Infinity" and "(Current CFN + (256 – TTI/10msec)) mod 256". P-CCPCH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table 8.7.8.1.2.

Table 8.7.8.1.2: P-CCPCH RSCP inter frequency tests parameters

Parameter	Unit	Te	st 1		Te	st 2	
Parameter	Offic	Cell 1	Cell	2	Cell 1	Ce	II 2
DL timeslot number		n.a.	0	8	n.a.	0	8
UTRA RF Channel number		Channel 2	Chann	nel 1	Channel 2	Chan	nel 1
CPICH_Ec/lor	dB	-10	n.a	١.	-10	n.	a.
P-CCPCH_Ec/lor	dB	-12	-3	n.a.	-12	-3	n.a
SCH_Ec/lor	dB	-12	-9		-12	-:	9
SCH_t _{offset}		n.a.	5 n.a.		n.a.	5	
PICH_Ec/lor	dB	-15	n.a.	-3	-15	n.a.	-3
DPCH_Ec/lor	dB	-15	n.a	١.	-15	n.	a.
OCNS_Ec/lor	dB	-1.11	-3.1	2	-1.11	-3.	12
loc	dBm/ 3.84 MHz	-60	-57.	-57.7 -84		-84	1.7
Îor/loc	dB	9.54	7		0	3	3
P-CCPCH RSCP, Note 1	dBm	n.a.	-53.7	n.a.	n.a.	-84.7	n.a.
CPICH RSCP, Note 1	dBm	-60.46	n.a	١.	-94	n.	a.
Io, Note 1	dBm/3.84 MHz	-50	-50)	-81	-8	80
Propagation condition	-	AW	'GN		AV	VGN	

Note 1: P-CCPCH RSCP, CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed, test parameters for test 2 shall be set within 5 seconds so that the UE does not lose the Cell 2 in between the test.

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.8.1.2.

8.7.8.1.4.2 Procedure

- 1) SS shall transmit the PHYSICAL CHANNEL RECONFIGURATION message.
- 2) UE shall transmit the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 3) SS shall transmit the MEASUREMENT CONTROL message.
- 4) UE shall transmit periodically MEASUREMENT REPORT messages.
- 5) SS shall check P-CCPCH RSCP values of Cell 2 in the MEASUREMENT REPORT messages. P-CCPCH RSCP power level of Cell 2 reported by the UE shall be compared to the actually set P-CCPCH RSCP value of Cell 2 for each MEASUREMENT REPORT message.
- 6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.8.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated.
- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for inter frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	Not Droppet
-CN Information info	Not Present
UTRAN mobility information elements -URA identity	Not Present
RB information elements	INUL FIESEIIL
-Downlink counter synchronisation info	Not Present
PhyCH information elements	Not i lesent
-Frequency info	Not Present
Uplink radio resources	Not i resent
-Maximum allowed UL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
Transmission can nettern assumes	
-Transmission gap pattern sequence	
configuration parameters -TGMP	TDD measurement
-TGPRC	Infinity
-TGSN	10
-TGL1	10
-TGL2	Not Present
-TGD	0
-TGPL1	11
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
 Downlink compressed mode method 	Puncturing
-Uplink compressed mode method	SF/2
-Downlink frame type	A
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present Not Present
-TX Diversity Mode -SSDT information	Not Present Not Present
-טטטווווטווווומווטוו	INOT LIESELL

-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message for inter frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	monar counter.
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	·
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	
-Inter-frequency cell info list	_
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included.
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	Inter frequency reporting criteria
-CHOICE reporting criteria -Filter coefficient	Inter-frequency reporting criteria 0
-CHOICE mode	TDD
-Measurement quantity for frequency quality	Primary CCPCH RSCP
estimate	1 milary der errikeer
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting	
indicator	FALSE
-Cell Identity reporting indicator	
-CHOICE mode	FALSE
-Timeslot ISCP reporting indicator	TDD
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	TRUE
-Reporting cell status -CHOICE reported cell	FALSE
-Choice reported cell	Report cells within monitored set on non-used frequency
-Maximum number of reported cells	1 2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.8.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.8.1.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #24 Toronto, Canada, 26th - 30th July 2004

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	CHANGE REQUEST										
*	34.121 CR 398										
For <u>HELP</u> on us	ng this form, see bottom of this page or look at the pop-up text over the ℜ symbols.										
Proposed change a	fects: UICC apps第 ME X Radio Access Network Core Network										
Title:	Correction to Cell Re-selection in CELL_PCH and URA_PCH test cases										
Source: #	NEC										
Work item code: ₩	TEI Date: 第 14/07/2004										
Category:	Release: # Rel-5 Jose one of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Petailed explanations of the above categories can be found in 3GPP TR 21.900. Release: # Rel-5 Use one of the following releases: R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)										
Reason for change Summary of chang	# The test period T1 has to be aligned with 25.133 to allow enough time for the UE to search for the initially non-identified inter-frequency cell. ## Correction of test cases for Cell Re-selection in CELL_PCH and URA_PCH with										
	two frequencies present in the neighbour list: In TS 25.133 clauses A.5.6.2 and A.5.7.2 the test period T1 is set to 30 seconds in order to allow enough time for the UE to search for the initially non identified inter-frequency cell. 8.3.6.2.4.1: Changed T1 to 30 s to align with TS 25.133 Table A.5.7.										
	8.3.6.2.4.2: Modified test procedure to allow for the initial time period of 30 seconds.										
	8.3.7.2.4.1: Changed T1 to 30 s to align with TS 25.133 Table A.5.11.										
	8.3.7.2.4.2: Modified test procedure to allow for the initial time period of 30 seconds.										
Consequences if not approved:	光 Test case could not complete as specified.										
Clauses affected:	8.3.6.2.4.1 , 8.3.6.2.4.2 , 8.3.7.2.4.1 , 8.3.7.2.4.2										
Other specs affected:	Y N X Other core specifications X Test specifications ### Additional Content of the Co										

	Ī	X O&M Specifications	
Other comments:	\mathbb{H}	This CR is applicable for UE's supporti	ng Rel-99 or later.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked \(\mathcal{H} \) contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.6 Cell Re-selection in CELL_PCH

{Unchanged Sections are skipped here}

8.3.6.2 Two frequencies present in the neighbour list

8.3.6.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.6.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95%.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

 $T_{evaluateFDD}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by

the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.6.2 and A.5.6.2.

8.3.6.2.3 Test purpose

To verify that the UE meets the minimum requirement and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.6.2.4 Method of test

8.3.6.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.3.6.2.1 to 8.3.6.2.3. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms.

Table 8.3.6.2.1: General test parameters for Cell Re-selection in CELL_PCH, two freqs. in neighbour list

	Parameter	Unit	Value	Comment
initial	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
final condition	Active cell		Cell1	
Access Se - Persisten	rvice Class (ASC#0) ce value	-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle	length	S	1.28	The value shall be used for all cells in the test.
T1		S	<u>3015</u>	T1 need to be defined so that cell re- selection reaction time is taken into account.
T2		S	15	T2 need to be defined so that cell reselection reaction time is taken into account.

Table 8.3.6.2.2: Cell specific test parameters for Cell re-selection in CELL_PCH state, two freqs. in neighbour list

Parameter	Unit	Ce	ell 1	Ce	ell 2	Cel	I 3	Ce	II 4	Cell	15	Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Chan	nel 1	Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/lor	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/lor	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/lor	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/lor	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/lor	dB	-0.94	1	-0.94	1	-0.941		-0.941		-0.941		-0.941	ı
\hat{I}_{or}/I_{oc}	dB	-3.4	2.2	2.2	-3.4	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4
$\hat{I}_{or(Note1)}$	dBm	- 73.3 9	- 67.75	- 67.7 5	- 73.39	- 77.39	- 74.7 5	- 77.39	- 74.75	-74.75	- 77.39	- 74.7 5	- 77.39
I_{oc}	dBm/3.8 4 MHz	-70	-70										
CPICH_Ec/lo	dB	-16	-13	-13	-16	-20		-20		-20 -20			
Propagation Condition		AWGN											
Cell_selection_ and_reselection_ quality_measure		CPIC E₀/N₀		CPIC E _o /N ₀		CPICH E _c /N ₀	CPICH E ₀ /N ₀		CPICH E₀/N₀		CPICH E₀/N₀		
Qqualmin	dB		20		20	-2		-20		_		-20	
Qrxlevmin	dBm	-1	15	-1	15	-11	15	-115		-115		-115	
UE_TXPWR_ MAX_RACH	dBm	2	21	2	21	2	21		21			21	
Qoffset2 _{s, n}	dB	C1, C1, C1,	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	C2, C2, C2,	C1: 0 C3: 0 C4: 0 C5: 0 C6: 0	C3, C2: 0 C3, C4: 0 C3, C5: 0		C4, 0 C4, 0 C4, 0	C1: 0 C2: 0 C3: 0 C5: 0 C6: 0	C5, C C5, C C5, C C5, C C5, C	2: 0 3: 0 4: 0	C6, C6, C6,	C1: 0 C2: 0 C3: 0 C4: 0 C5: 0
Qhyst2	dB		0		0		1	()	0			0
Treselection	S		0		0	0	0 0		0			0	
Sintrasearch	dB	not	sent	not	sent	not sent		not	sent	not sent		not sent	
Sintersearch	dB	not	sent	not	sent	not s	ent	not sent		not sent		not sent	

The nominal Îor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured. Note 1

8.3.6.2.4.2 Procedure

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.6.2.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) A RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in CELL_PCH state on cell 2. The SS waits for this process to complete.
- 4) After 3015 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3,6.2.3.
- 5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.6.2.3.
- 8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.
- 10) After a total of 15 s from the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.6.2.3.
- 110) Steps 54 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.
- NOTE 1: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.
- NOTE_2: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	100

Contents of CELL UPDATE CONFIRM message for CELL_PCH

Information Element	Value/remark
RRC transaction identifier	0
Activation time	Not Present
RRC State indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

Contents of CELL UPDATE CONFIRM message for CELL_PCH

Information Element	Value/remark
RRC transaction identifier	0
Activation time	Not Present
RRC State indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

8.3.6.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Table 8.3.6.2.3: Cell specific test requirements for Cell re-selection in CELL_PCH state, two freqs. in neighbour list

Parameter	Unit	Се	II 1	Се	II 2	Cell 3		Ce	II 4	Cell 5		Cell 6		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Channel 1		Chann	Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/lor	dB	-6	9.3	-6	9.3	-10.8		-10.8		-10.8		-10.8		
PCCPCH_Ec/lor	dB	-1	1.3	-1	1.3	-12	-12.8		-12.8		2.8	-12	2.8	
SCH_Ec/lor	dB	-11.3		-11.3		-12.8		-12.8		-12.8		-12.8		
PICH_Ec/lor	dB	-1	4.3	-14.3		-15.8		-15.8		-15.8		-15.8		
OCNS_Ec/lor	dB	-1	.13	-1	.13	-0.77		-0.77		-0.77		-0.77		
\hat{I}_{or}/I_{oc} Note 1	dB	-3.40	+4.80	+4.80	-3.40	-7.40	-3.00	-7.40	-3.00	-3.00	-7.40	-3.00	-7.40	
\hat{I}_{or}	dBm	-73.4	-67.0	-67.0	-73.4	-77.4	-74.8	-77.4	-74.8	-74.8	-77.4	-74.8	-77.4	
I_{oc}	dBm/3.8 4 MHz	-70.0	-71.8	-71.8	-70.0	-70.0	-71.8	-70.0	-71.8	-71.8	-70.0	-71.8	-70.0	
CPICH_Ec/lo Note 1	dB	-15.3	-11.5	-11.5	-15.3	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	

All other parameters and conditions specified in table 8.3.6.2.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.7 Cell Re-selection in URA_PCH

{Unchanged Sections are skipped here}

8.3.7.2 Two frequencies present in the neighbour list

8.3.7.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell, and starts to send preambles on the PRACH for the URA UPDATE message with cause value "URA reselection" in the new cell.

The requirements and this test apply to the FDD UE.

8.3.7.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1.28 s.

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $T_{evaluateFDD} + T_{SI}$, where:

T_{evaluateFDD} See table 4.1 in TS 25.133 [2] clause 4.2.2.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by

the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 5.7.2 and A.5.7.2.

8.3.7.2.3 Test purpose

To verify that the UE meets the minimum requirement and is capable of camping on to a new cell, within the required time, when the preferred cell conditions change.

8.3.7.2.4 Method of test

8.3.7.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.3.7.2.1 to 8.3.7.2.3. The UE is requested to monitor neighbouring cells on 2 carriers. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1 280 ms. In System Information Block Type 2 in cell 1 and cell 2 URA identity is set to different value.

Table 8.3.7.2.1: General test parameters for Cell Re-selection in URA_PCH, two freqs. in neighbour list

	Parameter		Value	Comment
Initial	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Initial condition	Active cell Cell2		Cell1	
SYSTEM I BLOCK TY - URA ider - URA ider	ntity list	-	0000 0000 0000 0001(B) (Cell 1) 0000 0000 0000 0010(B) (Cell 2)	
	Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS	HCS			Not used
DRX cycle	DRX cycle length		1,28	The value shall be used for all cells in the test.
T1		S	<u>30</u> 15	T1 need to be defined so that cell reselection reaction time is taken into account.
T2		S	15	T2 need to be defined so that cell reselection reaction time is taken into account.

Table 8.3.7.2.2: Cell specific test parameters for Cell Re-selection in URA_PCH state, two freqs. in neighbour list

Parameter	Unit	Ce	II 1	С	ell 2		Cell 3		C	ell 4		Cel	I 5		Ce	II 6
		T1	T2	T1	T2	T1	1	Γ2	T1	T2		T1	T2	T1		T2
UTRA RF Channel Number		Char	nnel 1	Cha	annel 2	Cł	nannel	1	Cha	nnel 1		Chan	nel 2	С	han	nel 2
CPICH_Ec/lor	dB		10		-10		-10			-10		-1	0		-1	0
PCCPCH_Ec/lor	dB		12		-12		-12			-12		-1	2		-1	2
SCH_Ec/lor	dB		12		-12		-12			-12		-1	2		-1	2
PICH_Ec/lor	dB	-1	15		-15		-15			-15		-1	5		-1	5
OCNS_Ec/lor	dB	-0.9	941	-().941		0.941		-0	.941		-0.9	41		-0.9	941
\hat{I}_{or}/I_{oc}	dB	-3.4	2.2	2.2	-3.4	-7.	4 -4	1.8	-7.4	-4.8	3	-4.8	-7.4	-4.	8	-7.4
$\hat{I}_{or(Note1)}$	dBm	-73.39	- 67.7 5	- 67.7 5	- 73.3 9	- 77.3 9	- 74.7 5	- 77 9	7.3 - 7.5		-74.7	75 77 9	7.3	- 74.7 5	-77	7.39
I_{oc}	dBm / 3.84 MHz		-70													
CPICH_Ec/lo	dB	-16	-13	-13	-16		-20		-	20		-2	0		-2	0
Propagation Condition								AW	/GN							
Cell_selection_and_ reselection_quality_ measure		CPICH	HE√N₀	CPIC	CH E ₀ /N ₀	СРІ	CH E./	'N ₀	CPIC	H E /N	\ 0	CPICH	E _c /N _c	СР	ICH	E _c /N ₀
Qqualmin	dB	-2	20		-20		-20		-	20		-2	0		-2	0
Qrxlevmin	dBm	-1	15	-	115		-115		_^	115		-11	15		-11	15
UE_TXPWR_MAX_ RACH	dB	2			21		21			21		2	1		2	
Qoffset2 _{s, n}	dB	C1, 0 C1, 0 C1, 0	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	C2 C2 C2	C1: 0 C3: 0 C4: 0 C5: 0	C: C:	3, C1: (3, C2: (3, C4: (3, C5: (3, C6: ()))	C4, C4, C4,	C1: 0 C2: 0 C3: 0 C5: 0 C6: 0		C5, C C5, C C5, C C5, C	2: 0 3: 0 4: 0	0	6, C 6, C	C1: 0 C2: 0 C3: 0 C4: 0 C5: 0
Qhyst2	dB	()		0		0			0		0			C)
Treselection	S	()		0		0			0		0			C)
Sintrasearch	dB	not	sent	no	t sent	n	ot sent		not	sent		not s	ent	r	ot s	sent
Sintersearch	dB	not	sent	no	t sent	n	ot sent		not	sent		not s	ent	r	ot s	sent

Note 1 The nominal Îor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.3.7.2.4.2 Procedures

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.7.2.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) An RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in URA_PCH state on cell 2. The SS waits for this process to complete.
- 4) After 3015 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.7.2.3.
- 5) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.7.2.3.

- 8) If the UE responds on Cell 2 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 10.
- 10) After a total of 15 s from the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.7.2.3.
- 110) Steps 54 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.
- NOTE 1: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.
- NOTE 2: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

RADIO BEARER SETUP (Step 3)

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	100

Contents of URA UPDATE CONFIRM message for URA_PCH

Information Element	Value/remark
RRC transaction identifier	0
RRC state indicator	URA_PCH
UTRAN DRX cycle length coefficient	7
URA identity	000000000000010 B

8.3.7.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Table 8.3.7.2.3: Cell specific test requirements for Cell re-selection in URA_PCH state, two freqs. in neighbour list

Parameter	Unit	Се	II 1	Се	II 2	Ce	II 3	Се	II 4	Ce	II 5	Се	II 6
		T1	T2										
UTRA RF Channel Number		Chann	nel 1	Chann	nel 2	Chann	iel 1	Chann	iel 1	Chann	iel 2	Chann	el 2
CPICH_Ec/lor	dB	-6	9.3	-6	9.3	-10	0.8	-10	0.8	-10	0.8	-10	0.8
PCCPCH_Ec/lor	dB	-1	1.3	-1	1.3	-13	2.8	-12	2.8	-12	2.8	-12	2.8
SCH_Ec/lor	dB	-1	1.3	-1	1.3	-13	2.8	-12	2.8	-12	2.8	-12	2.8
PICH_Ec/lor	dB	-1	4.3	-1	4.3	-1	5.8	-1	5.8	-18	5.8	-18	5.8
OCNS_Ec/lor	dB	-1	.13	-1	.13	-0.	.77	-0.	.77	-0.	.77	-0.	77
\hat{I}_{or}/I_{oc} Note 1	dB	-3.40	+4.80	+4.80	-3.40	-7.40	-3.00	-7.40	-3.00	-3.00	-7.40	-3.00	-7.40
\hat{I}_{or}	dBm	-73.4	-67.0	-67.0	-73.4	-77.4	-74.8	-77.4	-74.8	-74.8	-77.4	-74.8	-77.4
I_{oc}	dBm/3.8 4 MHz	-70.0	-71.8	-71.8	-70.0	-70.0	-71.8	-70.0	-71.8	-71.8	-70.0	-71.8	-70.0
CPICH_Ec/lo Note 1	dB	-15.3	-11.5	-11.5	-15.3	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8	-20.8

All other parameters and conditions specified in table 8.3.7.2.2 are unchanged.

NOTE 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.

NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T WG1 Meeting #24 Toronto, Canada, July 26th-30th, 2004

CHANGE REQUEST							
*	34.121	CR 399	≋rev	#	Current vers	5.4.0	¥
For <u>HELP</u> on u	sing this fo	rm, see bottom of	this page or	look at th	e pop-up text	over the	mbols.
Proposed change affects: UICC apps# ME X Radio Access Network Core Network							
Title: 第	Addition	of test tolerances t	o TC 8.4.3				
Source: #	Nokia						
Work item code: ₩	TEI				<i>Date:</i> ∺	2004-07-14	
Reason for change	F (con A (co. B (ad C (fur D (ed Detailed ex be found in		ction in an ear of feature) ove categories uncertainties,	s can	2 R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	the following relations (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)	
Summary of chang	requirements have not been defined for TC 8.4.3 (Transport format combination selection in UE) in Annex F Summary of change: # - Maximum test system uncertainties have been added into Table F.1.5 - Test tolerances have been added into table F.2.4 - Derivation of test requirements have been added into table F.4.4						
Consequences if not approved:	署 Test	case is incomplete	1				
Clauses affected: Other specs Affected:	Y N X X	O&M Specification	ifications ns ons	¥			
Other comments:	器 This	CR is applicable f	or UE's supp	orting Re	el-99 or later.		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

F.1.5 Requirements for support of RRM

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2 Idle Mode Tasks		
8.2.2 Cell Re-Selection		
8.2.2.1 Scenario 1: Single carrier case	During T1 and T2:	
	$\frac{CPICH _E_c}{I_{or}}$ ±0.1 dB I_{oc} ±1.0 dB	
	During T1: I_{or} (2) ±0.7 dB	
	I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB	
	$\frac{\text{During T2:}}{I_{or}(1)} \qquad \pm 0.7 \text{ dB}$	
	I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for lor(r loc are derived according to ETR 273-1-factor of k=2.	
	b) Within each cell, the uncertainty for lo ratio are uncorrelated to each other.	r(n), and channel power
	c) The relative uncertainties for lor(n) achave any amount of positive correlation one (fully correlated).	
	d) Across different cells, the channel pow have any amount of positive correlation one (fully correlated).	
	e) The uncertainty for loc and lor(n) may positive correlation from zero (uncorrelation)	
	f) The absolute uncertainty of lor(2) at Tuncertainty of lor(1, 3, 4, 5, 6), are uncor Similarly, the absolute uncertainty of lor(uncertainty of lor(2, 3, 4, 5, 6), are uncor	related to each other. 1) at T2 and the relative
	An explanation of correlation between ur rationale behind the assumptions, is received. [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2:	,
	$\frac{CPICH _E_c}{\pm 0.1 \text{ dB}}$	
	I_{or} I_{oc} (1) ±1.0 dB	
	$\frac{\text{Channel 1 during T1:}}{I_{or}(\textbf{1})} \qquad \pm 0.7 \text{ dB}$	
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
	$\frac{\text{Channel 1 during T2:}}{I_{or}\text{(1)}} \\ \pm 0.7 \text{ dB}$	
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
	Channel 2 during T1 and T2:	
	$\frac{CPICH _E_c}{I_{or}} \qquad \pm 0.1 \text{ dB}$	
	I_{oc} (2) ±1.0 dB	
	Channel 2 during T1: I_{or} (2) ±0.7 dB	
	I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	$\frac{\text{Channel 2 during T2:}}{I_{or}(\text{2})} \\ \pm 0.7 \text{ dB}$	
	I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	Assumptions: a) to e): Same as for the one-frequency	test 8.2.2.1.
	f) The absolute uncertainty of lor(1) and lor(3, 4), are uncorrelated to each other. uncertainty of lor(2) and the relative uncurrelated to each other.	Similarly, the absolute
	g) The absolute uncertainties for lor(1) a amount of positive correlation from zero correlated).	
	h) The absolute uncertainties for loc(1) a amount of positive correlation from zero correlated).	
	An explanation of correlation between unrationale behind the assumptions, is rec [24].	
	1	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.3 UTRAN to GSM Cell Re-Selection		
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	\hat{I}_{or}/I_{oc} ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB	0.1 dB uncertainty in CPICH_Ec ratio
	RXLEV $\pm 1.0 \text{ dB}$ $\frac{CPICH _E_c}{I_{or}} \qquad \pm 0.1 \text{ dB}$	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner
		0.3 dB uncertainty in loc/RXLEV based on power meter measurement after the combiner
		The absolute error of the AWGN is specified as 1.0 dB.
		The absolute error of the RXLEV is specified as 1.0 dB.
8.2.3.2 Scenario 2: Only UTRA level changed	\hat{I}_{or}/I_{oc} ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB	Same as 8.2.3.1
	$\frac{CPICH _E_c}{I_{or}} = \pm 0.1 \text{ dB}$	
8.2.4 FDD/TDD cell re-selection	$\begin{array}{ll} \hat{I}_{or}/I_{oc} & \pm 0.3 \text{ dB} \\ I_{oc} & \pm 1.0 \text{ dB} \\ I_{oc1}/I_{oc2} & \pm 0.3 \text{ dB} \\ \\ \frac{CPICH _E_c}{I_{or}} & \pm 0.1 \text{ dB} \end{array}$	Same as 8.2.2.2
8.3 UTRAN Connected Mode Mobility		
8.3.1 FDD/FDD Soft Handover	$\frac{During T1 \text{ and } T2/T3/T4/T5/T6:}{CPICH _E_c} \\ \underline{I_{or}} \\ \pm 0.1 \text{ dB} \\ I_{or} \\ (1) \\ \pm 0.7 \text{ dB} \\ I_{oc} \\ \pm 1.0 \text{ dB} \\ \text{Relative delay of paths received from cell 2} \\ \text{with respect to cell 1:} \\ \pm 0.5 \text{ chips} \\$	
	During T1: Already covered above During T2/T3/T4/T5/T6:	
	I_{or} (2) relative to I_{or} (1) ±0.3 dB	

455

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty			
	Assumptions: a) The contributing uncertainties for lor(n), channel power ratio, and loc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.				
	b) Within each cell, the uncertainty for lor(n), uncorrelated to each other.	and channel power ratio are			
	c) Across different cells, the channel power r amount of positive correlation from zero (und correlated).				
	d) The uncertainty for loc and lor(n) may hav correlation from zero (uncorrelated) to one (f				
	e) The absolute uncertainty of lor(1) and the are uncorrelated to each other.	relative uncertainty of lor(2),			
9.2.2 EDD/EDD Hard Handayar	An explanation of correlation between uncert behind the assumptions, is recorded in 3GPF				
8.3.2 FDD/FDD Hard Handover 8.3.2.1 Handover to intra-frequency cell	During T1 and T2 / T3:				
0.3.2.1 Handover to intra-frequency cell	_				
	$\frac{CPICH _E_c}{}$ ±0.1 dB				
	I_{or}				
	I_{or} (1) ±0.7 dB				
	I_{oc} ±1.0 dB				
	D : T4				
	During T1: Already covered above				
	During T2 / T3:				
	I_{or} (2) relative to I_{or} (1) ±0.3 dB				
	Assumptions: a) The contributing uncertainties for lor(r loc are derived according to ETR 273-1-factor of k=2.				
	b) Within each cell, the uncertainty for lo ratio are uncorrelated to each other.	or(n), and channel power			
	c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).				
	d) The uncertainty for loc and lor(n) may positive correlation from zero (uncorrelation)				
	e) The absolute uncertainty of lor(1) and lor(2), are uncorrelated to each other.	I the relative uncertainty of			
	An explanation of correlation between uncert behind the assumptions, is recorded in 3GPF				

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty			
8.3.2.2 Handover to inter-frequency cell	Channel 1 during T1 and T2 / T3:				
. ,	CPICH E				
	±0.1 aD				
	I_{or}				
	I_{or} (1) ±0.7 dB				
	I_{oc} (1) ±1.0 dB				
	Channel 2 during T1 and T2 / T3:				
	I_{oc} (2) ±1.0 dB				
	Channel 2 during T1: Already covered above				
	Channel 2 during T2 / T3:				
	$CPICH_E_c$ ±0.1 dB				
	I_{or}				
	I_{or} (2) ±0.7 dB				
	or (2) ±0.7 dB				
	Assumptions:				
	a) The contributing uncertainties for lor(n), channel power ratio, and				
	loc are derived according to ETR 273-1-factor of k=2.	•			
	b) Within each cell, the uncertainty for loratio are uncorrelated to each other.	or(n), and channel power			
	c) Across different cells, the channel por have any amount of positive correlation one (fully correlated).				
	d) The uncertainty for loc(n) and lor(n) n positive correlation from zero (uncorrela				
	e) The absolute uncertainties for lor(1) a amount of positive correlation from zero correlated).				
	f) The absolute uncertainties for loc(1) a amount of positive correlation from zero correlated).				
	An explanation of correlation between uncert behind the assumptions, is recorded in 3GPI				
8.3.3 FDD/TDD Handover	TBD				
8.3.4 Inter-system Handover from UTRAN FDD to GSM	TBD				
8.3.5 Cell Re-selection in CELL_FACH					

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty		
8.3.5.1 One frequency present in the neighbour list	During T1 and T2:	,		
	$\frac{CPICH _E_c}{I_{or}} \qquad \text{±0.1 dB}$			
	I_{oc} ±1.0 dB			
	$\frac{\text{During T1:}}{I_{or}(\text{2})} \qquad \text{\pm 0.7 dB}$			
	I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB			
	$\frac{\text{During T2:}}{I_{or}(\text{1})} \qquad \text{\pm 0.7 dB}$			
	I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB			
	Assumptions: a) The contributing uncertainties for lor(loc are derived according to ETR 273-1-factor of k=2.			
	b) Within each cell, the uncertainty for lo ratio are uncorrelated to each other.	or(n), and channel power		
	c) The relative uncertainties for Ior(n) achave any amount of positive correlation one (fully correlated).			
	d) Across different cells, the channel por have any amount of positive correlation one (fully correlated).			
	e) The uncertainty for loc and lor(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).			
	f) The absolute uncertainty of lor(2) at T uncertainty of lor(1, 3, 4, 5, 6), are uncon Similarly, the absolute uncertainty of lor(2, 3, 4, 5, 6), are unconnectainty of lor(2, 3, 4, 5, 6), are unconnectainty of lor(2, 3, 4, 5, 6).	rrelated to each other. (1) at T2 and the relative		
	An explanation of correlation between unceribehind the assumptions, is recorded in 3GPI			

$\begin{array}{lll} \textbf{8.3.5.2 Two frequencies present in the} & \begin{array}{c} \textbf{Channel 1 during T1 and T2:} \\ \hline CPICH_E_c \\ \hline I_{oc} \end{array} & \pm 0.1 \text{dB} \\ \hline I_{oc} (1) & \pm 1.0 \text{dB} \\ \hline Channel 1 during T1: \\ I_{or} (1) & \pm 0.7 \text{dB} \\ \hline I_{or} (3, 4) \text{relative to } I_{or} (1) \pm 0.3 \text{dB} \\ \hline Channel 1 during T2: \\ I_{or} (1) & \pm 0.7 \text{dB} \\ \hline I_{or} (3, 4) \text{relative to } I_{or} (1) \pm 0.3 \text{dB} \\ \hline Channel 2 \text{during T1 and T2:} \\ \hline CPICH_E_c \\ \hline I_{or} \end{array} & \pm 0.1 \text{dB} \\ \hline I_{oc} (2) & \pm 1.0 \text{dB} \\ \hline Channel 2 \text{during T1:} \\ \hline I_{or} (2) & \pm 0.7 \text{dB} \\ \hline I_{or} (5, 6) \text{relative to } I_{or} (2) \pm 0.3 \text{dB} \\ \hline Channel 2 \text{during T1:} \\ \hline I_{or} (2) & \pm 0.7 \text{dB} \\ \hline I_{or} (5, 6) \text{relative to } I_{or} (2) \pm 0.3 \text{dB} \\ \hline Channel 2 \text{during T2:} \\ \hline I_{or} (2) & \pm 0.7 \text{dB} \\ \hline I_{or} (5, 6) \text{relative to } I_{or} (2) \pm 0.3 \text{dB} \\ \hline Assumptions:} \\ \textbf{a) to e): Same as for the one-frequency test 8.3.5.1.} \\ \textbf{1) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other.} \\ \textbf{9) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated).} \\ \textbf{h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated).} \\ \textbf{An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].} \\ \end{array}$	Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
$CPICH _E_c \\ I_{or} = \pm 0.1 \mathrm{dB}$ $I_{ac}(1) = \pm 1.0 \mathrm{dB}$ $Channel 1 \mathrm{during} \mathrm{T1:}$ $I_{or}(1) = \pm 0.7 \mathrm{dB}$ $I_{or}(3, 4) \mathrm{relative} \mathrm{to} I_{or}(1) \pm 0.3 \mathrm{dB}$ $Channel 1 \mathrm{during} \mathrm{T2:}$ $I_{or}(1) = \pm 0.7 \mathrm{dB}$ $I_{or}(3, 4) \mathrm{relative} \mathrm{to} I_{or}(1) \pm 0.3 \mathrm{dB}$ $Channel 2 \mathrm{during} \mathrm{T1:}$ $I_{or}(3, 4) \mathrm{relative} \mathrm{to} I_{or}(1) \pm 0.3 \mathrm{dB}$ $Channel 2 \mathrm{during} \mathrm{T1:}$ $I_{or}(2) = \pm 0.1 \mathrm{dB}$ $I_{or}(2) = \pm 0.1 \mathrm{dB}$ $I_{or}(2) = \pm 0.7 \mathrm{dB}$ $I_{or}(5, 6) \mathrm{relative} \mathrm{to} I_{or}(2) \pm 0.3 \mathrm{dB}$ $Channel 2 \mathrm{during} \mathrm{T1:}$ $I_{or}(2) = \pm 0.7 \mathrm{dB}$ $I_{or}(5, 6) \mathrm{relative} \mathrm{to} I_{or}(2) \pm 0.3 \mathrm{dB}$ $Assumptions:$ a) to e): Same as for the one-frequency test $8.3.5.1.$ f) The absolute uncertainty of for(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. Similarly of lor(5, 6), are uncorrelated to each other. Similarly the absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].		Channel 1 during T1 and T2:	
$I_{or} I_{oc}(1) = \pm 1.0 \text{ dB}$ $\frac{\text{Channel 1 during T1:}}{I_{or}(1)} I_{or}(1) = \pm 0.7 \text{ dB}$ $I_{or}(3, 4) \text{ relative to } I_{or}(1) \pm 0.3 \text{ dB}$ $\frac{\text{Channel 1 during T2:}}{I_{or}(1)} \pm 0.7 \text{ dB}$ $I_{or}(3, 4) \text{ relative to } I_{or}(1) \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T1 and T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.1 \text{ dB}$ $I_{oc}(2) = \pm 1.0 \text{ dB}$ $I_{oc}(2) = \pm 0.7 \text{ dB}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.7 \text{ dB}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(2) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(3) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(3) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(3) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(3) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(3) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(3) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(3) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(3) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(3) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} I_{or}(3) = \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(3) I_{or}(3) = 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(3) I_{or}(3) = 0.3 \text$	Treigribour list	CPICH E.	
$I_{oc}(1) \pm 1.0 \text{ dB}$ $\frac{C_{\text{hannel 1 during T1:}}{I_{or}(1)} \pm 0.7 \text{ dB}$ $I_{or}(3, 4) \text{ relative to } I_{or}(1) \pm 0.3 \text{ dB}$ $\frac{C_{\text{hannel 1 during T2:}}{I_{or}(1)} \pm 0.7 \text{ dB}$ $I_{or}(3, 4) \text{ relative to } I_{or}(1) \pm 0.3 \text{ dB}$ $\frac{C_{\text{hannel 2 during T1 and T2:}}{CPICH _ E_c} \pm 0.1 \text{ dB}$ $\frac{C_{\text{hannel 2 during T1:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $\frac{C_{\text{hannel 2 during T1:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $\frac{C_{\text{hannel 2 during T1:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $\frac{C_{\text{hannel 2 during T2:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{C_{\text{hannel 2 during T2:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{C_{\text{hannel 2 during T2:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{C_{\text{hannel 2 during T2:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{C_{\text{hannel 2 during T2:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{C_{\text{hannel 2 during T2:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{C_{\text{hannel 2 during T2:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{C_{\text{hannel 2 during T2:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{C_{\text{hannel 2 during T2:}}{I_{or}(2)} \pm 0.3 \text{ dB}$ $\frac{C_{\text{hannel 2 during T2:}}{I_{o$		±0.1 dB	
$ \begin{array}{lll} \frac{Channel \ 1 \ during \ T1:}{I_{or}(1)} & \pm 0.7 \ dB \\ \hline I_{or}(3,4) \ relative \ to \ I_{or}(1) \ \pm 0.3 \ dB \\ \hline \frac{Channel \ 1 \ during \ T2:}{I_{or}(1)} & \pm 0.7 \ dB \\ \hline I_{or}(3,4) \ relative \ to \ I_{or}(1) \ \pm 0.3 \ dB \\ \hline \frac{Channel \ 2 \ during \ T1}{I_{or}(1)} & \pm 0.3 \ dB \\ \hline \frac{Channel \ 2 \ during \ T1}{I_{or}(2)} & \pm 0.1 \ dB \\ \hline \frac{I_{oc}(2)}{I_{or}} & \pm 0.1 \ dB \\ \hline \frac{I_{oc}(2)}{I_{or}(2)} & \pm 0.7 \ dB \\ \hline \frac{I_{or}(5,6) \ relative \ to \ I_{or}(2) \ \pm 0.3 \ dB}{I_{or}(5,6) \ relative \ to \ I_{or}(2)} & \pm 0.3 \ dB \\ \hline \frac{Channel \ 2 \ during \ T2:}{I_{or}(2)} & \pm 0.7 \ dB \\ \hline \frac{I_{or}(5,6) \ relative \ to \ I_{or}(2) \ \pm 0.3 \ dB}{I_{or}(5,6) \ relative \ to \ I_{or}(2)} & \pm 0.3 \ dB \\ \hline \frac{Assumptions:}{I_{or}(2)} & \pm 0.7 \ dB \\ \hline \frac{I_{or}(5,6) \ relative \ to \ I_{or}(2) \ \pm 0.3 \ dB}{I_{or}(5,6) \ relative \ to \ I_{or}(2)} & \pm 0.3 \ dB} \\ \hline \frac{Assumptions:}{I_{or}(2)} & \pm 0.7 \ dB \\ \hline \frac{I_{or}(5,6) \ relative \ to \ I_{or}(2) \ \pm 0.3 \ dB}{I_{or}(5,6) \ relative \ to \ I_{or}(2) \ dD} \\ \hline \frac{I_{or}(5,6) \ relative \ to \ I_{or}(2) \ \pm 0.3 \ dB}{I_{or}(5,6) \ relative \ to \ I_{or}(2) \ dD} \\ \hline \frac{I_{or}(5,6) \ relative \ to \ I_{or}(2) \ \pm 0.3 \ dB}{I_{or}(5,6) \ relative \ to \ I_{or}(2) \ \pm 0.3 \ dB} \\ \hline \frac{I_{or}(5,6) \ relative \ to \ I_{or}(2) \ \pm 0.3 \ dB}{I_{or}(5,6) \ relative \ to \ I_{or}(2) \ \pm 0.3 \ dB} \\ \hline \frac{I_{or}(5,6) \ relative \ to \ I_{or}(5,6) \ relative \ I_$			
$I_{or}(1) = \pm 0.7 \text{ dB}$ $I_{or}(3, 4) \text{ relative to } I_{or}(1) \pm 0.3 \text{ dB}$ $\frac{\text{Channel 1 during T2:}}{I_{or}(1)} = \pm 0.7 \text{ dB}$ $I_{or}(3, 4) \text{ relative to } I_{or}(1) \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T1 and T2:}}{I_{or}} = \frac{\text{CPICH} - E_c}{I_{or}} = \pm 0.1 \text{ dB}$ $I_{oc}(2) = \pm 1.0 \text{ dB}$ $\frac{\text{Channel 2 during T1:}}{I_{or}(2)} = \pm 0.7 \text{ dB}$ $\frac{I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}}{I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} = \pm 0.7 \text{ dB}$ $\frac{I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}}{I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}}$ $\frac{\text{Assumptions:}}{I_{or}(3, 4), \text{ are uncorrelated to each other. Similarly, the absolute uncertainty of lor(3) and the relative uncertainty of lor(3), and the relative uncertainty of lor(3) and the relative uncertainty of lor(3) and the relative uncertainty of lor(6, 6), are uncorrelated to each other.} g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].$		I_{oc} (1) ±1.0 dB	
$I_{or}(3,4) \text{ relative to } I_{or}(1) \pm 0.3 \text{ dB}$ $\frac{\text{Channel 1 during T2:}}{I_{or}(1)} \pm 0.7 \text{ dB}$ $I_{or}(3,4) \text{ relative to } I_{or}(1) \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T1 and T2:}}{I_{or}} = \frac{\text{CPICH} - E_c}{I_{or}} \pm 0.1 \text{ dB}$ $I_{oc}(2) \pm 1.0 \text{ dB}$ $\frac{\text{Channel 2 during T1:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2)} \pm 0.7 \text{ dB}$ $\frac{\text{Assumptions:}}{I_{or}(3,4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(3,4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5,6), are uncorrelated to each other. (g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].$		Channel 1 during T1:	
$\begin{array}{c} \text{Channel 1 during T2:} \\ I_{or}(1) & \pm 0.7 \text{dB} \\ \\ I_{or}(3, 4) \text{relative to } I_{or}(1) \pm 0.3 \text{dB} \\ \\ \text{Channel 2 during T1 and T2:} \\ \\ \frac{CPICH_{-}E_{c}}{I_{or}} & \pm 0.1 \text{dB} \\ \\ I_{or}(2) & \pm 1.0 \text{dB} \\ \\ \frac{Channel 2 during T1:}{I_{or}(2)} & \pm 0.7 \text{dB} \\ \\ I_{or}(5, 6) \text{relative to } I_{or}(2) \pm 0.3 \text{dB} \\ \\ \frac{Channel 2 during T2:}{I_{or}(2)} & \pm 0.7 \text{dB} \\ \\ I_{or}(5, 6) \text{relative to } I_{or}(2) \pm 0.3 \text{dB} \\ \\ \frac{Assumptions:}{Assumptions:} & \text{a) to e):} \text{Same as for the one-frequency test 8.3.5.1.} \\ \text{f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other.} \\ \text{g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated).} \\ \text{h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated).} \\ \text{An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [244].} \\ \end{array}$		I_{or} (1) ±0.7 dB	
$I_{or}(1) = \pm 0.7 \text{ dB}$ $I_{or}(3, 4) \text{ relative to } I_{or}(1) \pm 0.3 \text{ dB}$ $\frac{Channel 2 \text{ during T1 and T2:}}{CPICH _E_c} = \pm 0.1 \text{ dB}$ $I_{oc}(2) = \pm 1.0 \text{ dB}$ $\frac{Channel 2 \text{ during T1:}}{I_{or}(2) = \pm 0.7 \text{ dB}}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{Channel 2 \text{ during T2:}}{I_{or}(2) = \pm 0.7 \text{ dB}}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{Channel 2 \text{ during T2:}}{I_{or}(2) = \pm 0.7 \text{ dB}}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{Assumptions:}{a) \text{ to } e): \text{ Same as for the one-frequency test } 8.3.5.1.$ $f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].$		I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
$I_{or}(1) = \pm 0.7 \text{ dB}$ $I_{or}(3, 4) \text{ relative to } I_{or}(1) \pm 0.3 \text{ dB}$ $\frac{Channel 2 \text{ during T1 and T2:}}{CPICH _E_c} = \pm 0.1 \text{ dB}$ $I_{oc}(2) = \pm 1.0 \text{ dB}$ $\frac{Channel 2 \text{ during T1:}}{I_{or}(2) = \pm 0.7 \text{ dB}}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{Channel 2 \text{ during T2:}}{I_{or}(2) = \pm 0.7 \text{ dB}}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{Channel 2 \text{ during T2:}}{I_{or}(2) = \pm 0.7 \text{ dB}}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{Assumptions:}{a) \text{ to } e): \text{ Same as for the one-frequency test } 8.3.5.1.$ $f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].$		Channel 1 during T2:	
Channel 2 during T1 and T2: $\frac{CPICH_E_c}{I_{or}} \pm 0.1 \mathrm{dB}$ $I_{oc}(2) \pm 1.0 \mathrm{dB}$ $\frac{Channel 2 during T1:}{I_{or}(2) \pm 0.7 \mathrm{dB}}$ $I_{or}(5, 6) \mathrm{relative to} I_{or}(2) \pm 0.3 \mathrm{dB}$ $\frac{Channel 2 during T2:}{I_{or}(2) \pm 0.7 \mathrm{dB}}$ $\frac{Channel 2 during T2:}{I_{or}(2) \pm 0.7 \mathrm{dB}}$ $\frac{I_{or}(5, 6) \mathrm{relative to} I_{or}(2) \pm 0.3 \mathrm{dB}}$ Assumptions: a) to e): Same as for the one-frequency test 8.3.5.1. f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 (24).			
$\frac{CPICH_E_c}{I_{or}} \pm 0.1 \mathrm{dB}$ $I_{oc}(2) \pm 1.0 \mathrm{dB}$ $\frac{C_{hannel 2 during T1:}}{I_{or}(2)} \pm 0.7 \mathrm{dB}$ $I_{or}(5, 6) \mathrm{relative to} I_{or}(2) \pm 0.3 \mathrm{dB}$ $\frac{C_{hannel 2 during T2:}}{I_{or}(2)} \pm 0.7 \mathrm{dB}$ $\frac{I_{or}(5, 6) \mathrm{relative to} I_{or}(2) \pm 0.3 \mathrm{dB}}{I_{or}(5, 6) \mathrm{relative to} I_{or}(2) \pm 0.3 \mathrm{dB}}$ Assumptions: a) to e): Same as for the one-frequency test 8.3.5.1. f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].		I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
$I_{oc}\left(2\right) \qquad \pm 1.0 \text{ dB}$ $\frac{Channel\ 2\ during\ T1:}{I_{or}\left(2\right)} \qquad \pm 0.7 \text{ dB}$ $I_{or}\left(5,6\right) \text{ relative to } I_{or}\left(2\right) \pm 0.3 \text{ dB}$ $\frac{Channel\ 2\ during\ T2:}{I_{or}\left(2\right)} \qquad \pm 0.7 \text{ dB}$ $I_{or}\left(5,6\right) \text{ relative to } I_{or}\left(2\right) \pm 0.3 \text{ dB}$ $\frac{Assumptions:}{Assumptions:} \text{ a) to e): Same as for the one-frequency test } 8.3.5.1.$ $f) \text{ The absolute uncertainty of lor(1) and the relative uncertainty of lor(3,4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5,6), are uncorrelated to each other.} g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated).} h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated).} An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].}$		Channel 2 during T1 and T2:	
$I_{oc}\left(2\right) \qquad \pm 1.0 \text{ dB}$ $\frac{Channel\ 2\ during\ T1:}{I_{or}\left(2\right)} \qquad \pm 0.7 \text{ dB}$ $I_{or}\left(5,6\right) \text{ relative to } I_{or}\left(2\right) \pm 0.3 \text{ dB}$ $\frac{Channel\ 2\ during\ T2:}{I_{or}\left(2\right)} \qquad \pm 0.7 \text{ dB}$ $I_{or}\left(5,6\right) \text{ relative to } I_{or}\left(2\right) \pm 0.3 \text{ dB}$ $\frac{Assumptions:}{Assumptions:} \text{ a) to e): Same as for the one-frequency test } 8.3.5.1.$ $f) \text{ The absolute uncertainty of lor(1) and the relative uncertainty of lor(3,4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5,6), are uncorrelated to each other.} g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated).} h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated).} An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].}$		CPICH E.	
$I_{oc}\left(2\right) \qquad \pm 1.0 \text{ dB}$ $\frac{\text{Channel 2 during T1:}}{I_{or}\left(2\right)} \qquad \pm 0.7 \text{ dB}$ $I_{or}\left(5,6\right) \text{ relative to } I_{or}\left(2\right) \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}\left(2\right)} \qquad \pm 0.7 \text{ dB}$ $I_{or}\left(5,6\right) \text{ relative to } I_{or}\left(2\right) \pm 0.3 \text{ dB}$ $\frac{\text{Assumptions:}}{\text{Assumptions:}} \text{ a) to e): Same as for the one-frequency test 8.3.5.1.}$ $\text{f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other.}$ $\text{g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated).}$ $\text{h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated).}$ An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].}			
Channel 2 during T1: $I_{or}(2) = \pm 0.7 \text{ dB}$ $I_{or}(5,6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2) = \pm 0.7 \text{ dB}}$ $\frac{I_{or}(5,6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}}{I_{or}(5,6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}}$ Assumptions: a) to e): Same as for the one-frequency test 8.3.5.1. f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].			
$I_{or}(2) \qquad \pm 0.7 \text{ dB}$ $I_{or}(5,6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2) \qquad \pm 0.7 \text{ dB}}$ $I_{or}(5,6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{\text{Assumptions:}}{\text{a) to e): Same as for the one-frequency test 8.3.5.1.}}$ $f) \text{ The absolute uncertainty of lor(1) and the relative uncertainty of lor(3,4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5,6), are uncorrelated to each other.}$ $g) \text{ The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated).}$ $h) \text{ The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated).}$ $An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].}$			
$I_{or}(5,6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ $\frac{\text{Channel 2 during T2:}}{I_{or}(2) \pm 0.7 \text{ dB}}$ $I_{or}(5,6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}}$ Assumptions: a) to e): Same as for the one-frequency test $8.3.5.1$. f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].		-	
Channel 2 during T2: $I_{or}(2) = \pm 0.7 \text{ dB}$ $I_{or}(5, 6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ Assumptions: a) to e): Same as for the one-frequency test $8.3.5.1$. f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].		$I_{or}(2) = \pm 0.7 \text{ dB}$	
$I_{or}(2) \qquad \pm 0.7 \text{ dB}$ $I_{or}(5,6) \text{ relative to } I_{or}(2) \pm 0.3 \text{ dB}$ Assumptions: a) to e): Same as for the one-frequency test $8.3.5.1$. f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].		I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
Assumptions: a) to e): Same as for the one-frequency test 8.3.5.1. f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].		Channel 2 during T2:	
Assumptions: a) to e): Same as for the one-frequency test 8.3.5.1. f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].		I_{or} (2) ±0.7 dB	
a) to e): Same as for the one-frequency test 8.3.5.1. f) The absolute uncertainty of lor(1) and the relative uncertainty of lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].		I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
lor(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(2) and the relative uncertainty of lor(5, 6), are uncorrelated to each other. g) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].			test 8.3.5.1.
amount of positive correlation from zero (uncorrelated) to one (ful correlated). h) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].		lor(3, 4), are uncorrelated to each other. uncertainty of lor(2) and the relative unc	Similarly, the absolute
amount of positive correlation from zero (uncorrelated) to one (ful correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions is recorded in 3GPP TR 34 902 [24].		amount of positive correlation from zero	and lor(2) may have any (uncorrelated) to one (fully
behind the assumptions is recorded in 3GPP TR 34 902 [24].		amount of positive correlation from zero	
		behind the assumptions is recorded in 3GPP	
8.3.5.3 Cell Re-selection to GSM TBD 8.3.6 Cell Re-selection in CELL_PCH		TBD	
8.3.6.1 One frequency present in the neighbour list Same as 8.2.2.1 Same as 8.2.2.1	8.3.6.1 One frequency present in the	Same as 8.2.2.1	Same as 8.2.2.1

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.6.2 Two frequencies present in the	Same as 8.2.2.2	Same as 8.2.2.2
neighbour list 8.3.7 Cell Re-selection in URA_PCH		
8.3.7.1 One frequency present in the	Same as 8.2.2.1	Same as 8.2.2.1
neighbour list		
8.3.7.2 Two frequencies present in the	Same as 8.2.2.2	Same as 8.2.2.2
neighbour list		
8.4 RRC Connection Control 8.4.1 RRC Re-establishment delay	TBD	
8.4.2 Random Access	Settings.	0.1 dB uncertainty in AICH_Ec
0.4.2 Natidum Access	\hat{I}_{or}/I_{oc} ±0.3 dB	ratio
	I_{oc} ±1.0 dB	0.3 dB uncertainty in \hat{I}_{or}/I_{oc}
	$AICH_E_c$	based on power meter
	$\frac{c}{I_{or}}$ ±0.1 dB	measurement after the combiner
		Overall error is the sum of the
		\hat{I}_{or}/I_{oc} ratio error and the AICH_Ec/lor ratio.
		The absolute error of the AWGN is specified as 1.0 dB
	Measurements: Power difference. ± 1dB Maximum Power: same as 5.5.2	Power difference: Assume symmetric meas error ±1.0 dB comprising RSS of: - 0.7 dB downlink error plus -0.7 dB meas error.
		Maximum Power: Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit
8.4.3 Transport format combination selection in UE	$\frac{DPCH _E_c}{I_{or}} = \frac{\pm 0.1 \text{ dB}}{1 + 0.1 \text{ dB}}$	0.1 dB uncertainty in DPCH Ec ratio
	or	
8.5 Timing and Signalling Characteristics		
8.5.1 UE Transmit Timing	I_{or} ±1.0 dB	0.1 dB uncertainty in
	$I_{\rm out}/I_{\rm out}$ ±0.3 dB	DPCH_Ec ratio
	0/1/ 0/2	
	$DPCH_E_c$ +0.1 dB	
	$\frac{c}{I_{or}}$ ±0.1 dB	0.3 dB uncertainty in lor1/lor2 based on power meter measurement after the combiner
		The absolute error of the lor is specified as 1.0 dB.
8.6 UE Measurements Procedures		
8.6.1 FDD intra frequency measurements		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.1.1 Event triggered reporting in	During T1/T3 and T2:	
AWGN propagation conditions	CPICH _ E _c	
	I_{or} ±0.1 dB	
	I_{or} (1) ±0.7 dB	
	I_{oc} ±1.0 dB	
	During T1/T3 only: Already covered above	
	Alleady covered above	
	During T2 only:	
	I_{or} (2) relative to I_{or} (1) ±0.3 dB	
	Assumptions:	
	a) The contributing uncertainties for lor(n), cl	
	derived according to ETR 273-1-2 [16], with b) Within each cell, the uncertainty for lor(n),	
	uncorrelated to each other.	, and channel power ratio are
	c) Across different cells, the channel power r	
	amount of positive correlation from zero (und correlated).	correlated) to one (fully
	d) The uncertainty for loc and lor(n) may have	e any amount of positive
	correlation from zero (uncorrelated) to one (f	fully correlated).
	e) The absolute uncertainty of lor(1) and the	relative uncertainty of lor(2),
	are uncorrelated to each other. An explanation of correlation between uncer	tainties, and of the rationale
	behind the assumptions, is recorded in 3GPI	
8.6.1.2 Event triggered reporting of	TBD	
multiple neighbours in AWGN propagation condition		
8.6.1.3 Event triggered reporting of two	TBD	
detectable neighbours in AWGN		
propagation condition	TDD	
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD	
8.6.2 FDD inter frequency measurements		
8.6.2.1 Correct reporting of neighbours in	TBD	
AWGN propagation condition 8.6.2.2 Correct reporting of neighbours in	TDD	
Fading propagation condition	TBD	
8.6.3 TDD measurements		
8.6.3.1Correct reporting of TDD	TBD	
neighbours in AWGN propagation condition		
8.6.4 GSM Measurement	TBD	
8.7 Measurements Performance		
Requirements		
8.7.1 CPICH RSCP 8.7.1.1 Intra frequency measurements	î /r .0.2 dD	Same as 8.2.2.1
accuracy	\hat{I}_{or}/I_{oc} ±0.3 dB	Jan 40 0.2.2.1
	I_{oc} ±1.0 dB	
	$\frac{CPICH _E_c}{\pm 0.1}$ ±0.1 dB	
	I_{or} ±0.1 dB	
8.7.1.2 Inter frequency measurement	\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.2
accuracy		
	I_{oc} ±1.0 dB	
	I_{oc1}/I_{oc2} ±0.3 dB	
	CPICH _ E _c	
	I_{or} ±0.1 dB	
8.7.2 CPICH Ec/lo	ı or	
0.1.2 OFICH EC/IO		l

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.7.2.1 Intra frequency measurements accuracy	\hat{I}_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH _E_c}{}$ ±0.1 dB	Same as 8.2.2.1
8.7.2.2 Inter frequency measurement accuracy	I_{or} ±0.1 dB I_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH_E_c}{I_{oc}}$ ±0.1 dB	Same as 8.2.2.2
8.7.3 UTRA Carrier RSSI	I_{or} ±0.1 dB I_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner 0.3 dB uncertainty in loc1/loc2 based on power meter measurement after the combiner The absolute error of the
8.7.3A GSM Carrier RSSI	TBD	AWGN is specified as 1.0 dB
8.7.3C UE Transmitted power	Mean power measurement ±0,7 dB	Downlink parameters are unimportant.
8.7.4 SFN-CFN observed time difference		
8.7.4.1 Intra frequency measurements accuracy	\hat{I}_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB Actual SFN-CFN observed time difference: ±0.5 chips	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.4.2 Inter frequency measurements accuracy	\hat{I}_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB Actual SFN-CFN observed time difference: ±0.5 chips	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.5.1 SFN-SFN observed time difference type 1	\hat{I}_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB Actual SFN-SFN observed time difference type 1: ±0.5 chips	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB
8.7.6 UE Rx-Tx time difference	\hat{I}_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB Rx-Tx Timing Accuracy ±0.5 chip	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB.

Clause	Maximum Test System Uncertainty	Derivation of Test System
		Uncertainty
8.7.8 P-CCPCH RSCP	TBD	

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.2 Idle Mode Tasks	
8.2.2 Cell Re-Selection	
8.2.2.1 Scenario 1: Single carrier case	During T1 and T2: +0.60 dB for all Cell 1 and 2 Ec/lor ratios -0.50 dB for all Cell 3, 4, 5, 6 Ec/lor ratios +0.03 dB for lor(3, 4, 5, 6)
	<u>During T1:</u> -0.27 dB for lor(1) +0.13 dB for lor(2)
	During T2: +0.13 dB for lor(1) -0.27 dB for lor(2)
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2: +0.70 dB for all Cell 1 Ec/lor ratios -0.80 dB for all Cell 3 and 4 Ec/lor ratios
	Channel 1 during T1: -0.01 dB for lor(1) -0.01 dB for lor(3, 4) No change for loc(1)
	Channel 1 during T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.80 dB for loc(1)
	Channel 2 during T1 and T2: +0.70 dB for all Cell 2 Ec/lor ratios -0.80 dB for all Cell 5 and 6 Ec/lor ratios
	Channel 2 during T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.80 dB for loc(2)
	Channel 2 during T2: -0.01 dB for lor(2) -0.01 dB for lor(5, 6) No change for loc(2)
8.2.3 UTRAN to GSM Cell Re-Selection	
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	0.3 dB for \hat{I}_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor 0.3 dB for loc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level changed	0.3 dB for \hat{I}_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor
8.2.4 FDD/TDD cell re-selection	0.3 dB for loc/RXLEV
C.L. 11 DD/1DD CON 16-3616CHOH	0.3 dB for \hat{I}_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor
O O LITRANI Company 184 1 184 1 222	0.3 dB for loc1/loc2
8.3 UTRAN Connected Mode Mobility	

Clause	Test Tolerance
8.3.1 FDD/FDD Soft Handover	During T1 and T2/T3/T4/T5/T6:
	+0.70 dB for all Cell 1 Ec/lor ratios
	Relative delay: {-147.5 +147.5} chips
	During T1:
	Already covered above
	<u>During T2/T3/T4/T5/T6:</u>
0.00 500 (500 11 111 1	+0.70 dB for all Cell 2 Ec/lor ratios
8.3.2 FDD/FDD Hard Handover	
8.3.2.1 Handover to intra-frequency cell	During T1 and T2 / T3:
	+0.70 dB for all Cell 1 Ec/lor ratios
	During T4:
	During T1:
	Already covered above
	During T2 / T3:
	+0.70 dB for all Cell 2 Ec/lor ratios
8.3.2.2 Handover to inter-frequency cell	Channel 1 during T1 and T2 / T3:
o.o.z.z Handever to linter frequency com	+0.80 dB for all Cell 1 Ec/lor ratios
	Channel 2 during T1:
	Not applicable
	Channel 2 during T2 / T3:
	+0.80 dB for all Cell 2 Ec/lor ratios
8.3.3 FDD/TDD Handover	TBD
8.3.4 Inter-system Handover form	TBD
UTRAN FDD to GSM	
8.3.5 Cell Re-selection in CELL_FACH	D : T/ 1T0
8.3.5.1 One frequency present in the	During T1 and T2:
neighbour list	+0.60 dB for all Cell 1 and 2 Ec/lor ratios
	-0.50 dB for all Cell 3, 4,5, 6 Ec/lor ratios
	+0.03 dB for lor(3, 4, 5, 6)
	During T1:
	-0.27 dB for lor(1)
	+0.13 dB for lor(2)
	During T2:
	+0.13 dB for lor(1)
	-0.27 dB for lor(2)

Clause	Test Tolerance
8.3.5.2 Two frequencies present in the	Channel 1 during T1 and T2:
neighbour list	+0.60 dB for all Cell 1 Ec/lor ratios
Theighbour list	-0.70 dB for all Cell 3 and 4 Ec/lor ratios
	-0.70 db for all cell 3 and 4 Ec/for fatios
	Channel 1 during T1:
	+0.05 dB for lor(1)
	+0.05 dB for lor(3, 4)
	No change for loc(1)
	Channel 1 during T2:
	+0.75 dB for lor(1)
	-0.05 dB for lor(3, 4)
	-1.60 dB for loc(1)
	01 10 1 : 74 170
	Channel 2 during T1 and T2:
	+0.60 dB for all Cell 2 Ec/lor ratios -0.70 dB for all Cell 5 and 6 Ec/lor ratios
	Channel 2 during T1:
	Channel 2 during T1: +0.75 dB for lor(2)
	-0.05 dB for lor(5, 6)
	-1.60 dB for loc(2)
	Channel 2 during T2:
	+0.05 dB for lor(2)
	+0.05 dB for lor(5, 6)
	No change for loc(2)
8.3.6 Cell Re-selection in CELL_PCH	
8.3.6.1 One frequency present in the	Same as 8.2.2.1
neighbour list	0 000
8.3.6.2 Two frequencies present in the	Same as 8.2.2.2
neighbour list	
8.3.7 Cell Re-selection in URA_PCH	Same as 8.2.2.1
8.3.7.1 One frequency present in the neighbour list	Same as 6.2.2.1
8.3.7.2 Two frequencies present in the	Same as 8.2.2.2
neighbour list	Same as 0.2.2.2
8.4 RRC Connection Control	
8.4.1 RRC Re-establishment delay	TBD
8.4.2 Random Access	Settings:
	9
	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for AICH_Ec/lor
	Measurements:
	Power difference: ± 1dB
0.40 7	Maximum Power: -1dB / +0.7dB
8.4.3 Transport format combination	0 dB for DPCH_Ec/lor
selection in UE	
8.5 Timing and Signalling Characteristics	TDD
8.5.1 UE Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD intra frequency measurements	During T1/T3 and T2:
8.6.1.1 Event triggered reporting in AWGN propagation conditions	During T1/T3 and T2: +0.70 dB for all Cell 1 Ec/lor ratios
Tree Ore propagation conditions	10.70 db for all Obli 1 Ec/101 fatios
	During T1/T3 only:
	Already covered above
	During T2 only:
	+0.70 dB for all Cell 2 Ec/lor ratios
8.6.1.2 Event triggered reporting of	TBD
multiple neighbours in AWGN	
propagation condition	
8.6.1.3 Event triggered reporting of two	TBD
I dotootoble peigle come in AMACM	100
detectable neighbours in AWGN propagation condition	

8.6.1.4 Correct reporting of neighbours in fading propagation condition 8.6.2 FDD inter frequency measurements	
8.6.2 FDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	
8.6.2.2 Correct reporting of neighbours in TBD	
Fading propagation condition	
8.6.3 TDD measurements 8.6.3.1Correct reporting of TDD TBD	
neighbours in AWGN propagation condition	
8.7 Measurements Performance TBD Requirements	
8.7.1 CPICH RSCP	
8.7.2.1 Intra frequency measurements 0.3 dB for \hat{I}_{or}/I_{oc}	
accuracy 0.3 dB for Y_{or}/Y_{oc} 0.1 dB for CPICH_Ec/lor 1.0 dB for loc	
8.7.2.2 Inter frequency measurement accuracy 0.3 dB for \hat{I}_{or}/I_{oc}	
0.1 dB for CPICH_Ec/lor 0.3 dB for loc1/loc2 1.0 dB for loc	
8.7.2 CPICH Ec/lo	
8.7.1.1 Intra frequency measurements 0.3 dB for \hat{I}_{or}/I_{oc}	
accuracy $ \begin{array}{c} 0.3 \text{ dB for } I_{or}/I_{oc} \\ 0.1 \text{ dB for CPICH_Ec/lor} \end{array} $	
8.7.1.2 Inter frequency measurement accuracy 0.3 dB for \hat{I}_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor	
8.7.3A UTRA Carrier RSSI 0.3 dB for \hat{I}_{or}/I_{oc}	
1.0 dB for loc	
8.7.3B Transport channel BLER TBD 8.7.3C UE Transmitted power 0.7 dB for mean power measureme	nt by
test system	
8.7.4 SFN-CFN observed time difference 0.3 dB for \hat{I}_{or}/I_{oc}	
1.0 dB for loc	
±0.5 chips for the actual SFN-CFN observed time difference	
0.7.5.4. OFN CFN shappy and times	
difference type 1 $0.3 \mathrm{dB} \mathrm{for} \hat{I}_{or} / I_{oc}$	
1.0 dB for loc	
±0.5 chips for the actual SFN-SFN observed time difference type 1	
8.7.6 UE Rx-Tx time difference 0.3 dB for \hat{I}_{or}/I_{oc}	
1.0 dB for loc	
[0.5 chip] for Rx-Tx Timing Accurac	V
8.7.7 Observed time difference to GSM TBD	

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks			
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 and T2:	During T1 and T2:	During T1 and T2:
	Cells 1 and 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 3, 4, 5, 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB Ior(3, 4, 5, 6) = -69.73 dBm	-0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for lor(3,	Ec/lor ratio + TT Ior(3, 4, 5, 6) + TT
		4, 5, 6)	
	During T1:	During T1:	During T1:
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	-0.27 dB for lor(1) +0.13 dB for lor(2)	lor(1) + TT lor(2) + TT
	During T2:	During T2:	During T2:
	lor(1) = -59.73 dBm lor(2) = -62.73 dBm	+0.13 dB for lor(1) -0.27 dB for lor(2)	lor(1) + TT lor(2) + TT
8.2.2.2 Scenario 2: Multi carrier case		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].
	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	-0.80 dB -0.80 dB -0.80 dB -0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 1 during T1: lor(1) = -73.39 dBm lor(3, 4) = -77.39 dBm loc(1) = -70.00 dBm	Channel 1 during T1: -0.01 dB for lor(1) -0.01 dB for lor(3,4) 0.00 dB for loc(1)	Channel 1 during T1: lor(1) + TT lor(3, 4) + TT loc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 1 during T2:	Channel 1 during	Channel 1 during T2:
	lor(1) = -67.75 dBm lor(3, 4) = -74.75 dBm loc(1) = -70.00 dBm	T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.80 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 5 and 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	-0.80 dB -0.80 dB -0.80 dB -0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 2 during T1:	Channel 2 during	Channel 2 during T1:
	lor(2) = -67.75 dBm lor(5, 6) = -74.75 dBm loc(2) = -70.00 dBm	T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.80 dB for loc(2)	lor(2) + TT lor(5, 6) + TT loc(2) + TT
	Channel 2 during T2:	Channel 2 during	Channel 2 during T2:
	lor(2) = -73.39 dBm lor(5, 6) = -77.39 dBm loc(2) = -70.00 dBm	T2: -0.01 dB for lor(2) -0.01 dB for lor(5,6) 0.00 dB for loc(2)	lor(2) + TT lor(5, 6) + TT loc(2) + TT
8.2.3 UTRAN to GSM Cell Re-Selection	TBD		
8.2.3.1 Scenario 1: Both UTRA and GSM	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$	0.1 dB for $\underline{CPICH}_{\underline{E}_{c}}$	Formulas:
level changed	lor/loc = 0 dB	I_{or} 0.3 dB for lor/loc	$\frac{CPICH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	101/10C = 0 dB		lor/loc = ratio + TT
		0.3 dB for loc/RXLEV	(loc/Rxlev) _{test requirement} = (loc/Rxlev) _{minimum requirement} + TT
			lor/loc = 0.3 dB
			$\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}:$
	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$	0.1 dB for $\underline{CPICH}_{\underline{E}_{c}}$	Formulas:
	lor/loc = - 5 dB	I_{or} 0.3 dB for lor/loc	$\frac{CPICH _E_c}{I_{or}} = \text{ratio - TT}$ $\text{lor/loc = ratio - TT}$
		0.3 dB for loc/RXLEV	(loc/Rxlev) _{test requirement} = (loc/Rxlev) _{minimum requirement} - TT
			lor/loc = -5.3 dB
			$rac{\mathit{CPICH}_E_c}{I_{\mathit{or}}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $Ior/loc = 20 \text{ dB}$	0.1 dB for $CPICH_E_c$ I_{or} 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 20.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $Ior/loc = 20 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $I_{or} = \text{ratio} + \text{TT}$ $(Ioc/Rxlev)_{\text{test requirement}} = (Ioc/Rxlev)_{\text{minimum requirement}} + \text{TT}$ $Ior/Ioc = 20.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
8.2.4 FDD/TDD cell re- selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover		to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24]. During T1 and T2/T3/T4/T5/T6:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB Relative delay of paths received from cell 2 with respect to cell 1 = {-148 148} chips	+0.70 dB +0.70 dB +0.70 dB +0.70 dB 0.5 chips	Ec/lor ratio + TT {-148+TT 148-TT} chips
	During T1:	During T1:	During T1:
	Already covered above	Covered above	Already covered above
	During T2/T3/T4/T5/T6: Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB	During T2/T3/T4/T5/T6: +0.70 dB +0.70 dB +0.70 dB	During T2/T3/T4/T5/T6: Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
8.3.2 FDD/FDD Hard Handover	PICH_Ec/lor = -15 dB	+0.70 dB	Ec/lor ratio + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.2.1 Handover to intra-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 and T2 / T3:	<u>During T1 / T2 / T3:</u>	During T1 and T2 / T3:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT
	During T1:	During T1:	During T1:
	Already covered above	Covered above	Already covered above
	During T2 / T3:	During T2 / T3:	During T2 / T3:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT
8.3.2.2 Handover to inter-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	Channel 1 during T1 and T2 / T3:	Channel 1 during T1 and T2 / T3:	Channel 1 during T1 and T2 / T3:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.80 dB +0.80 dB +0.80 dB +0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 2 during T1:	Channel 2 during T1:	Channel 2 during T1:
	Not applicable	Not applicable	Not applicable
	Channel 2 during T2 / T3:	Channel 2 during T2 / T3:	Channel 2 during T2 / T3:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.80 dB +0.80 dB +0.80 dB +0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
8.3.5 Cell Re-selection in CELL_FACH			
8.3.5.1 One frequency present in the neighbour list		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	During T1 and T2:	During T1 and T2:	During T1 and T2:
	Cells 1 and 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 3, 4, 5, 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.50 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB	Ec/lor ratio + TT
	lor(3, 4, 5, 6) = -69.73 dBm	+0.03 dB for lor(3, 4, 5, 6)	lor(3, 4, 5, 6) + TT
	During T1:	During T1:	During T1:
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	-0.27 dB for lor(1) +0.13 dB for lor(2)	lor(1) + TT lor(2) + TT
	During T2:	During T2:	During T2:
	lor(1) = -59.73 dBm lor(2) = -62.73 dBm	+0.13 dB for lor(1) -0.27 dB for lor(2)	lor(1) + TT lor(2) + TT
8.3.5.2 Two frequencies present in the neighbour list		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this
the heighbodi net	Channel 1 during T1 and	Channel 1 during	Channel 1 during T1 and T2:
	<u>T2:</u>	T1 and T2:	
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Ec/lor ratio + TT
	Channel 1 during T1:	Channel 1 during T1:	Channel 1 during T1:
	lor(1) = -71.85 dBm lor(3, 4) = -76.85 dBm loc(1) = -70.00 dBm	+0.05 dB for lor(1) +0.05 dB for lor(3,4) 0.00 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT
	Channel 1 during T2:	Channel 1 during T2:	Channel 1 during T2:
	lor(1) = -67.75 dBm lor(3, 4) = -74.75 dBm loc(1) = -70.00 dBm	+0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.60 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 5 and 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Ec/lor ratio + TT
	Channel 2 during T1: lor(2) = -67.75 dBm lor(5, 6) = -74.75 dBm loc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.60 dB for loc(2)	Channel 2 during T1: lor(2) + TT lor(5, 6) + TT loc(2) + TT
	Channel 2 during T2: lor(2) = -71.85 dBm lor(5, 6) = -76.85 dBm loc(2) = -70.00 dBm	Channel 2 during T2: +0.05 dB for lor(2) +0.05 dB for lor(5,6) 0.00 dB for loc(2)	Channel 2 during T2: lor(2) + TT lor(5, 6) + TT loc(2) + TT
8.3.6 Cell Re-selection in CELL_PCH			
8.3.6.1 One frequency present in the	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/loc = 10.27 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{Ior/loc} = \text{ratio} + \text{TT}$
	Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1		loc unchanged
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_{-}E_{c}}{CPICH_{-}E_{c}} = -10 \text{ dB}$	0.1 dB for	Formulas:
	I_{or}	$\frac{CPICH_E_c}{I_{or}}$	$CPICH_{-}E_{c}$ = ratio + TT
	$I_{oc} = -70 \text{ dBm}$	0.3 dB for lor/loc	I_{or}
			lor/loc = ratio + TT
	lor/loc = 2.2 dB		loc unchanged
	Note: Parameters are valid for cell 1 at time T2 and cell		loc ratio unchanged
	2 at time T1		lor/loc = 2.5 dB
			$\underline{CPICH}_{-}E_{c}$ -9.9 dB:
			I_{or}
8.3.7 Cell Re-selection			
in URA_PCH 8.3.7.1 One frequency	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
present in the neighbour list			
8.3.7.2 Two frequencies present in	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
the neighbour list			
8.4 RRC Connection Control	TBD		
8.4.1 RRC Re-	TBD		
establishment delay 8.4.2 Random Access	RACH power difference	Measurement	Test parameter settings
	nominal 3dB ± 2dB UE setting uncertainty	TT:Power difference ±	unchanged.Power measurement:Upper limit +TT
	County and ortainty	1dBMaximum	Lower limit -TT
8.4.3 Transport format	DL Power control is ON so	Power-1dB / +0.7dB <u>0 dB for</u>	No test requirements for
combination selection in UE	DPCH_Ec/lor depends on TPC commands sent by UE	DPCH_Ec/lor	DPCH_Ec/lor
8.5 Timing and	TBD		
Signalling Characteristics			
8.5.1 UE Transmit Timing	TBD		
8.6 UE Measurements Procedures			
8.6.1 FDD intra			
frequency measurements			
8.6.1.1 Event triggered reporting in AWGN			uncertainties and the Test Tolerances ation of the Test Requirement in this
propagation conditions	document. The analysis is re-	corded in 3GPP TR 34	902 [24].
	During T1 / T2 / T3:	During T1 / T2 / T3:	<u>During T1 / T2 / T3:</u>
	Cell 1: CPICH_Ec/lor = -10 dB	+0.70 dB	Ec/lor ratio + TT
	PCCPCH_Ec/lor = -12 dB	+0.70 dB	Ec/lor ratio + TT
	SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	During T1/T3 only:	During T1/T3 only:	During T1/T3 only:
	Already covered above	Covered above	Already covered above
	During T2 only:	During T2 only:	During T2 only:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD		
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD		
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD		
8.6.2 FDD inter frequency measurements	TBD		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD		
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD		
8.6.3 TDD measurements	TBD		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD		
8.7 Measurements Performance Requirements	TBD		
8.7.1 CPICH RSCP	TBD		
8.7.1.1 Intra frequency measurements accuracy	TBD		
8.7.1.2 Inter frequency measurement accuracy	TBD		
8.7.2 CPICH Ec/lo			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.1 Intra frequency measurements accuracy	see table 8.7.1.1.1 andtable 8.7.1.1.2	±1 dB for loc±0.3 dB for lor/loc±0.1dB forEc/lor	Any TT applied to the nominal setting shall fulfil:Test 1 (absolute and relative): Io shall not go below - 69dBm Test 2(absolute and relative): Io shall not go above -50 dBmTest 3 (absolute and relative): Io shall not go below -94 dBm Ior/loc + TTTT on top of UE measurement accuracy:Absolute±1.0 dB for Ioc±0.3 dB for Ior/loc ±0.1dB for CPICH_Ec/lor ∑ 1.4dBRelative±0.3 dB for Ior/loc (cell1)±0.3 dB for Ior/loc (cell2)±0.1dB for CPICH_Ec/lor (cell1)±0.1dB for CPICH_Ec/lor (cell2)∑ 0.8dB
8.7.1.2 Inter frequency measurement accuracy	See table 8.7.1.2.1.1 andtable 8.7.1.2.1.2	±1 dB for loc±0.3 dB for loc1/loc2±0.3 dB for lor/loc±0.1dB forEc/lor	Any TT applied to the nominal setting shall fulfil:Test 1: Io shall not go above -50 dBmTest 2: Io shall not go below -94 dBmIor/loc + TTTT on top of UE measurement accuracy:±0.3 dB for loc1/loc2±0.3 dB for lor/loc (cell1)±0.3 dB for lor/loc (cell2)±0.1dB for CPICH_Ec/lor (cell1)±0.1dB for CPICH_Ec/lor (cell2)∑ 1.1 dB
8.7.2 CPICH Ec/lo			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.1 Intra frequency measurements accuracy	table 8.7.2.1.1.1 and table 8.7.2.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc	Any TT applied to the nominal setting shall fulfil:
		±0.1dB forEc/lor	Test 1(absolute and relative): Io shall not go above -50 dBm
			Test 2 (absolute and relative): Io shall not go below -87dBm
			Test 3 (absolute and relative): Io shall not go below -94 dBm
			CPICH Ec/Io shall stay in the UE accuracy ranges
			Ior/Ioc + TT
			TT on top of UE measurement accuracy:
			Absolute
			±0.3 dB for Ior/Ioc
			±0.1dB for CPICH_Ec/Ior
			∑ 0.4dB
			Relative
			Ioc1=Ioc2
			±0.3 dB for Ior/Ioc (cell1)
			±0.3 dB for Ior/Ioc (cell2)
			±0.1dB for CPICH_Ec/Ior (cell1)
			±0.1dB for CPICH_Ec/Ior (cell2)
			∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.2 Inter frequency measurement accuracy	table 8.7.2.2.2.1 and table 8.7.2.2.2.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB forEc/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -87 dBm Test 3: Io shall not go below -94 dBm
			TT on top of UE measurement accuracy: Ioc1=Ioc2. ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8 dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3A UTRA Carrier RSSI	Table 8.7.3.1.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Îor/Ioc	Any TT applied to the nominal setting shall fulfil: Test 1 (absolute): Io shall not go above -50 dBm Test 2 (absolute): Io shall not go below -69 dBm Test 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute tests: Test 1: Max TT= Io _{max} - Io _{nominal} Io _{nominal} = -51.15 dBm
8.7.3B Transport	TBD		
channel BLER 8.7.3C UE Transmitted power	Accuracy upper limit Accuracy lower limit Depends on PUEMAX see table 8.7.3C.2.1	0.7 dB	Formula: Upper accuracy limit + TT Lower accuracy limit – TT Add and subtract TT to all the values in table 8.7.3C.2.1.
8.7.4 SFN-CFN observed time	T able 8.7.4.1.2 and Table	±1.0 dB for loc	Intra and inter frequency case:
difference	8.7.4.2.2	±0.3 dB for lor/loc	Test 1: lo shall not go above -50 dBm
0.7.5.4. OEN CEN	Table 0.754.2	±0.5 chips for the actual SFN-CFN observed time difference	Test 2: No restrictions on lo value Test 3: lo shall not go below -94 dBm (Band 1), or below -92 dBm (Band II) or below -91 dBm (Band III) Îor/loc + TT TT on top of UE measurements accuracy: SFN-CFN observed time difference: 1.0 chips + TT
8.7.5.1 SFN-SFN observed time	T able 8.7.5.1.2	±1.0 dB for loc	Test 1: lo shall not go above -50 dBm
difference type 1		±0.3 dB for lor/loc ±0.5 chips for the actual SFN-SFN observed time difference	Test 2: No restrictions on lo value Test 3: Io shall not go below -94 dBm (Band 1), or below -92 dBm (Band II) or below -91 dBm (Band III) Îor/loc + TT TT on top of UE measurements accuracy: SFN-SFN observed time difference: 1.0 chips + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	Io -10.9 dB = Ioc, Test 1: Io = -94 dBm Test2 : Io = -72dBm Test3 : Io = -50dBm Timing Accuracy ± 1.5 chip	1 dB for loc 0.3 dB for lor/loc [0.5 chip for timing accuracy]	Test 1: lo = -92.7 dBm, loc = -103.6 dBm Formula: loc*(1-TT $_{loc}$ + (lor/loc-TT $_{lor/loc}$)) \geq -94
			Test 2: unchanged (no critical RF parameters)
			Test 3: lo = -51.3 dBm, loc = -62.2 dBm
			Formula: $loc^*(1+TT_{loc}+ (lor/loc+TT_{lor/loc})) \le -50$
			Timing accuracy [±2.0] chip
			Formulas:
			Upper limit +TT
			Lower limit –TT
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

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affected:	✓ Test specifications O&M Specifications
Other comments:	# The R99 test is revised to align with the changes to 25.133 defined in R4-040377.
	The change of W from "1" to "0", although not in R4-040377, is required for the test to work as intended. It is assumed that 25.133 will be changed to align.
	The Rel-4 and later test already includes Test Tolerances.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6 UE Measurements Procedures

8.6.1 FDD intra frequency measurements

8.6.1.1 Event triggered reporting in AWGN propagation conditions (R99)

8.6.1.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the Release 99 FDD UE.

8.6.1.1.2 Minimum requirements

The UE shall be able to identify and decode the SFN of a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify FDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io > -20 dB, SCH_Ec/Io > -20 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

In the CELL_DCH state the measurement period for intra frequency measurements is 200 ms. When no transmission gap pattern sequence is activated, the UE shall be capable of performing CPICH measurements for 8 identified intra-frequency cells of the monitored set and/or the active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When one or more transmission gap pattern sequences are activated, the UE shall be capable of performing CPICH measurements for at least $Y_{\text{measurement intra}}$ cells, where $Y_{\text{measurement intra}}$ is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the sub-clause 9.1.1 and 9.1.2 of TS 25.133 [2]. If the UE has identified more than $Y_{\text{measurement intra}}$ cells, the UE shall perform measurements of all identified cells but the reporting rate of CPICH measurements of cells from UE physical layer to higher layers may be decreased.

$$Y_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement FDD}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra}}} \right\} \underline{\text{cells}}$$

where

 $X_{\text{basic measurement FDD}} = 8 \text{ (cells)}$

T_{Measurement Period Intra} = 200 ms. The measurement period for Intra frequency CPICH measurements.

T_{Intra}: This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

 $T_{\text{basic identify FDD, intra}} = 800 \text{ ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.}$

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined T identify intra defined above.

 $\frac{\text{If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement}{\text{period, becomes undetectable for a period} < 5 \text{ seconds and then the cell becomes detectable again and triggers an event,} \\ \frac{\text{the measurement reporting delay shall be less than T}_{\text{Measurement Period Intra}} \text{ ms provided the timing to that cell has not}$

changed more than +/-32 chips, the UE CPICH measurement capabilities defined above are valid and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{identify\ intra}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\ Period\ Intra}$ when the L3 filter has not been used and the UE CPICH measurement capabilities defined above are valid.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.1.

8.6.1.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.1.4 Method of test

8.6.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.6.1.1.1 to 8.6.1.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used and that CPICH Ec/Io and SFN-CFN observed time difference shall be reported together with Event 1A.. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

<u>Table 8.6.1.1.1: General test parameters for Event triggered reporting in AWGN propagation conditions</u>

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	Comment
DCH parameters		DL and UL Reference	As specified in C.3.1 and C.2.1
		Measurement Channel 12.2 kbps	
Power Control		<u>On</u>	
Active cell		Cell 1	
Reporting range	<u>dB</u>	<u>3</u>	Applicable for event 1A and 1B
<u>Hysteresis</u>	<u>dB</u>	<u>0</u>	
<u>W</u>		<u>0</u>	Applicable for event 1A and 1B
Reporting deactivation		<u>0</u>	Applicable for event 1A
threshold			
Time to Trigger	<u>ms</u>	<u>0</u>	
Filter coefficient		<u>0</u>	
Monitored cell list size		<u>24</u>	
<u>T1</u>	<u>s</u>	<u>5</u>	
<u>T2</u>	<u>s</u>	<u>5</u>	
<u>T3</u>	<u>s</u>	1	
<u>T4</u>	<u>s</u>	<u>5</u>	

<u>Table 8.6.1.1.2: Cell specific test parameters for Event triggered reporting in AWGN propagation</u> conditions

<u>Parameter</u>	<u>Unit</u>	Cell 1				Cell 2			
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>
CPICH_Ec/lor	<u>dB</u>		<u>-1</u>	0				<u>-10</u>	
PCCPCH_Ec/lor	<u>dB</u>		<u>-1</u>	2				<u>-12</u>	
SCH_Ec/lor	<u>dB</u>		<u>-12</u>					<u>-12</u>	
PICH_Ec/lor	<u>dB</u>		<u>-1</u>	<u>5</u>				<u>-15</u>	
DPCH_Ec/lor	<u>dB</u>		Note 1				<u>/A</u>	Note 1	
<u>OCNS</u>			<u>Not</u>	<u>:e 2</u>		<u>-0.</u>	<u>941</u>	Note 2	
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>0</u>	<u>6.97</u>	<u>6.97</u>	<u>0</u>	-Infinity	<u>5.97</u>	<u>5.97</u>	-Infinity
$\underline{\hat{I}}_{or\ (Note\ 3)}$	<u>dBm</u>	<u>-70</u>	<u>-63.03</u>	<u>-63.03</u>	<u>-70</u>	-Infinity	<u>-64.03</u>	<u>-64.03</u>	-Infinity
I_{oc}	<u>dBm/3.84</u> <u>MHz</u>	<u>-70</u>							
CPICH_Ec/lo	<u>dB</u>	<u>-13</u>	<u>-13</u>	<u>-13</u>	<u>-13</u>	-Infinity	<u>-14</u>	<u>-14</u>	-Infinity
Propagation Condition					A	<u>WGN</u>			

Note 1: The DPCH level is controlled by the power control loop

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}

Note 3: The nominal Îor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.6.1.1.4.2 Procedure

- 1. The RF parameters are set up according to T1 in table 8.6.1.1.3, with cell 1 active.
- 2. The UE is switched on.
- 3. A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4. SS shall transmit a MEASUREMENT CONTROL message.
- 5. After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.1.3.
- 6. UE shall transmit a MEASUREMENT REPORT message triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7. During the time period T2 the SS shall after the Event 1A triggered measurement is reported send an Active Set Update command with activation time "start of T3" adding cell 2 to the active set. The Active Set Update message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T3.
- 8. After 6 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T4 in table 8.6.1.1.3.
- 9. UE shall transmit a MEASUREMENT REPORT message triggered by event 1B. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 10. After 5 seconds from the beginning of T4, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 11. Repeat steps 1-10 according to Annex F.6.2 Table 6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
<u>UE information elements</u>	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity -Measurement Command (10.3.7.46)	1 Modify
-Measurement Reporting Mode (10.3.7.49)	MODITY
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
Filter coefficient (10.3.7.9) -CHOICE mode	0 FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	OTTOTI LU/NO
-Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
<u>-Pathloss reporting indicator</u>	FALSE
 Reporting quantities for monitored set cells (10.3.7.5) Cell synchronisation information reporting indicator 	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting criteria
Intra-frequency measurement reporting criteria (10.3.7.39)	Citteria
-Parameters required for each event	<u>2</u>
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
	$\left \begin{array}{c} 0 \\ 0 \end{array} \right $
-Hysteresis -Threshold used frequency	0 dB
- I nresnoid used frequency -Reporting deactivation threshold	Not Present 0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells
Reporting Range ConstantCells forbidden to affect Reporting Range	3 dB Not Present
-W	0
-Hysteresis	<u>∨</u> 0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
	<u>0 ms</u>
-Amount of reporting	Not Present
-Reporting interval	<u>0 ms (note 2)</u>

Information Element/Group name	<u>Value/Remark</u>								
-Reporting cell status	Not Present								
Physical channel information elements									
-DPCH compressed mode status info (10.3.6.34)	Not Present								
Note 1: The SFN-CFN observed time difference is calculated	from the OFF and Tm parameters contained								
in the IE "Cell synchronisation information ", TS 25.33	in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331,								
	8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information								
reporting indicator" in IE "Cell reporting quantities" TS	reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in								
MEASUREMENT CONTROL.									
Note 2: Reporting interval = 0 ms means no periodical reporting	na								

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

Table 8.6.1.1.3: Test requirements for Event triggered reporting in AWGN propagation conditions

<u>Parameter</u>	<u>Unit</u>	<u>Cell 1</u>				Cell 2				
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	
CPICH_Ec/lor	<u>dB</u>		<u>-9</u>	<u>.3</u>				<u>-9.3</u>		
PCCPCH_Ec/lor	<u>dB</u>		<u>-1</u>	<u>1.3</u>			_	<u>11.3</u>		
SCH_Ec/lor	<u>dB</u>		<u>-1</u>	1. <u>3</u>				<u>11.3</u>		
PICH_Ec/lor	<u>dB</u>		<u>-14</u>	<u>4.3</u>			_	<u>14.3</u>		
DPCH_Ec/lor	<u>dB</u>		<u>No</u>	t <u>e 1</u>		N	<u>/A</u>	N	Note 1	
<u>OCNS</u>			Note 2				<u>.13</u>	Note 2		
\hat{I}_{or}/I_{oc} (Note 3)	<u>dB</u>	<u>0</u>	7.0	<u>7.0</u>	<u>0</u>	-Infinity	<u>6.0</u>	<u>6.0</u>	-Infinity	
$\hat{\underline{I}}_{or)}$	<u>dBm</u>	<u>-70</u>	<u>-63.0</u>	<u>-63.0</u>	<u>-70</u>	-Infinity	<u>-64.0</u>	<u>-64.0</u>	-Infinity	
I_{oc}	<u>dBm/3.84</u> <u>MHz</u>		<u>-70</u>							
CPICH Ec/lo	<u>dB</u>	<u>-12.3</u>	<u>-12.3</u>	<u>-12.3</u>	<u>-12.3</u>	-Infinity	<u>-13.3</u>	<u>-13.3</u>	-Infinity	
(Note 3)										
Propagation Condition		AWGN								

Note 1: The DPCH level is controlled by the power control loop

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}. Note 3: These parameters are not directly settable, but are derived by calculation from the settable parameters...

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of

8.6.1.1<u>A</u> Event triggered reporting in AWGN propagation conditions (Rel-4 and later)

8.6.1.1A.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the Rel-4 and later FDD UE.

8.6.1.1A.2 Minimum requirements

The UE shall be able to identify and decode the SFN of a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify FDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io \geq -20 dB, SCH_Ec/Io \geq -20 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

In the CELL_DCH state the measurement period for intra frequency measurements is 200 ms. When no transmission gap pattern sequence is activated, the UE shall be capable of performing CPICH measurements for 8 identified intra-frequency cells of the monitored set and/or the active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When one or more transmission gap pattern sequences are activated, the UE shall be capable of performing CPICH measurements for at least $Y_{\text{measurement intra}}$ cells, where $Y_{\text{measurement intra}}$ is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the sub-clause 9.1.1 and 9.1.2 of TS 25.133 [2]. If the UE has identified more than $Y_{\text{measurement intra}}$ cells, the UE shall perform measurements of all identified cells but the reporting rate of CPICH measurements of cells from UE physical layer to higher layers may be decreased.

$$\mathbf{Y}_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement FDD}} \cdot \frac{\mathbf{T}_{\text{Intra}}}{\mathbf{T}_{\text{Measurement Period, Intra}}} \right\} \text{ cells}$$

where

 $X_{\text{basic measurement FDD}} = 8 \text{ (cells)}$

 $T_{Measurement_Period\ Intra} = 200$ ms. The measurement period for Intra frequency CPICH measurements.

 T_{Intra} : This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

 $T_{basic_identify_FDD, intra} = 800$ ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined T _{identify intra} defined above.

If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement period, becomes undetectable for a period < 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $T_{Measurement_Period\ Intra}$ ms provided the timing to that cell has not changed more than +/-32 chips, the UE CPICH measurement capabilities defined above are valid and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{identify_intra}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement_Period\ Intra}$ when the L3 filter has not been used and the UE CPICH measurement capabilities defined above are valid.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.1.

8.6.1.1A.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.1A.4 Method of test

8.6.1.1A.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.6.1.1<u>A</u>.1 to 8.6.1.1<u>A</u>.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

Table 8.6.1.1 A.1: General test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference	As specified in C.3.1 and C.2.1
•		Measurement Channel 12.2 kbps	·
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation		0	Applicable for event 1A
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24	
T1	S	5	
T2	S	5	
T3	S	5	

Table 8.6.1.1A.2: Cell specific test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit		Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3	
CPICH_Ec/lor	dB		-10			-10		
PCCPCH_Ec/lor	dB		-12			-12		
SCH_Ec/lor	dB		-12			-12		
PICH_Ec/lor	dB		-15			-15		
DPCH_Ec/lor	dB		-17		N/A			
OCNS_Ec/lor	dB		-1.049		-0.941			
\hat{I}_{or}/I_{oc}	dB	0	6.97	0	-Infinity	5.97	-Infinity	
$\hat{I}_{or(Note1)}$	dBm	-70	-63.03	-70	-Infinity	-64.03	-Infinity	
I_{oc}	dBm/3.84 MHz	-70						
CPICH_Ec/lo	dB	-13	-13	-13	-Infinity	-14	-Infinity	
Propagation Condition		AWGN	•	•		•		

Note 1: The nominal lor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.6.1.1A.4.2 Procedure

- 1. The RF parameters are set up according to T1 in table 8.6.1.1A.3.
- 2. The UE is switched on.
- 3. A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4. SS shall transmit a MEASUREMENT CONTROL message.
- 5. After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.1A.3.

- 6. UE shall transmit a MEASUREMENT REPORT message triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7. After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3 in table 8.6.1.1A.3.
- 8. UE shall transmit a MEASUREMENT REPORT message triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9. After 5 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 10. Repeat steps 1-9 according to Annex F.6.2 Table 6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	value/Remaik
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	TDUE (0.1)
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	TDUE (Note 1)
-Cell synchronisation information reporting indicator -Cell Identity reporting indicator	TRUE (Note 1) TRUE
-Cell identity reporting indicator -CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
Throshold used frequency	L NI-4 Dunnanut
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Reporting deactivation threshold -Replacement activation threshold	0 Not Present
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger	0 Not Present 0 ms
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting	0 Not Present 0 ms Not present
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval	0 Not Present 0 ms Not present 0 ms (Note 2)
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status	0 Not Present 0 ms Not present 0 ms (Note 2) Not Present
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status -Intra-frequency event identity	0 Not Present 0 ms Not present 0 ms (Note 2) Not Present Event 1B
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status -Intra-frequency event identity -Triggering condition 1	0 Not Present 0 ms Not present 0 ms (Note 2) Not Present Event 1B Active set cells and monitored set cells
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status -Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant	0 Not Present 0 ms Not present 0 ms (Note 2) Not Present Event 1B Active set cells and monitored set cells 3 dB
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status -Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range	0 Not Present 0 ms Not present 0 ms (Note 2) Not Present Event 1B Active set cells and monitored set cells 3 dB Not Present
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status -Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W	0 Not Present 0 ms Not present 0 ms (Note 2) Not Present Event 1B Active set cells and monitored set cells 3 dB Not Present 1.0
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status -Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis	0 Not Present 0 ms Not present 0 ms (Note 2) Not Present Event 1B Active set cells and monitored set cells 3 dB Not Present 1.0 0 dB
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status -Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency	0 Not Present 0 ms Not present 0 ms (Note 2) Not Present Event 1B Active set cells and monitored set cells 3 dB Not Present 1.0 0 dB Not Present
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status -Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold	0 Not Present 0 ms Not present 0 ms (Note 2) Not Present Event 1B Active set cells and monitored set cells 3 dB Not Present 1.0 0 dB Not Present Not Present
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status -Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold	0 Not Present 0 ms Not present 0 ms (Note 2) Not Present Event 1B Active set cells and monitored set cells 3 dB Not Present 1.0 0 dB Not Present Not Present Not Present Not Present
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status -Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold -Time to trigger	O Not Present O ms Not present O ms (Note 2) Not Present Event 1B Active set cells and monitored set cells 3 dB Not Present 1.0 O dB Not Present
-Reporting deactivation threshold -Replacement activation threshold -Time to trigger -Amount of reporting -Reporting interval -Reporting cell status -Intra-frequency event identity -Triggering condition 1 -Reporting Range Constant -Cells forbidden to affect Reporting Range -W -Hysteresis -Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold	O Not Present O ms Not present O ms (Note 2) Not Present Event 1B Active set cells and monitored set cells 3 dB Not Present 1.0 O dB Not Present Not Present Not Present Not Present

	Information Element/Group name	Value/Remark	
-Repo	rting cell status	Not Present	
Physical channel information elements			
-DPCH co	ompressed mode status info (10.3.6.34)	Not Present	
Note 1:	Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained		
in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.33			
8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information			
reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in			
Note 2:	Reporting interval = 0 ms means no periodical reporting	na	

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.1<u>A</u>.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

Table 8.6.1.1A.3: Test requirements for Event triggered reporting in AWGN propagation conditions

Parameter	Unit		Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3	
CPICH_Ec/lor	dB		-9.3			-9.3		
PCCPCH_Ec/lor	dB		-11.3			-11.3		
SCH_Ec/lor	dB		-11.3			-11.3		
PICH_Ec/lor	dB		-14.3			-14.3		
DPCH_Ec/lor	dB		-16.3			N/A		
OCNS			-1.26			-1.13		
$\hat{I}_{or}/I_{oc\ (Note\ 1)}$	dB	0	7.0	0	-Infinity	6.0	-Infinity	
\hat{I}_{or}	dBm	-70	-63.0	-70	-Infinity	-64.0	-Infinity	
I_{oc}	dBm/3.84 MHz				-70	·		
CPICH_Ec/lo (Note 1)	dB	-12.3	-12.3	-12.3	-Infinity	-13.3	-Infinity	
Propagation Condition		AWGN						
Note 1: These pa	arameters are	not directly:	settable, but a	re derived by	calculation from	the settable p	arameters	

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Annex F (normative): General test conditions and declarations

The requirements of this clause apply to all applicable tests in the present document.

Many of the tests in the present document measure a parameter relative to a value that is not fully specified in the UE specifications. For these tests, the Minimum Requirement is determined relative to a nominal value specified by the manufacturer.

When specified in a test, the manufacturer shall declare the nominal value of a parameter, or whether an option is supported.

In all the relevant clauses in this clause all Bit Error Ratio (BER), Block Error Ratio (BLER), False transmit format Detection Ratio (FDR) measurements shall be carried out according to the general rules for statistical testing in clause F.6.

F.1 Acceptable uncertainty of Test System

The maximum acceptable uncertainty of the Test System is specified below for each test, where appropriate. The Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, and the equipment under test to be measured with an uncertainty not exceeding the specified values. All ranges and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95 % is the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment.

For RF tests it should be noted that the uncertainties in clause F.1 apply to the Test System operating into a nominal 50 ohm load and do not include system effects due to mismatch between the DUT and the Test System.

F.1.5 Requirements for support of RRM

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6 UE Measurements Procedures		
8.6.1 FDD intra frequency measurements		
8.6.1.1 Event triggered reporting in	During T1/T4 and T2/T3:	
AWGN propagation conditions (R99)	$CPICH$ E_{α}	
	$\frac{CPICH _E_c}{I_{or}} = \pm 0.1 \text{ dB}$	
	I_{or} (1) ±0.7 dB	
	<u>I_{oc}</u> <u>±1.0 dB</u>	
	During T1/T4 only:	
	Already covered above	
	During T2/T3 only:	
	I_{or} (2) relative to I_{or} (1) ±0.3 dB	
8.6.1.1A Event triggered reporting in	During T1/T3 and T2:	
AWGN propagation conditions (Rel-4 and	$\frac{CPICH _E_c}{}$ ±0.1 dB	
<u>later)</u>	I_{or}	
	I_{or} (1) ±0.7 dB	
	I_{oc} ±1.0 dB	
	During T1/T3 only:	
	Already covered above	
	Timeday covered above	
	During T2 only:	
	$I_{\it or}$ (2) relative to $I_{\it or}$ (1) ±0.3 dB	
8.6.1.1 and 8.6.1.1A	Assumptions:	
	a) The contributing uncertainties for lor(n), cl	
	derived according to ETR 273-1-2 [16], with	
	b) Within each cell, the uncertainty for lor(n), uncorrelated to each other.	, and channel power ratio are
	c) Across different cells, the channel power r	ratio uncertainties may have any
	amount of positive correlation from zero (und	
	correlated).	
	d) The uncertainty for loc and lor(n) may have	
	correlation from zero (uncorrelated) to one (f	
	e) The absolute uncertainty of lor(1) and the	relative uncertainty of Ior(2),
	are uncorrelated to each other. An explanation of correlation between uncer	tainties, and of the rationals
	behind the assumptions, is recorded in 3GPI	

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.6 UE Measurements Procedures	1001 1010141100
8.6.1 FDD intra frequency measurements	
8.6.1.1 Event triggered reporting in	During T1/T4 and T2/T3:
AWGN propagation conditions (R99)	+0.70 dB for all Cell 1 Ec/lor ratios
	During T1/T4 only: Already covered above
	During T2/T3 only: +0.70 dB for all Cell 2 Ec/lor ratios
8.6.1.1A Event triggered reporting in	During T1/T3 and T2:
AWGN propagation conditions (Rel-4 and	+0.70 dB for all Cell 1 Ec/lor ratios
<u>later)</u>	During T1/T3 only:
	Already covered above
	During T2 only:
	+0.70 dB for all Cell 2 Ec/lor ratios

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121		
8.6 UE Measurements Procedures					
8.6.1 FDD intra frequency					
measurements					
8.6.1.1 Event triggered reporting in AWGN			uncertainties and the Test Tolerances ation of the Test Requirement in this		
propagation conditions	document. The analysis is re-	corded in 3GPP TR 34	902 [24].		
(R99)	During T1 to T4:	During T1 to T4:	During T1 to T4:		
	Cell 1: CPICH_Ec/lor = -10 dB	10.70 dB	Ec/lor ratio + TT		
	PCCPCH_Ec/lor = -10 dB	+0.70 dB +0.70 dB	Ec/lor ratio + TT		
	SCH Ec/lor = -12 dB	+0.70 dB	Ec/lor ratio + TT		
	PICH_Ec/lor = -15 dB	+0.70 dB	Ec/lor ratio + TT		
	During T1/T4 only :	During T1/T4 only:	During T1/T4 only:		
	Already covered above	Covered above	Already covered above		
	During T2/T3 only:	During T2/T3 only:	During T2/T3 only:		
	Cell 2:				
	CPICH Ec/lor = -10 dB	+0.70 dB	Ec/lor ratio + TT		
	PCCPCH_Ec/lor = -12 dB	+0.70 dB	Ec/lor ratio + TT		
	$\frac{SCH Ec/lor = -12 \text{ dB}}{PICH_Ec/lor = -15 \text{ dB}}$	+0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT		
8.6.1.1 <u>A</u> Event triggered reporting in AWGN propagation	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].				
conditions (Rel-4 and	During T1 / T2 / T3:	During T1 / T2 / T3:	During T1 / T2 / T3:		
later)	Cell 1:				
	CPICH_Ec/lor = -10 dB	+0.70 dB	Ec/lor ratio + TT		
	PCCPCH_Ec/lor = -12 dB	+0.70 dB	Ec/lor ratio + TT		
	SCH_Ec/lor = -12 dB	+0.70 dB	Ec/lor ratio + TT		
	PICH_Ec/lor = -15 dB	+0.70 dB	Ec/lor ratio + TT		
	During T1/T3 only :	During T1/T3 only:	During T1/T3 only:		
	Already covered above	Covered above	Already covered above		
	During T2 only:	During T2 only:	During T2 only:		
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT		
	1 O 1_E0/10 = -13 ub	+0.70 db	LU/IUI IAIIU T I I		

CHANGE REQUEST					
	34.121 CR 424 #rev - # 0	Current version: 5.4.0			
	using this form, see bottom of this page or look at the				
Proposed change	affects: UICC apps第 <mark></mark> ME <mark>X</mark> Radio Acc	cess Network Core Network			
Title: 第	Correction of RRM test case 8.7.3A (GSM carrier R	RSSI)			
Source: #	Ericsson				
Work item code: ₩	TEI	<i>Date:</i>			
	Use one of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900. The GSM carrier RSSI test case need to be exprelative measurement accuracy. Update of refe	R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Danded to cover both absolute and rence section. Cost Ccuracy for following cases frequency (BCCH1) ements on different ARFCN			
Consequences if not approved:	★ Lack of test coverage for GSM Carrier RSSI				
Clauses affected: Other specs Affected: Other comments:	 第 2, 8.7.3A Y N X Other core specifications X Test specifications X O&M Specifications 米 Affects REL-5, REL-4 and R99. 				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked \$\mathbb{X}\$ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

<Start of first modified section>

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document.
- For a Release 1999 UE, references to 3GPP documents are to version 3.x.y.
- For a Release 4 UE, references to 3GPP documents are to version 4.x.y.
- For a Release 5 UE, references to 3GPP documents are to version 5.x.y.
- [1] 3GPP TS 25.101 "UE Radio transmission and reception (FDD)".
- [2] 3GPP TS 25.133 "Requirements for Support of Radio Resource Management (FDD)".
- [3] 3GPP TS 34.108 "Common Test Environments for User Equipment (UE) Conformance Testing".
- [4] 3GPP TS 34.109 "Terminal logical test interface; Special conformance testing functions".
- [5] 3GPP TS 25.214 "Physical layer procedures (FDD)".
- [6] 3GPP TR 21.905 "Vocabulary for 3GPP Specifications".
- [7] 3GPP TR 25.990 "Vocabulary".
- [8] 3GPP TS 25.331: "Radio Resource Control (RRC); Protocol Specification".
- [9] 3GPP TS 25.433 "UTRAN lub Interface NBAP Signalling".
- [10] ITU-R Recommendation SM.329: "Spurious emissions".
- [11] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".
- [12] 3GPP TS 25.303: "Interlayer Procedures in Connected Mode".
- [13] 3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".
- [14] 3GPP TS 25.213: "Spreading and modulation (FDD)".
- [15] 3GPP TS 25.223: "Spreading and modulation (TDD)".
- [16] ETSI ETR 273-1-2: "Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".
- [17] 3GPP TR 25.926: "UE Radio Access Capabilities".
- [18] 3GPP TR 21.904: "UE capability requirements".
- [19] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".
- [20] 3GPP TS 05.08: "Technical Specification Group GSM/EDGE Radio Access Network Digital cellular telecommunications system; Radio subsystem link control".

[21]	3GPP TS 34.123-1: "User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification".
[22]	3GPP TS 25.215: "Physical Layer – Measurements (FDD)".
[23]	3GPP TS 25.101 "UE Radio transmission and reception (FDD), Release 5".
[24]	3GPP TR 34.902 " Derivation of test tolerances for multi-cell Radio Resource Management (RRM) conformance tests ".
[25]	3GPP TS 51.010-1: "Mobile Station (MS) conformance specification; Part 1: Conformance specification ".
[26]	3GPP TS 25.307 "Requirements on UEs supporting a release independent frequency band".
[27]	ITU-T recommendation O.153: "Basic parameters for the measurement of error performance at bit rates below the primary rate".
[28]	3GPP TS 05.05: "Technical Specification Group GSM/EDGE Radio Access Network; Radio transmission and reception".

<End of modified section>

<Start of next modified section>

8.7.3A GSM Carrier RSSI

8.7.3A.1 Definition and applicability

The GSM carrier RSSI measurement is used for handover between UTRAN and GSM.

The requirements and this test apply to the combined FDD and GSM UE.

8.7.3A.2 Minimum Requirements

The UE shall meet the measurement accuracy requirements stated for RXLEV below, when the given measurement time allows the UE to take at least 3 GSM carrier RSSI samples per GSM carrier in the monitored set during the measurement period.

The absolute accuracy shall be as follows:

The R.M.S received signal level at the receiver input shall be measured by the UE and the BSS over the full range of -110 dBm to -48 dBm with an absolute accuracy of ± 4 dB from -110 dBm to -70 dBm under normal conditions and ± 6 dB over the full range under both normal and extreme conditions. The R.M.S received signal level at the receiver input shall be measured by the UE above -48 dBm up to -38 dBm with an absolute accuracy of ± 9 dB under both normal and extreme conditions.

If the received signal level falls below the reference sensitivity level for the type of UE or BSS, then the measured level shall be within the range allowing for the absolute accuracy specified above. In case the upper limit of this range is below the reference sensitivity level for the type of UE or BSS, then the upper limit shall be considered as equal to the reference sensitivity level.

The relative accuracy shall be as follows:

If signals of level x1 and x2 dBm are received (where x1 \leq x2) and levels y1 and y2 dBm respectively are measured, if x2 - x1 < 20 dB and x1 is not below the reference sensitivity level, then y1 and y2 shall be such that:

 $(x2 - x1) - a \le y2 - y1 \le (x2 - x1 + b)$ if the measurements are on the same or on different RF channel within the same frequency band;

<u>and</u>

 $(x^2 - x^1) - c \le y^2 - y^1 \le (x^2 - x^1 + d)$ if the measurements are on different frequency bands:

a, b, c and d are in dB and depend on the value of x1 as follows:

For single band MS or BTS and measurements between ARFCN in the same band for a multiband

MS or BTS;

 \underline{s} = reference sensitivity level as specified in 3GPP TS 05.05 [28].

For measurements between ARFCN in different bands;

s = the reference sensitivity level as specified in 3GPP TS 05.05 [28] for the band including x1.

At extreme temperature conditions an extra 2 dB shall be added to c and d in above table.

The selectivity of the received signal level measurement shall be as follows:

- for adjacent (200 kHz) channel ≥ 16 dB;

- for adjacent (400 kHz) channel \geq 48 dB;
- for adjacent (600 kHz) channel \geq 56 dB.

The selectivity shall be met using random, continuous, GSM-modulated signals with the wanted signal at the level 20 dB above the reference sensitivity level.

The reporting range and mapping specified for RXLEV in TS 05.08 shall apply.

The normative reference for this requirement is TS 25.133 [2] clause 8.1.2.5 and 9.1.4 and TS 05.08 [20] clause 8.1.2.

8.7.3A.3 Test purpose

The purpose of this test is to verify that the GSM Carrier RSSI measurement accuracy in CELL_DCH state, for UE that needs compressed mode to perform GSM measurements, is within the specified limits. This measurement is for UTRAN to GSM handover evaluation.

8.7.3A.4 Method of test

8.7.3A.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In the test in Cell_DCH state compressed mode with purpose "GSM Carrier RSSI Measurement" is applied to measure on GSM. The gap length is 7, detailed definition is in clause C.5, Set 2 of table C.5.2 except for TGPRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 – TTI/10msec))mod 256". Table 8.7.3A.1 defines the limits of signal strengths and code powers on the UMTS FDD cell, where the requirement is applicable. In the measurement control information it is indicated to the UE that periodic reporting of the GSM RSSI measurement.

Table 8.7.3A.1: General GSM Carrier RSSI test parameters

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in section C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns - GSM carrier RSSI measurement		Compressed mode reference pattern 2 Set 2	As specified in table C.5.2 section C.5
Inter-RAT measurement quantity		GSM Carrier RSSI	
BSIC verification required		Not required	
Monitored cell list size		6 GSM neighbours including ARFCN 1	Measurement control information is sent before the compressed mode patterns starts.

Table 8.7.3A.2: Cell specific GSM Carrier RSSI test parameters

Parameter	Unit	Cell 1
UTRA RF Channel number	-	Channel 1
Îor/loc	DB	-1
loc	dBm/ 3.84 MHz	-70
Propagation condition	-	AWGN

1) The SS is set to produce the BCCHs of 6 surrounding cells at 28 dBµVemf(). The fading profile for the BCCHs of the serving and surrounding cells will be set to static, see 51.010-1 [25]. The limits of the GSM test parameters are defined in TS 05.08 [20].

2) After 30 seconds a call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Cell 1 is set up according to table 8.7.3A.1 and 8.7.3A.2.

8.7.3A.4.2 Procedure

- 1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 3) SS shall transmit MEASUREMENT CONTROL message.
- 4) UE shall transmit periodically MEASUREMENT REPORT messages.
- 5) SS shall check GSM carrier RSSI value of the GSM cells in MEASUREMENT REPORT messages. The measurement is done in 105 steps. The initial signal levels of the BCCHs of the surrounding cells are adjusted according to table 8.7.3A.38.3.7A.3. At each step the SS keeps the signal levels stable for one reporting period, except at steps 21 + m × 21 where the level is held stable for 1,75 reporting periods. The GSM CARRIER RSSI value for the period in which the change occurs (reported in the following period) is discarded. The SS records the GSM CARRIER RSSI values reported for the surrounding cell BCCHs in steps 1 + m × 21 and 21 + m × 21. The GSM CARRIER RSSI values for BCCH 1 are recorded by the SS for all 105 steps.

NOTE: This extension at steps $21 + m \times 21$ is to allow an extra quarter reporting period for the UE to stabilize for steps $1 + m \times 21$.

			J		•	. ,	
	ARFCN	BCCH1	BCCH2	ВССН3	BCCH4	BCCH5	ВССН6
Step	GSM 450	276	293	264	269	281	288
	GSM 480	323	340	311	316	328	335
	GSM 900:	62	124	20	40	80	100
	DCS 1 800	700	885	585	660	790	835
	PCS 1 900	700	805	585	660	790	550
	450/900	124	276	293	269	288	1
	480/900	124	323	340	316	335	1
	450/1 800	885	276	293	269	288	512
	480/1 800	885	323	340	316	335	512
	900/1 800	885	62	124	40	100	512
	450/900/1 800	124	276	885	293	1	512
	480/900/1 800	124	323	885	340	1	512
	GSM 850	189	251	150	170	210	230
	GSM 750	475	511	440	455	485	500
	750/850	251	475	511	455	485	128
$1 + m \times 21$		64,5 - m × 10	64,5 - m × 10				
$2 + m \times 21$		$63,5 - m \times 10$	54,5 - m × 10	54,5 - m × 10			
$3 + m \times 21$		$62,5 - m \times 10$	$44,5 - m \times 10$	$44,5 - m \times 10$	44,5 - m × 10	$44,5 - m \times 10$	44,5 - m × 10
				•		44,5 - m × 10	44,5 - m × 10
$17 + m \times 21$						44,5 - m × 10	44,5 - m × 10
$18 + m \times 21$				•		44,5 - m × 10	44,5 - m × 10
						44,5 - m × 10	44,5 - m × 10
$21 + m \times 21$		44,5 - $m \times 10$	44,5 - m × 10				
m = 0, 1, 2, 3	, 4.					- 	-

Table 8.7.3A.38.3.7A.3: Signal levels at receiver input in $dB\mu Vemf()$

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	Valueritemant
UE Information Elements	
-RRC transaction identifier	0 Not Present
-Integrity check info -Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	Not December
-URA identity RB information elements	Not Present
-Downlink counter synchronisation info	Not Present
PhyCH information elements	Not Flesent
-Frequency info	Not Present
Uplink radio resources	11011100111
-Maximum allowed UL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	N / P
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info -Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
Transmission and nattorn acquires	
-Transmission gap pattern sequence	
configuration parameters -TGMP	GSM carrier RSSI measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	12
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL SF/2
-Downlink compressed mode method -Uplink compressed mode method	SF/2 SF/2
-Downlink frame type	SF/2 B
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value -Downlink information per radio link list	Not Present
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100

-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	- aras, roman
<u> </u>	
UE information elements	
-RRC transaction identifier	0 Not Broomt
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	A aknowladged made DLC
 Measurement Report Transfer Mode Periodical Reporting / Event Trigger Reporting 	Acknowledged mode RLC Periodical reporting
Mode	r enodical reporting
-Additional measurement list	Not Present
-Additional measurement list -CHOICE Measurement Type	Inter-RAT measurement
-Inter-RAT measurement	Inter-IVAT measurement
-Inter-RAT measurement objects list	
-CHOICE Inter-RAT cell removal	Not Present
-New inter-RAT cells	Not i resent
-Inter-RAT cell id	9
-CHOICE Radio Access Technology	GSM
-GSM	Solvi
-Cell individual offset	0
-Cell selection and re-selection info	Not Present
-BSIC	Not i room
-Base transceiver Station Identity Code (BSIC)	Reference to TS 34.108 table 6.1.10 for Cell 9
-Band indicator	According to PICS/PIXIT
-BCCH ARFCN	1
-Cell for measurement	Not Present
-Inter-RAT measurement quantity	
-Measurement quantity for UTRAN quality	Not Present
estimate	
-CHOICE system	GSM
-GSM	
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	not required
-Inter-RAT reporting quantity	
-UTRAN estimated quality	FALSE
-CHOICE system	GSM
-GSM	
-Observed time difference to GSM cell Reporting	FALSE
indicator	
-GSM carrier RSSI reporting indicator	TRUE
-Reporting cell status	
-CHOICE reported cell	Report cells within active set or within virtual
	active set or of the other RAT
-Maximum number of reported cells	6
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	N / B /
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for inter – RAT test cases

This message is common for all inter-RAT test cases in clause 8.7 and is described in Annex I.

8.7.3A.5 Test requirements

8.7.3A.5.1 Relative accuracy of measurements on different ARFCN

For normal and each of the 4 extreme conditions tested the following applies:

- a) For each of the steps 1, 21, 22, 42, 43 and 64, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 4 if the measurements are on the same or on different RF channel within the same frequency band and no more than 8 (12 for extreme temperature conditions) if the measurements are on different frequency bands.
- b) For each of the steps 63 and 85, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 5 for small UE, DCS 1 800 and PCS 1 900 (Class 1 and 2) UE or 4 for other UE if the measurements are on the same or on different RF channel within the same frequency band and no more than 9 for small UE, DCS 1 800 and PCS 1 900 (Class 1 and 2) UE or 8 for other UE and other PCS 1 900 UE (13 and 12 for extreme temperature conditions) if the measurements are on different frequency bands.
- c) For step 84, of the 6 reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 5 if the measurements are on the same or on different RF channel within the same frequency band and no more than 9 (13 for extreme temperature conditions) if the measurements are on different frequency bands.
- d) For step 105, of the reported GSM CARRIER RSSI values checked, the difference between the minimum reported GSM CARRIER RSSI value and the maximum reported GSM CARRIER RSSI value shall be no more than 6 if the measurements are on the same or on different RF channel within the same frequency band and no more than 10 (14 for extreme temperature conditions) if the measurements are on different frequency bands.

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3A.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

NOTE: It is not mandatory for the MS to report any of the BCCHs in step 105.

8.7.3A.5.2 Relative accuracy at a single frequency (BCCH1)

For normal and each of the 4 extreme conditions tested the following applies:

```
For: n \le 21 and RXLEV_1 = 63
```

 $RXLEV_n$ - (63 - n + r) shall be between:

-2 and +2

NOTE 1: This formula allows for an MS with an absolute accuracy worse than +0,5 dB and therefore reporting an RXLEV of 63 for more than one step. The formula checks the relative accuracy from the lowest input level for which the MS last reports RXLEV of 63.

Otherwise:

 $\underline{RXLEV}_{(m^*21+1)}$ - $\underline{RXLEV}_{(m^*21+n)}$ - $\underline{n+1}$ shall be between:

-2 and +2

for steps 2 to 62 and 65 to 71 for DCS 1 800 class 1/2 MS; or steps 2 to 62 and 65 to 73 for DCS 1 800 class 3, PCS 1 900 (Class 1&2) and Small GSM MS; or 2 to 75 for other MS and other PCS 1 900 MS.

-3 and +2

for steps 63 and 72 to 96 for DCS 1 800 class 1/2 MS; or steps 63 and 74 to 98 for DCS 1 800 class 3, PCS 1 900 (Class 1 and 2) and Small GSM MS; or

76 to 100 for other MS and other PCS 1 900 MS.

-4 and +2

for steps 97 to 105 for DCS 1 800 class 1/2 MS; or steps 99 to 105 for DCS 1 800 class 3, PCS 1 900 (Class 1 and 2) and Small GSM MS; or 101 to 105 for other MS and other PCS 1 900 MS.

where: $1 < n \le 21$ and $0 \le m \le 4$ as identified in table 8.7.3A.3, and r is the number of the last step where RXLEV of 63 was reported.

NOTE 2: It is not mandatory for the MS to report BCCH1 for steps greater than 99 for GSM 400, GSM 700,

GSM 850 or GSM 900 Small MS or 101 for other GSM and other PCS 1 900 MS or 97 for a DCS 1 800

Class 1 or Class 2 MS and 99 for DCS 1 800 Class 3 and PCS 1 900 (Class 1 and 2) MS. If the MS

reports a level and the upper limit for this step in the above formula implies a level below the reference sensitivity level for the type of MS, then the upper limit shall be considered as equal to a value corresponding to the reference sensitivity level.

8.7.3A.5.3 Absolute accuracy

For each BCCH reported, $|RXLEV_{MS} + m \times 10 - 62|$ shall be no more than:

- 4 for steps 64 and 85 under normal conditions.
- 6 for steps 64 and 85 under extreme conditions.
- 6 for steps 1, 22 and 43 under normal and extreme conditions.

where: $0 \le m \le 4$ as identified in table 8.7.3A.3.

<End of modified section>

3GPP TSG T WG1 Meeting #24 Toronto, Canada, 26-30 July 2004

Other comments:

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F.6.3 Statistical Testing of HSDPA Receiver Performance

F.6.3.1 Definition

Information Bit Throughput R:

The measured information bit throughput R is defined as the sum (in kilobits) of the information bit payloads (excluding the 24-bit HS-DSCH CRC) successfully received during the test interval, divided by the duration of the test interval (in seconds).

F.6.3.2 Mapping throughput to block error ratio

- a) In measurement practice the UE indicates successfully received information bit payload by signalling an ACK to the SS.
 - If payload is received, but damaged and cannot be decoded, the UE signals a NACK.
- b) Only the ACK and NACK signals, not the data bits received, are accessible to the SS. The number of bits is known in the SS from knowledge of what payload was sent.
- c) For fixed reference channel the number of bits in a TTI is fixed during one test.
- d) The time in the measurement interval is composed of successful TTIs (ACK), unsuccessful TTIs (NACK) and DTX-TTIs.
- e) DTX-TTIs occur regularly according to the H-set. (regDTX). In real live this is the time when other UEs are served. regDTX vary from test to test but are fixed within the test.
- f) Additional DTX-TTIs occur statistically when the UE is not responding ACK or NACK where it should. (statDTX)

 This may happen when the UE was not expecting data or decided that the data were

The pass fail decision is done by observing the number of NACKs number of ACKs and number of statDTXs

(regDTX is implicitly known to the SS)

The ratio: (NACK + statDTX) / (NACK+ statDTX +ACK) is the Bock Error Ratio BLER. Taking into account the time, consumed by the ACK-, NACK-, and DTX-TTIs (regular and statistical), BLER can be mapped unambiguously to throughput for any single FRC test.

F.6.3.3 Bad DUT factor

not intended for it.

Note:

Data throughput in a communication system is of statistical nature and must be measured and decided pass or fail. The specified limit of throughput related to the ideal throughput in different throughput tests is in the range of a few % to near 100%. To make it comparable with BER, we define the complement of the relative throughput: BLER as defined above. Complementary this is in the range of near 100% down to a few % For e.g. BLER = 1%, the currently in BER BLER used Bad DUT factor M=1.5 is highly meaningful. For e.g. BLER = 99%, the currently used M=1.5 obviously meaningless.

An appropriate definition of the bad DUT factor is illustrated in figure F.6.3.3: constant and variable Bad DUT factor.

It illustrates how to find the Bad BLER when the nominal BLER is given.

- 1) In the range 0% < nominal BLER>10% the Bad DUT factor is constant 1.5
- 2) In the range 90% < bad BLER>100% it decreases to 1. (symmetrical to (1))
- 3) The range in between is interpolated by an arc section.

The example shows: nominal BLER=35,6% \rightarrow bad BLER=47.67.5% \rightarrow M=1.34 (blue mapping)

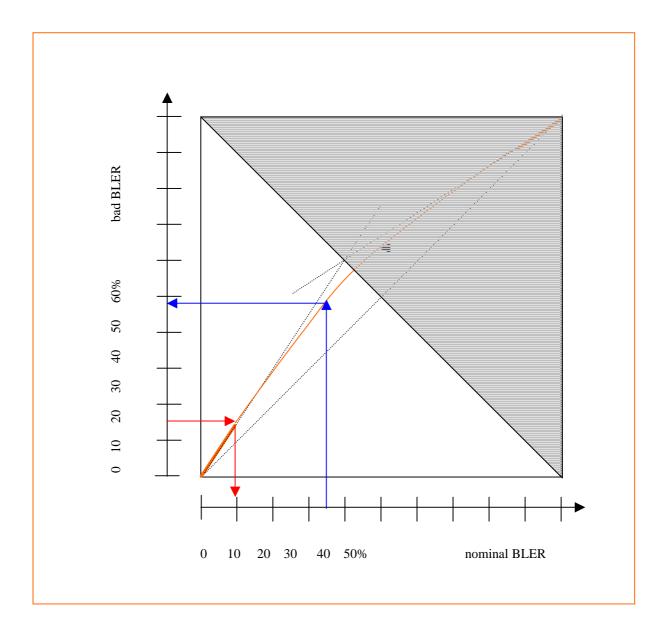


Figure F.6.3.3: constant and variable Bad DUT factor

Formula: For
$$0 < BLER <= 0.1$$
: $M = 1.5$

For $0.1 < BLER <.9$:
$$M(BLER) := \frac{\sqrt{r^2 - (BLER - 2.35)^2}}{BLER} - \frac{1.35}{BLER}$$

For
$$0.9 \le BLER < 1$$
: $M(BLER) = 2/3BLER + 1/3$

With BLER: nominal Block Error Ratio (0<BLER<1)

With r = 2.70415 (Radius of the arc)

F.6.3.3.1 Bad DUT factor, range of applicability

There<u>Inaccuracy</u> is one practical reason to avoid the grey shaded area of figure F.6.3.3: constant and variable Bad DUT factor, which is inaccuracy. For BLER near 1 the Bad DUT factor M is near 1. For M=1, exactly, the pass and fail criteria do not intersect. The test never is finalised.

For M near 1 the pass and fail criteria exhibit a very smooth intersection. In addition the binomial distribution and its inverse are of discrete nature. Therefore the test limit and the number of samples is calculable only very ambiguous.

It is proposed to apply the bad DUT factor only in the not shaded area of figure F.6.3.3.

This is done by the following:

Standard testBLER mode:

Use BLER as defined above in the range of 0 to 50%, use M >1 as defined above.

The Test Limit will be > the Test Requirement in the table F.6.3.5. below.

Complementary testRelative Throughput mode:

If BLER is in the range 50 to 100%, use 1-BLER instead. Use m<1 instead of M.

1-BLER is the relative throughput with respect to the ideal throughput.

As a consequence, the Test Limit < Test Requirement

Formula for m: For 0 < (1-BLER) <= 0.15: m = 1/1.5

$$m := \frac{2.35 - \sqrt{r^2 - \left[(1 - \text{BLER}) + 1.35 \right]^2}}{(1 - \text{BLER})}$$
 For 0.15 <(1-BLER)

In the figure F.6.3.3: this is represented by the red mapping.

The Measurement tables F.6.3.5. below distinguishes between m and M.

F.6.3.4 Minimum Test time

Same as with BER BLER there is a minimum test time is necessary for multipath fading profiles with the same justification:

profile	Minimum Test time
PA3, PB3	164s

VA30	16.4s
VA 120	4.1s

F.6.3.5 Applicability and characteristics of the Measurement Tables F.6.3.5.1.

The purpose of tables F.6.3.5.1 to F.6.3.5.4 is to decide throughput pass or fail.

(the Ior/Ioc levels are only for reference)

Meaning of a decision:

A passed DUT is not worse than a Bad DUT with 95% confidence level.

A failed DUT is not better than a Limit DUT with 95% confidence level.

The minimum Test Time is

1) the minimum test time due to statistical reasons

(To ensure the confidence level, the test must be continued until a certain number of samples (NACK+ statDTX + ACK) is reached.)

2) the minimum test time due to multipath fading.

The longer test time applies. It is marked in table F.6.3.5. which one applies.

Statistical independence:

If a process works within an incremental redundancy sequence, the samples are not independent. The incremental redundancy sequence for every process must be finalised, successfully or unsuccessfully, on or beyond the minimum test time.

Then the BLER (or 1-BLER) is compared with the Test Limit to decide pass or fail.

Note: It is FFS, if correlation within groups of retransmissions may influence the confidence level of the test.

Formula:

The theory, to derive the minimum number of samples and the Test Limit, takes into consideration that BLER is in the range of near 0% to near 100%. Hence it is based on the binomial distribution and its inverse cumulative function: qbinom:

For the BLERstandard test mode:

 $ne_{low} = qbinom(D,ns,M*BLER_{limit})$ (1)

 $ne_{high} = qbinom(1-D,ns,BLER_{limit})$ (2)

```
given: 1-D: confidence level= 95%
```

BLER_{limit}=Block error ratio at the limit

M: Bad DUT factor >1

Input: ns: number of samples (NACK+ statDTX + ACK)

Output ne: number of events (NACK+ statDTX)

The intersection of (1) and (2) is the Test Limit with the coordinates: ns and ne

For the Relative Throughput complementary test mode:

```
ne<sub>low</sub>=qbinom(D,ns,1-BLER<sub>limit</sub>)
```

(3)

$$ne_{high} = qbinom(1-D,ns,m*(1-BLER_{limit)})$$

(4)

given: 1-D: confidence level= 95%

1-BLER_{limit}= Success ratio Relative Throughtput at the limit

m: Bad DUT factor <1

Input: ns: number of samples (NACK+ statDTX + ACK)

Output ne: number of events (ACK)

The intersection of (3) and (4) is the Test Limit with the coordinates: ns and ne

Note:In contrast to BER BLER test, this approach does not contain any test time optimisation.

(early pass, early fail)

Nomenclature used in the **measurement** tables **F.6.3.5...** below:

NACK+ statDTX + ACK is summarised as No of samples

NACK+ statDTX is summarised as No of errors

ACK is summarised as No of successes

In the <u>standardBLER</u> test mode (<u>BLER</u>) the ratio: recorded. In this mode a pass is below the test limit

No of errors/ No of samples

is

In the <u>complementaryRelative Throughput</u> test mode (1-BLER) the ratio: No of successes/ No of samples is recorded. In this mode a pass is above the test limit

The test mode, used, is indicated in the rightmost column with <u>sBL</u> or <u>eRT</u>

The transition from the $\frac{\text{standard}BL}{\text{standard}BL}$ to the $\frac{\text{complementary}RT}{\text{complementary}RT}$ test mode can also be seen in the column relative test requirement: BLER% \rightarrow (1-BLER%)

The generic term for No of errors (<u>sBLER</u> mode) or No of successes (<u>eRelative Throughput</u> mode) is No of events. This is used in the table column Test Limit.

Table F.6.3.5.1 Maximum Input Level for HS-PDSCH Reception (16QAM)

<u>Maximum</u>		Relative test	Test limit	Min No of	Test time in s	<u>BL</u>
nput Level		<u>requirement</u>	expressed as No of	<u>samples</u>		<u>/</u>
for HS-		(normalized to	events/min No of		Mandatory if	<u>RT</u>
PDSCH	Absolute Test	ideal=777 kbps)	<u>samples</u>	(number of	<u>fading</u>	
Reception	requirement			events to pass)		
(16QAM)	(kbps)	No of events/No of	(Bad DUT factor)		<u>Informative</u>	
10000		samples in %		Mandatory if	and approx. if	
16 QAM H-Set 1				<u>applicable</u>	statistical	
<u> </u>						
	700	<u>10%</u>	<u>58/467</u>	<u>467</u>	2.8s (stat)	BL
	<u>700</u>		(M=1.5)	<u>(≤58)</u>		

Measurement Table F.6.3.5.2.1 Single link performance

Single link performance QPSK H-Set 1,2,3	Absolute Test requirement (kbps)		Relative Test requirement (normalized to ideal=534kbps) No of events / No of samples in %	Min No of samples (number of events to pass) Mandatory, if applicable	Mandatory if fading, Informative and approx. if statistical	RT	
Test1 (Ior/Ioc=0dB)	PA3	65	87,82% → (12.18%)	60/595 (m = 1 / 1.5)	N.A.	164s (fading)	<u>e_RT</u>
	PB3	23	95.69% → (4.31%)	64/1796 (m = 1/1.5)	N.A	164s (fading)	e <u>RT</u>
		138	74.14% → (25.86%)	58/268 (m = 0.682)	N.A.	164s(fading)	e <u>RT</u>
	VA30	22	95.9% → (4.1%)	64/1888 (1/1.5)	N.A.	16.4s(fading)	e <u>RT</u>
		142	73.4%→ (26.6%)	59/264 (m = 0.684)	N.A.	16.4s(fading)	e <u>RT</u>
	VA120	13	97.564%→ (2.436%)	63/3224 (m = 1/1.5)	3224 (≥63)	H-set 1: 19.5s(stat) H-set 2: 13s (stat) H-set 3: 6.5s (stat)	<u>eRT</u>
		140	(73.77)→ 26.23%	59/268 (m = 0.683)	N.A.	4.1s(fading)	<u>eRT</u>

	Absolute requireme (kbps)		(normalized to ideal=534kbps) No of events / No of samples in %	Test limit expressed as No of events / min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory, if applicable	Mandatory if fading, Informative and approx. if statistical	
Test1	PA3	309	42.1%	83/171 (M = 1.295)	N.A.	164s (fading)	<u>sBL</u>
(Ior/Ioc=10dB)				(141 – 1.253)			
		423	20.74%	60/237 (M = 1.445)	N.A.	164s (fading)	<u>sBL</u>
	PB3	181	66.1% → (33.9%)	62/215 (m = 0.703)	N.A	164s (fading)	e <u>RT</u>
		287	46.22% → (53,78%)	84/176 (m = 0.77)	N.A.	164s(fading)	e <u>RT</u>
	VA30	190	64.4% → (35.6%)	64/211 (m = 0.708)	N.A.	16.4s(fading)	e <u>RT</u>
		295	44.72% → 55.28%	85/173 (m = 0.775)	N.A.	16.4s(fading)	e <u>RT</u>
	VA120	181	(66.1%)→ 33.9%	62/215 (m = 0.703)	N.A.	4.1s(fading)	e <u>RT</u>
		275	(48.5%) → 51.5%	79/174 (m = 0.761)	N.A.	4.1s(fading)	e <u>RT</u>

Measurement Table F.6.3.5 .2.2 Single link performance

Single link	Absolute 7	Γest	Relative Test	Test limit	Min No of	Test time in s	BL
performance	requireme	nt	requirement	expressed as No of	samples		<u>/</u>
16 QAM	(kbps)		(normalized to	events / min No of			<u>RT</u>
H-Set 1,2,3			ideal=777 kbps)	samples	(number	Mandatory if	
					of events to pass)	fading,	
			No of events / No of	(Bad DUT factor)			
			samples		Mandatory, if	Informative	
			in %		applicable	and approx. if	
						statistical	
Test1	PA3	198	74.53% → (25.47%)	FFS58/272	FFSN.A.	FFS164s	RT
10311	1 A3	196	74.5570 7 (25.4770)	(m=0.681)	TIDIV.A.	(fading)	KI
(Ior/Ioc=10dB)				(111-0.061)		(laulig)	
		368	52.66% → (47.34%)	74/179	N.A.	164s(fading)	e RT
			, ,	m=0.746		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
	PB3	34	95.626%	FFS64/1770	FFSN.A.	FFS 164s	RT
			→ (4.374%)	(m=1/1.5)		(fading)	
			·			_	

	219	71.83% → (28,17%)	FFS <u>58/240</u> (m=0.687)	FFSN.A.	FFS 164s (fading)	RT
VA30	47	93.95% →(6.05%)	FFS63/1259 (m=1/1.5)	FFSN.A.	FFS16.4s (fading)	RT
	214	72.47% → (27.53%)	FFS <u>59/255</u> (m=0.686)	FFSN.A.	FFS16.4s (fading)	RT
VA120	28	96.4% →(3.6%)	FFS64/2150 (m=1/1.5)	FFS2150 (≥64)	FFS 12.9s H- set1 8.6s H-set2 4.3s Hset3 (stat)	RT
	2 167	64.5% →(35.5%) 87.5% →(21.5%)	FFS57/319 (m=0.673)	FFSN.A.	FFS4.1s (fading)	RT

Measurement Table F.6.3.5.2 .3 Single link performance

183

VA30

65.7% **→**(34.3%)

Single link performance	Absolute requirem		Relative Test requirement	Test limit expressed as No of	Min No of samples	Test time in s	<u>B</u>]
QPSK H-Set 4	(kbps)		(normalized to ideal=534 kbps) No of events / No of	events / min No of samples (Bad DUT factor)	(number of events to pass)	Mandatory if fading,	<u>R</u>
			samples in %	(Bad DOT factor)	Mandatory, if applicable	Informative and approx. if statistical	
Test1	PA3	72	86.5% → (13.5%)	FFS <u>59/528</u>	FFSN.A.	FFS164s (fading)	<u>R</u>
(Ior/Ioc=0dB)				(m=1/1.5)			
	PB3	24	95.5% →(4.5%)	FFS63/1695 (m=1/1.5)	FFSN.A.	FFS164s (fading)	<u>R</u> '
		142	73.4% → (26.6%)	FFS 59/264 (m=0.684)	FFSN.A.	FFS164s (fading)	<u>R</u> '
	VA30	19	96.44% →(3.56%)	FFS64/2176 (m=1/1.5)	FFSN.A.	FFS16.4s (fading)	<u>R'</u>
		148	72.27% → (27.73%)	FFS59/253 (m=0.686)	FFSN.A.	FFS16.4s (fading)	<u>R'</u>
	VA120	11	98% →(2%)	FFS65/3746 (m=1/1.5)	FFS3746	FFS22.5s (stat)	<u>R'</u>
		144	73% → (27%)	FFS.58/256 (m=0.684)	(≥65) FFSN.A.	FFS4.1s (fading)	<u>R'</u>
Single link	Absolute		Relative Test	Test limit	Min No of	Test time in s	<u>B</u>
performance QPSK	requirem (kbps)	ent	requirement (normalized to	expressed as No of events / min No of	samples		<u>/</u> R
H-Set 4	(neps)		ideal=534 kbps)	samples	(number of events to pass)	Mandatory if fading,	
			No of events / No of samples in %	(Bad DUT factor)	Mandatory, if applicable	Informative and approx. if statistical	
Test1	PA3	340	36.29%	75/177	N.A.	164s (fading)	S
(Ior/Ioc=10dB)				(M=1.334)			_ <u>E</u>
		439	17.74%	58/266 (M=1.468)	N.A.	164s (fading)	S
				(M=1.468)			<u>B</u>
	PB3	186	65.15% →(34.85%)	FFS62/209 (m=0.705)	FFSN.A.	FFS164s (fading)	<u>R</u>
		299	44% <u>→(56%</u>	87/17 <u>4</u> 3 (m=0.778 M=	N.A.	164s(fading)	<u>R'</u>

FFS 16.4s (fading)

RT

FFSN.A.

 $(\underline{m} = 0.778 \underline{M} =$ 1.282)

FFS 63/216

(m=0.704)

<u>N.A.</u>	<u>16.4s (faging)</u>	S
		BL
FFSN.A.	FFS4.1s (fading)	RT
N.A.	4.1s (fading)	e <u>R</u>
	FFSN.A.	FFSN.A. FFS4.1s (fading)

Measurement Table F.6.3.5.2-.4 Single link performance

Single link	Absolute		Relative Test	Test limit	Min No of	Test time in s	BL
performance	requirem	ent	requirement	expressed as No of	samples		<u>/</u>
QPSK	(kbps)		(normalized to	events / min No of			\underline{RT}
H-Set 5			ideal=801 kbps)	samples	(number	Mandatory if	
					of events to pass)	fading,	
			No of events / No of	(Bad DUT factor)			
			samples		Mandatory, if	Informative and	
			in %		applicable	approx. if	
						statistical	
Test1	PA3	98	<u>87.76%</u> →(12.24%)	FFS <u>59/583</u>	FFSN.A.	FFS 164s (fading)	RT
(T. (T. (0.175)				(m=1/1.5)			
(Ior/Ioc=0dB)		221	$72.4\% \rightarrow (27.6\%)$	FFS 58/250	FFSN.A.	FFS 164s (fading)	<u>RT</u>
				(m=0.686			
	PB3	35	<u>95.63%</u> →(4.37%)	FFS63/1746	FFSN.A.	FFS 164s (fading)	<u>RT</u>
				(m=1/1.5)			
		207	$74.14\% \rightarrow (25.86\%)$	FFS 58/268	FFSN.A.	FFS 164s (fading)	RT
				(m=0.682)			
	VA30	33	<u>95.88%</u> →(4.12%)	FFS 64/1879	FFSN.A.	FFS 16.4s	<u>RT</u>
				(m=1/1.5)		(fading)	
		213	<u>73.4%</u> →(26.6%)	FFS <u>59/264%</u>	FFSN.A.	FFS16.2s	RT
				(m=0.684)		(fading)	
	VA120	20	<u>97.5%</u> →(2.5%)	FFS64/3101	FFS3101	FFS 12.4s (stat)	RT
				(m=1/1.5)	<u>(≥64)</u>		
		210	73.77% → (26.23%)	FFS <u>59/268</u>	FFSN.A.	FFS4.1s (fading)	RT
				(m=0.683)			

Single link performance	Absolute requireme		Relative Test requirement	Test limit expressed as No of	Min No of samples	Test time in s	<u>BL</u> /
QPSK H-Set 5	(kbps)		(normalized to ideal=801 kbps) No of events / No of	events / min No of samples (Bad DUT factor)	(number of events to pass)	Mandatory if fading,	RT
			samples in %		Mandatory, if applicable	Informative and approx. if statistical	
Test1 (Ior/Ioc=10dB)	PA3	464	42%	84/174 (M=1.295)	N.A.	164s (fading)	s BL
		635	20.67%	59/234 (M=1.446)	N.A.	164s_(fading)	s BL
	PB3	272	66.02% →(33.98%)	FFS63/218 (m=0.703)	FFSN.A.	FFS164s (fading)	
		431	46.16% →(53.84)	84/176 (m=0.77)	N.A.	164s(fading)	e <u>R</u>
	VA30	285	64.4% → (35.6%)	FFS64/211 (m=0.708)	FFSN.A.	FFS16.4s (fading)	RT
		443	44.7% →(55.3%)	85/173 (m=0.775)	N.A.	16.4s(fading)	<u>e R</u>
	VA120	272	66.02% →(33.98%)	FFS63/218 (m=0.703)	FFSN.A.	FFS4.1s (fading)	RT

	413	48.4% → (51.6%)	81/176	N.A.	4.1s(fading)	e R
			(m=0.761)			1

Table F.6.3.5.3.1 Open Loop Diversity Performance

Open Loop			Relative test	Test limit	Min No of	Test time in s	BL
<u>Diversity</u>			<u>requirement</u>	expressed as No of	<u>samples</u>		<u>/</u>
Performance	Absolute Test		(normalized to	events/min No of	(number of	Mandatory if	<u>RT</u>
<u>QPSK</u> H-Set 1/2/3	require	<u>ment</u>	ideal=534 kbps)	<u>samples</u>	(number of events to pass)	<u>fading</u>	
11-3et 1/2/3	<u>(k</u>	(bps)	No of events/No of	(Bad DUT factor)	events to passy	Informative	
Test number			samples in %	12442011401017	Mandatory if	and approx. if	
					applicable	statistical	
<u>1</u>		<u>77</u>	<u>85.57%</u> →(14.43%)	<u>58/486</u>	<u>N.A.</u>	164s (fading)	<u>RT</u>
$(\hat{I}_{or}/I_{oc} = 0)$	PA3			<u>(m=1/1.5)</u>			
l I——	1710	<u>180</u>	<u>66.27%→(33.73%)</u>	<u>62/216</u>	<u>N.A.</u>	164s (fading)	<u>RT</u>
dB)		00	00.050() (0.750()	(m=0.702)	NI A	404 (6 1)	D.T.
2		<u>20</u>	<u>96.25%</u> → (3.75%)	<u>64/2065</u> (m=1/1.5)	<u>N.A.</u>	164s (fading)	<u>RT</u>
$(\hat{I}_{or}/I_{oc} = 0)$	PB3	154	71.14%→ (28,86%)	59/243	N.A.	164s (fading)	RT
dB)		104	71.14/0 7 (20,00/0)	(m=0.689)	IN.A.	1043 (lauling)	111
		15	97.19% → (2.81%)	64/2758	H-Set 1:	H-Set 2,3:	RT
<u>3</u>		_		(m=1/1.5)	2758	16.4s (fading)	
$(\hat{I}_{or}/I_{oc} = 0)$	VA30				<u>(≥64)</u>	H-Set 1:	
	<u>v/130</u>					16.6s(stat.)	
<u>dB)</u>		<u>162</u>	<u>69.64%</u> → (30.36%)	60/235	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
		275	20.70/	(m=0.693)	NI A	101= (fadina)	DI
		<u>375</u>	<u>29.7%</u>	<u>68/192</u> (M=1.38)	<u>N.A.</u>	<u>164s (fading)</u>	<u>BL</u>
$(\hat{I}_{or}/I_{oc} = 10)$	PA3	475	11%	58/425	N.A.	164s (fading)	BL
dB)		110	1170	(M=1.499)	14.7 (.	TO TO (Tading)	<u> </u>
2		183	65.7% → (34.3%)	63/216	N.A.	164s (fading)	RT
$\hat{I}_{or}/I_{oc} = 10$	PB3			(m=0.704)			
l ——	<u> </u>	<u>274</u>	<u>48.7% →(51.3%)</u>	<u>80/177</u>	<u>N.A.</u>	164s (fading)	<u>RT</u>
dB)				(m=0.76)			
<u>3</u>		<u>187</u>	<u>65% → (35%)</u>	62/208	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
$(\hat{I}_{or}/I_{oc} = 10)$	<u>VA30</u>	204	46 00/ N/E2 20/\	(m=0.706)	NI A	16 10 (foding)	DT
dB)		<u>284</u>	<u>46.8% →(53.2%)</u>	<u>82/174</u> (m=0.767)	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
			1	<u>(111–0.707)</u>			l

Table F.6.3.5.3.2 Open Loop Diversity Performance

Open Loo Diversity Performand 16 QAM H-Set 1/2	ce Ab	Absolute Test requirement (kbps)		Relative test requirement (normalized to ideal=777 kbps)	Test limit expressed as No of events/min No of samples	Min No of samples (number of events to pass)	Test time in s Mandatory if fading	BL <u>/</u> RT
Test numb	er			No of events/No of samples in %	(Bad DUT factor)	Mandatory if applicable	Informative and approx. if statistical	
1			<u>295</u>	<u>62% →(38%)</u>	66/203 (m=0.715)	<u>N.A.</u>	164s (fading)	<u>RT</u>
$\frac{(\hat{I}_{or}/I_{oc} = 1)}{\text{dB}}$	<u>10 P.</u>	<u>A3</u>	<u>463</u>	<u>40.4%</u>	82/176 (M=1.306)	<u>N.A.</u>	164s (fading)	BL
$\frac{2}{\hat{I}_{or}/I_{oc}} = 1$	10 5	0	<u>24</u>	<u>96.9% →(3.1%)</u>	64/2500 (m=1/1.5)	<u>N.A.</u>	164s (fading)	<u>RT</u>
$\frac{1}{Or} / \frac{1}{Oc} = 1$ $\frac{dB}{dB}$		<u>B3</u>	<u>243</u>	<u>68.7% →(31.3%)</u>	60/227 (m=0.695)	<u>N.A.</u>	164s (fading)	RT
$\frac{3}{(\hat{I}_{or}/I_{oc} = 1)}$	10 1/4	۸۵۵	<u>35</u>	95.5% →(4.5%)	63/1695 (m=1/1.5)	<u>N.A.</u>	16.4s (fading)	RT
$\frac{1}{Or} / \frac{1}{Oc} = 1$ $\frac{dB}{dB}$		<u>430</u>	<u>251</u>	<u>67.7% →(32.3%)</u>	61/223 (m=0.698)	<u>N.A.</u>	16.4s (fading)	<u>RT</u>

Table F.6.3.5.3.3 Open Loop Diversity Performance

Open Loop Diversity			Relative test requirement	Test limit expressed as No of	Min No of samples	Test time in s	BL/
Performance QPSK	Absolute Test requirement		(normalized to ideal=534 kbps)	events/min No of samples	(number of	Mandatory if fading	RT RT
H-Set 4 Test number	<u>(k</u>	tbps)	No of events/No of samples in %	(Bad DUT factor)	events to pass) Mandatory if applicable	Informative and approx. if statistical	
$\frac{1}{\hat{I}}$	DAG	<u>70</u>	<u>86.9% →(13.1%)</u>	<u>59/544</u> (m=1/1.5)	N.A.	164s (fading)	<u>RT</u>
$\frac{(\hat{I}_{or}/I_{oc} = 0)}{\text{dB}}$	PA3	<u>171</u>	<u>68% →(32%)</u>	61/225 (m=0.697)	<u>N.A.</u>	164s (fading)	<u>RT</u>
$\frac{2}{(\hat{I}_{or}/I_{oc}=0)}$	DD2	<u>14</u>	97.4% →(2.6%)	64/2982 (m=1/1.5)	<u>N.A.</u>	164s (fading)	<u>RT</u>
$\frac{I_{or}/I_{oc} = 0}{dB)}$	PB3	<u>150</u>	<u>71.9% →(28.1%)</u>	<u>59/250</u> (m=0.687)	<u>N.A.</u>	164s (fading)	<u>RT</u>
$\frac{3}{\hat{I}}$	\/A00	<u>11</u>	<u>97.04% →(2.06%)</u>	65/3819 (m=1/1.5)	<u>3819</u> (≥65)	23s (stat)	<u>RT</u>
$\frac{(\hat{I}_{or}/I_{oc} = 0)}{\text{dB}}$	<u>VA30</u>	<u>156</u>	<u>70.8% →(29.2%)</u>	60/243 (m=0.69)	N.A.	16.4s (fading)	RT
$\frac{1}{\hat{L}}$	DAG	<u>369</u>	<u>30.9%</u>	69/188 (M=1.372)	<u>N.A.</u>	164s (fading)	<u>BL</u>
$\frac{(\hat{I}_{or}/I_{oc} = 10)}{\text{dB}}$	PA3	<u>471</u>	<u>11.7%</u>	58/400 (M=1.497)	<u>N.A.</u>	164s (fading)	<u>BL</u>
$\frac{2}{\hat{L}/L} = 10$	DD2	<u>180</u>	<u>66.3%</u> →(33.7%)	63/220 (m=0.702)	<u>N.A.</u>	164s (fading)	RT
$\frac{(\hat{I}_{or}/I_{oc} = 10)}{\text{dB}}$	PB3	<u>276</u>	<u>48.3% →(51.7%)</u>	79/173 (m=0.762)	<u>N.A.</u>	164s (fading)	<u>RT</u>
$\frac{3}{\hat{L}}$	\/A00	<u>184</u>	<u>65.5%</u> →(34.5%)	62/211 (m=0.704)	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
$\frac{(\hat{I}_{or}/I_{oc} = 10)}{\text{dB}}$	<u>VA30</u>	<u>285</u>	<u>46.6% →(53.4%)</u>	81/171 (m=0.768)	<u>N.A.</u>	16.4s (fading)	<u>RT</u>

Table F.6.3.5.3.4 Open Loop Diversity Performance

Open Loop			Relative test	Test limit	Min No of	Test time in s	<u>BL</u>
Diversity			requirement,	expressed as No of	<u>samples</u>		<u>/</u>
<u>Performance</u>	Absolu	to Tost	normalized to	events/min No of		Mandatory if	RT
QPSK	Absolute Test requirement		ideal=801 kbps	<u>samples</u>	(number of	<u>fading</u>	
H-Set 5		abps)			events to pass)		
	<u>(18</u>	<u></u>	No of events/No of	(Bad DUT factor)		<u>Informative</u>	
Test number			samples in %		Mandatory if	and approx. if	
					<u>applicable</u>	<u>statistical</u>	
<u>1</u>			<u>85.5% → (14.5%)</u>	<u>59/492</u>	<u>N.A.</u>	164s (fading)	RT
$(\hat{I}_{or}/I_{oc} = 0)$	PA3	<u>116</u>		<u>(m=0.667)</u>			
	1710		<u>66.27% → (33.73%)</u>	<u>62/216</u>	<u>N.A.</u>	164s (fading)	<u>RT</u>
<u>dB)</u>		<u>270</u>		<u>(m=0.702)</u>			
<u>2</u>			<u>96.25%</u> →(3.75%)	<u>65/2100</u>	<u>N.A.</u>	164s (fading)	<u>RT</u>
$(\hat{I}_{or}/I_{oc} = 0)$	PB3	<u>30</u>		<u>(m=1/1.5)</u>			
	<u>. 50</u>		<u>71.14% → (28.86%)</u>	<u>58/243</u>	<u>N.A.</u>	164s (fading)	<u>RT</u>
<u>dB)</u>		<u>231</u>		<u>(m=0.689)</u>			
<u>3</u>			$97.13\% \rightarrow (2.87\%)$	<u>64/2741</u>	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
$(\hat{I}_{or}/I_{oc} = 0)$	VA30	<u>23</u>		<u>(m=1/1.5)</u>			
	<u> </u>		<u>69.64% →(30.36%)</u>	<u>60/234</u>	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
<u>dB)</u>		<u>243</u>		<u>(m=0.693)</u>			
<u>1</u>			<u>29.67%</u>	<u>68/194</u>	<u>N.A.</u>	164s (fading)	<u>BL</u>
$(\hat{I}_{or}/I_{oc} = 10)$	PA3	<u>563</u>		<u>(M=1.381)</u>			
	1710		<u>10.93%</u>	<u>58/428</u>	<u>N.A.</u>	164s (fading)	<u>BL</u>
<u>dB)</u>		<u>713</u>		(M=1.499)			
<u>2</u>			<u>65.65%</u> →(34.35%)	<u>64/212</u>	<u>N.A.</u>	<u>164s (fading)</u>	<u>RT</u>
$\hat{I}_{or}/I_{oc} = 10$	PB3	<u>275</u>		<u>(m=0.704)</u>			
	1 00		<u>48.66% → (51.34%)</u>	<u>77/170</u>	<u>N.A.</u>	<u>164s (fading)</u>	<u>RT</u>
<u>dB)</u>		<u>411</u>		<u>(m=0.76)</u>			
<u>3</u>			<u>64.9% → (35.1%)</u>	<u>63/211</u>	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
$\hat{I}_{or}/I_{oc} = 10$	VA30	<u>281</u>		(m=0.706)			
 	47.00		<u>46.78% → (53.22%)</u>	<u>81/172</u>	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
<u>dB)</u>		<u>426</u>		<u>(m=0.767)</u>			

Table F.6.3.5.3.1 Closed Loop Diversity Performance

	1						
Closed Loop			Relative test	Test limit	Min No of	Test time in s	<u>BL</u>
<u>Diversity</u>			<u>requirement</u>	expressed as No of	<u>samples</u>		<u>/</u>
<u>Performance</u>	Abooku	to Toot	(normalized to	events/min No of		Mandatory if	RT
QPSK		te Test	ideal=534 kbps)	samples	(number of	fading	
H-Set 1/2/3	require			<u>-</u>	events to pass)		
77 550 17275	<u>(k</u>	(bps)	No of events/No of	(Bad DUT factor)	oronio to pacej	Informative	
Test number			samples in %	(Bad BOT factor)	Mandatory if	and approx. if	
<u>lest number</u>			<u>38111pie3 II1 70</u>		applicable	statistical	
H .		440	77 000/ \(\)\(\)\(\)	F0/04F			DT
<u> </u>		<u>118</u>	<u>77.89% →(22.11%)</u>	<u>58/315</u>	<u>N.A.</u>	<u>164s (fading)</u>	<u>RT</u>
$(\hat{I}_{or}/I_{oc} = 0)$	PA3			<u>(m=0.674)</u>			
		<u>225</u>	<u>57.84% → (42.16%)</u>	69/189(m=0.728)	<u>N.A.</u>	164s (fading)	<u>RT</u>
<u>dB)</u>							
<u>2</u>		<u>50</u>	$90.63\% \rightarrow (9.37\%)$	<u>61/787</u>	<u>N.A.</u>	<u>164s (fading)</u>	<u>RT</u>
$(\hat{I}_{or}/I_{oc} = 0)$	PB3			<u>(m=1/1.5)</u>			
	<u>1 D0</u>	<u>173</u>	<u>67.58% →(32.42%)</u>	<u>61/222</u>	<u>N.A.</u>	164s (fading)	<u>RT</u>
<u>dB)</u>				(m=0.698)			
3		47	91.2% →(8.8%)	62/852	N.A.	16.4s (fading)	RT
I I -				(m=1/1.5)			
$(\hat{I}_{or}/I_{oc} = 0)$	<u>VA30</u>	172	67.77% →(32.23%)	61/223	N.A.	16.4s (fading)	RT
dB)		172	07:1770 7 (02:2070)	(m=0.698)	<u>14.7 (.</u>	TO. 43 (lading)	111
		200	25 220/	63/207	NI A	164a (fodina)	DI
<u>1</u>		<u>399</u>	<u>25.23%</u>		<u>N.A.</u>	164s (fading)	<u>BL</u>
$(\hat{I}_{or}/I_{oc} = 10)$	PA3			(M=1.413)			
		<u>458</u>	<u>14.18%</u>	<u>57/325</u>	<u>N.A.</u>	<u>164s (fading)</u>	<u>BL</u>
<u>dB)</u>				<u>(M=1.487)</u>			
<u>2</u>		<u>199</u>	<u>62.71% →(37.29%)</u>	<u>65/204</u>	<u>N.A.</u>	164s (fading)	<u>RT</u>
1 1.	DDO			(m=0.713)			
$(\hat{I}_{or}/I_{oc} = 10)$	PB3	301	43.6%	88/180	N.A.	164s (fading)	BL
dB)				(M=1.285)	<u></u>		
3		204	61.77% →(38.23%)	65/198	N.A.	16.4s (fading)	RT
		204	01.77 7 (30.2370)	(m=0.716)	<u>14./7.</u>	10.75 (lauling)	111
$(\hat{I}_{or}/I_{oc}=10)$	VA30	205	40.050/		NI A	4C 4= /f==lin=v	DI
dB)		<u>305</u>	<u>42.85%</u>	<u>85/173</u>	<u>N.A.</u>	16.4s (fading)	<u>BL</u>
<u>ud)</u>				<u>(M=1.29)</u>			

Table F.6.3.5.3.2 Closed Loop Diversity Performance

Closed Loop Diversity Performance 16 QAM H-Set 1/2/3 Test number	require	ite Test ement kbps)	Relative test requirement (normalized to ideal=777 kbps) No of events/No of samples in %	Test limit expressed as No of events/min No of samples (Bad DUT factor)	Min No of samples (number of events to pass) Mandatory if applicable	Mandatory if fading Informative and approx. if statistical	BL / RT
$\frac{1}{\hat{I}_{or}/I_{oc}} = 10$	PA3	<u>361</u>	<u>53.56%</u> →(46.44%)	73/180 (m=0.743)	<u>N.A.</u>	164s (fading)	<u>RT</u>
$\frac{dB_0}{dB}$	PAS	<u>500</u>	<u>35.68%</u>	74/177 (M=1.338)	<u>N.A.</u>	164s (fading)	<u>BL</u>
$\frac{2}{(\hat{I}_{or}/I_{oc}=10)}$	DDa	<u>74</u>	90.48% →(9.52%)	62/788 (m=1/1.5)	<u>N.A.</u>	164s (fading)	<u>RT</u>
$\frac{dB}{dB}$	PB3	<u>255</u>	<u>67.2% →(32.8%)</u>	61/219 (m=0.7)	<u>N.A.</u>	164s (fading)	<u>RT</u>
$\frac{3}{(\hat{I}_{or}/I_{oc}=10)}$	VA30	<u>84</u>	<u>89.2% →(10.8%)</u>	61/683 (m=1/1.5)	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
$\frac{1I_{or}/I_{oc}}{\frac{dB}{}}$	<u>v A30</u>	<u>254</u>	<u>67.32% →(32.68%)</u>	61/220 (m=0.699)	<u>N.A.</u>	16.4s (fading)	RT

Table F.6.3.5.3.4 Closed Loop Diversity Performance

Closed Loop			Relative test	Test limit	Min No of	Test time in s	BL
<u>Diversity</u>			<u>requirement</u>	expressed as No of	<u>samples</u>		<u>/</u>
<u>Performance</u>	Absolute Test		(normalized to	events/min No of		Mandatory if	<u>RT</u>
<u>QPSK</u>	require		ideal=534 kbps)	<u>samples</u>	(number of	<u>fading</u>	
<u>H-Set 4</u>		(bps)			events to pass)		
	<u></u>	<u></u>	No of events/No of	(Bad DUT factor)		<u>Informative</u>	
Test number			samples in %		Mandatory if	and approx. if	
					<u>applicable</u>	statistical	
<u>1</u>		<u>114</u>	<u>78.64% →(21.36%)</u>	<u>58/327</u>	<u>N.A.</u>	<u>164s (fading)</u>	<u>RT</u>
$(\hat{I}_{or}/I_{oc} = 0)$	PA3			<u>(m=0.673)</u>			
	<u>. 7 to</u>	<u>223</u>	<u>58.21% → (41.79%)</u>	<u>69/191</u>	<u>N.A.</u>	<u>164s (fading)</u>	<u>RT</u>
<u>dB)</u>				(m=0.727)			
<u>2</u>		<u>43</u>	<u>91.94% →(8.06%)</u>	<u>62/930</u>	<u>N.A.</u>	164s (fading)	<u>RT</u>
$(\hat{I}_{or}/I_{oc} = 0)$	PB3			<u>(m=1/1.5)</u>			
	<u>. 20</u>	<u>167</u>	<u>68.71% → (31.29%)</u>	<u>60/227</u>	<u>N.A.</u>	<u>164s (fading)</u>	<u>RT</u>
<u>dB)</u>				<u>(m=0.695)</u>			
<u>3</u>		<u>40</u>	<u>92.5% → (7.5%)</u>	<u>63/1017</u>	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
$(\hat{I}_{or}/I_{oc} = 0)$	VA30			<u>(m=1/1.5)</u>			
	<u> </u>	<u>170</u>	<u>68.14% → (31.86%)</u>	<u>61/226</u>	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
dB)				<u>(m=0.697)</u>			
<u>1</u>		<u>398</u>	<u>25.42%</u>	<u>63/206</u>	<u>N.A.</u>	164s (fading)	BL
$(\hat{I}_{or}/I_{oc} = 10)$	PA3			<u>(M=1.412)</u>			
<u> </u>	1710	<u>457</u>	<u>14.37%</u>	<u>57/321</u>	<u>N.A.</u>	164s (fading)	<u>BL</u>
<u>dB)</u>				<u>(M=1.486)</u>			
<u>2</u>		<u>196</u>	$63.27 \rightarrow (36.73\%)$	<u>64/204</u>	<u>N.A.</u>	164s (fading)	<u>RT</u>
$\hat{I}_{or}/I_{oc} = 10$	PB3			<u>(m=0.711)</u>			
	1 00	<u>292</u>	<u>45.28%</u> → (54.72%)	<u>85/175</u>	<u>N.A.</u>	164s (fading)	<u>RT</u>
<u>dB)</u>				<u>(m=0.773)</u>			
<u>3</u>		<u>199</u>	<u>62.71% →(37.29%)</u>	<u>65/204</u>	<u>N.A.</u>	16.4s (fading)	RT
$\hat{I}_{or}/I_{oc} = 10$	VA30			<u>(m=0.713)</u>			
 	<u> </u>	<u>305</u>	<u>42.85%</u>	<u>85/173</u>	<u>N.A.</u>	16.4s (fading)	<u>BL</u>
<u>dB)</u>				(M=1.29)			

Table F.6.3.5.3.4 Closed Loop Diversity Performance

Closed Loop Diversity			Relative test requirement	Test limit expressed as No of	Min No of samples	Test time in s	BL _/
Performance QPSK	Absolute Test requirement		(normalized to ideal=801 kbps)	events/min No of samples	(number of	Mandatory if fading	<u>RT</u>
H-Set 5		(bps)	No of events/No of	(Bad DUT factor)	events to pass)	<u>Informative</u>	
Test number			samples in %		Mandatory if applicable	and approx. if statistical	
$\frac{1}{(\hat{I}_{or}/I_{oc} = 0)}$	PA3	<u>177</u>	<u>77.89% →(22.11%)</u>	<u>58/315</u> (m=0.674)	<u>N.A.</u>	<u>164s (fading)</u>	<u>RT</u>
$\frac{1_{or}/1_{oc}}{dB)}$	<u>FA3</u>	338	<u>57.78%</u> →(42.22%)	68/186 (m=0.728)	<u>N.A.</u>	164s (fading)	<u>RT</u>
$\frac{2}{(\hat{I}_{or}/I_{oc} = 0)}$	PB3	<u>75</u>	<u>90.63%</u> →(9.37%)	61/787 (m=1/1.5)	<u>N.A.</u>	<u>164s (fading)</u>	<u>RT</u>
$\frac{1_{or}/1_{oc}}{\underline{dB})}$	<u>FB3</u>	260	<u>67.52% →(32.48%)</u>	62/225 (m=0.699)	<u>N.A.</u>	164s (fading)	<u>RT</u>
$\frac{3}{\hat{I}}$	\/A00	71	91.13% →(8.87%)	62/846 (m=1/1.5)	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
$\frac{(\hat{I}_{or}/I_{oc} = 0)}{\text{dB}}$	<u>VA30</u>	258	<u>67.77% →(32.23%)</u>	61/223 (m=0.698)	<u>N.A.</u>	16.4s (fading)	RT
$\frac{1}{\hat{I}}$	D 1 0	599	<u>25.17%</u>	64/211 (M=1.413)	<u>N.A.</u>	164s (fading)	BL
$\frac{(\hat{I}_{or}/I_{oc} = 10)}{\text{dB}}$	PA3	687	<u>14.18%</u>	<u>57/325</u> (M=1.487)	<u>N.A.</u>	164s (fading)	<u>BL</u>
<u>2</u>		299	<u>62.65%</u> →(37.35%)	64/200 (m=0.713)	<u>N.A.</u>	164s (fading)	RT
$\frac{(\hat{I}_{or}/I_{oc} = 10)}{\text{dB}}$	PB3	452	<u>43.54%</u>	87/174 (M=1.285)	<u>N.A.</u>	164s (fading)	<u>BL</u>
$\frac{3}{\hat{L}}$	\/A00	306	<u>61.77% →(38.23%)</u>	65/198 (m=0.716)	<u>N.A.</u>	16.4s (fading)	<u>RT</u>
$\frac{(\hat{I}_{or}/I_{oc} = 10)}{\underline{dB}}$	<u>VA30</u>	<u>458</u>	42.79%	86/175 (M=1.29)	<u>N.A.</u>	16.4s (fading)	<u>BL</u>

Note: The minimum test time due to fading dominates all test.

3GPP TSG-T1 Meeting #24 Toronto, Canada, 26 - 30 July, 2004

		CHANGE	REQ	UE	ST	•		CR-Form-v7
*	34.121	CR 403	∺rev	-	\mathfrak{H}	Current version:	5.4.0	¥

For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the \mathbb{X} symbols.

Proposed chang	je a	affects:	UICC apps#	M	E X Radio Acc	cess Networ	k Core N	letwork
Title:	\mathfrak{H}	Correct	tion to the Measureme	ent Cor	ntrol message ir	1 8.7.6 UE F	Rx-Tx time diff	erence
Source:	¥	Rohde	& Schwarz					
Work item code:	:					<i>Date:</i> ∺	26/07/2004	
Category:	¥	F			1	Release: ∺	Rel-5	
			of the following categoricorrection)	es:			the following re (GSM Phase 2	
		A (0	corresponds to a correct addition of feature),	ion in a	n earlier release)	R96	(Release 1996) (Release 1997))
		C (f	functional modification of	f feature	e)	R98	(Release 1998))
		Detailed of	editorial modification) explanations of the above in 2000, TR 24,000	e categ	gories can	R99 Rel-4	(Release 1999) (Release 4))
			in 3GPP TR 21.900.		,	Rel-5	(Release 5)	

Reason for change: ₩

- 1. Measurement Identity is aligned with other test cases.
- 2. Editorial correction;
 - Two IEs of "Measurement Reporting Mode" in "Measurement Control message" exist.

Rel-6

(Release 6)

The measurement command "modify" should not be used to change the measurement type. See 25.331:

8.4.1.2 Initiation

The UTRAN may request a measurement by the UE to be setup, modified or released with a MEASUREMENT CONTROL message, which is transmitted on the downlink DCCH using AM RLC.

The UTRAN should take the UE capabilities into account when a measurement is requested from the UE.

When a new measurement is created, UTRAN should set the IE "Measurement identity" to a value, which is not used for other measurements. UTRAN may use several "Measurement identity" for the same "Measurement type". In case of setting several "Measurement identity" within a same "Measurement type", the measurement object or the list of measurement objects can be set differently for each measurement with different "Measurement identity".

When a current measurement is modified or released, UTRAN should set the IE "Measurement identity" to the value, which is used for the measurement being modified or released. In case of modifying IEs within a "Measurement identity", it is not needed for

UTRAN to indicate the IEs other than modified IEs, and the UE continues to use the current values of the IEs that are not modified. UTRAN should not use "modify" to change the type of measurement stored in the variable MEASUREMENT_IDENTITY for a given measurement identity.

1. The measurement control message is changed to setup a new measurement (with a new measurement identity "default 5") instead of modifying the existing UE measurement.

2. Unnecessary IEs in "measurement control message" are deleted.

Consequences if not approved:

The measurement control message is not in line with the core specification. The UE could fail the test as the measurement is not set up properly.

Clauses affected:	第 8.7.6
Other specs affected:	Y N X Other core specifications Test specifications X O&M Specifications
Other comments:	# T1-040292 was T1 approved, however not implemented in 34.121. This CR is a resubmission of T1-040292.

8.7.6 UE Rx-Tx time difference

8.7.6.1 UE Rx-Tx time difference type 1

8.7.6.1.1 Definition and applicability

The UE Rx-Tx time difference is defined as the time difference between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time) of the downlink DPCH frame from the measured radio link. The reference point of the UE Rx-Tx time difference shall be the antenna connector of the UE. This measurement is specified in clause 5.1.10 of TS 25.215.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.6.1.2 Minimum requirements

Table 8.7.6.1.1 UE Rx-Tx time difference type 1 measurement accuracy

		Acquirocv		Conditions			
Parameter	Unit	Accuracy [chip]	lo [dBm/3.84MHz]				
		[cmp]	Band I	Band II	Band III		
UE RX-TX time difference	chip	± 1.5	-9450	-9250	-9150		

The normative reference for this requirement is TS 25.133 [2] clause 9.1.9.1.1 and A.9.1.6.1.2.

8.7.6.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of Rx-Tx time difference is within the limit specified in clause 8.7.6.1.2. This measurement is used for call setup purposes to compensate propagation delay of DL and UL.

8.7.6.1.4 Method of test

8.7.6.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS to the UE antenna connector as shown in figure A.1

Table 8.7.6.1.2: UE Rx-Tx time difference type 1 intra frequency test parameters

Parai	motor	Unit	Test 1	Test 2	Test 3	
Palai	neter	Onit	Cell 1	Cell 1	Cell 1	
UTRA RF Cha	annel number		Channel 1	Channel 1	Channel 1	
CPICH_Ec/loi	f	dB	-10	-10	-10	
PCCPCH_Ec/	'lor	dB	-12	-12	-12	
SCH_Ec/lor		dB	-12	-12	-12	
PICH_Ec/lor		dB	-15	-15	-15	
DPCH_Ec/Ior		dB	-15	-15	-15	
OCNS_Ec/lor		dB	-1.11	-1.11	-1.11	
Îor/loc		dB	10.5	10.5	10.5	
loc		dBm/ 3.84 MHz	lo -10.9 dB = loc, Note 1	lo -10.9 dB = loc, Note 1	lo -10.9 dB = loc, Note 1	
	Band I		-94			
lo	Band II	dBm/3.84 MHz	-92	-72	-50	
	Band III		-91			
Propagation of	ondition	-	AWGN	AWGN	AWGN	

NOTE 1: loc level shall be adjusted according the total signal power spectral density lo at receiver input and the geometry factor $\hat{lor/loc}$.

8.7.6.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters are set up according to table 8.7.6.1.4 for Test 1.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT message.
- 4) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The comparison should be repeated 1000 times.
- 5) The RF parameters are set up according table 8.7.6.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period.
- 6) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The comparison should be repeated 1000 times.
- 7) The RF parameters are set up according table 8.7.6.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period.
- 8) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The comparison should be repeated 1000 times.
- 9) SS shall transmit RRC CONNECTION RELEASE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 2):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	45
-Measurement Command	ModifySETUP
- Additional measurements list	Not Present
-Measurement Reporting Mode	AM RLC
-Measurement Report Transfer Mode	Periodical reporting
-Periodical Reporting / Event Trigger Reporting Mode	UE Internal measurement
-CHOICE Measurement type	
-UE Internal measurement quantity	FDD
-CHOICE mode	UE Rx-Tx time difference
-Measurement quantity	0
-Filter coefficient	
-UE Internal reporting quantity	
-UE Transmitted power	FALSE
-CHOICE mode	FDD
-UE Rx-Tx time difference	TRUE
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
Physical channel information elements	
-DPCH compressed mode status info	Not Present

3GPP TSG-T1 Meeting #24 Toronto, Canada, 26 - 30 July, 2004

Consequences if

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Title:	Correction t	o the pathloss in	dicator in m	neasure	emer	nt control m	essa	ges	
Source: #	Rohde & So	chwarz							
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Reason for change	informa default	rement reports nation about the C RF test setup. Fements of the con	PICH power the p	er is no pathlos	t incl	luded for the	e neig	ghbour cel	ls for the

not approved:	The UE could fail the test as the measurement is not set up properly.
Clauses affected:	3.7.1 , 8.7.2, 8.7.3, 8.7.4, 8.7.5
Other specs affected:	Y N X Other core specifications X Test specifications O&M Specifications
Other comments:	The decision on T1-040154 is not anymore tracable. Its content is implementet in 34.121 partly. This CR is a re- submission of T1-040154.

Summary of change: # The pathloss reporting indicator in the measurement control message is changed

The measurement reports are not sent by the UE due to the missing information.

8.7.1 CPICH RSCP

8.7.1.1 Intra frequency measurements accuracy

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the actual CPICH RSCP power from same cell.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

- CPICH_RSCP1 $|_{dBm} \ge -114 dBm$ for Band I.
- CPICH_RSCP1|_{dBm} ≥ -112 dBm for Band II,
- CPICH_RSCP1 $|_{dBm} \ge -111dBm$ for Band III.

$$- \frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dB} \le 20dB$$

Table 8.7.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

	Unit	Accurac	cy [dB]	Conditions			
Parameter		Normal	Extreme	lo [dBm/3.84 MHz]			
		condition	condition	Band I Band II		Band III	
CPICH RSCP	dBm	±6	±9	-9470	-9270	-9170	
CFICIT_ROCF	dBm	±8	±11	-7050	-7050	-7050	

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.1 and A.9.1.1.2.

8.7.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits in clause 8.7.1.1.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.4 Method of test

8.7.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: CPICH RSCP Intra frequency parameters

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1		Channel 1		Channel 1	
CPICH_Ec/lor		dB	-10		-10		-10	
PCCPCH_Ec/lor		dB	-12		-12		-12	
SCH_Ec/lor		dB	-12		-12		-12	
PICH_Ec/lor		dB	-15		-15		-15	
DPCH_Ec/lor		dB	-15	-	-15	-	-15	-
OCNS Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
loc	Band I		-75.54		-59.98		-97.47	
	Band II	dBm/ 3.84 MHz					-95.47	
	Band III						-94.47	
Îor/loc		dB	4	0	9	0	0	-6.53
CPICH RSCP, Note 1	Band I	dBm	-81.5	-85.5	-60.98	-69.88	-107.47	-114.0
	Band II						-105.47	-112.0
	Band III						-104.47	-111.0
Io, Note 1	Band I		-69		-50		-94	
	Band II	dBm/3.84 MHz					-92	
	Band III						-91	
Propagation condition		-	AWGN		AWGN		AWGN	

NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.1.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.4.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check CPICH_RSCP value in MEASUREMENT REPORT messages. CPICH RSCP power of Cell 1 r and Cell 2 eported by UE is compared to actual CPICH RSCP power for each MEASUREMENT REPORT message.
- 5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark				
Message Type					
UE information elements					
-RRC transaction identifier	0				
-Integrity check info	Not Present				
Measurement Information elements	Not i resent				
-Measurement Identity	5				
-Measurement Command	SETUP				
-Measurement Reporting Mode	32101				
- Measurement Report Transfer Mode	Acknowledged mode RLC				
- Periodical Reporting / Event Trigger Reporting	Periodical reporting				
Mode	renducal reporting				
-Additional measurement list	Not Present				
-Additional measurement list -CHOICE Measurement Type					
	Intra-frequency measurement				
-Intra-frequency measurement	Not Present				
- Intra-frequency measurement objects list	Not Present				
-Intra-frequency measurement quantity					
-Filter coefficient	0				
-CHOICE mode	FDD CRICH BOOD				
-Measurement quantity	CPICH RSCP				
-Intra-frequency reporting quantity					
-Reporting quantities for active set cells					
-Cell synchronisation information reporting					
indicator	TRUE				
-Cell Identity reporting indicator	TRUE				
-CHOICE mode	FDD				
-CPICH Ec/N0 reporting indicator	TRUE				
-CPICH RSCP reporting indicator	TRUE				
-Pathloss reporting indicator	FALSE				
-Reporting quantities for monitored set cells					
-Cell synchronisation information reporting	FALSE				
indicator					
-Cell Identity reporting indicator	TRUE				
-CHOICE mode	FDD				
-CPICH Ec/N0 reporting indicator	TRUE				
-CPICH RSCP reporting indicator	TRUE				
-Pathloss reporting indicator	FALSE				
-Reporting quantities for detected set cells	Not Present				
-Reporting cell status					
-CHOICE reported cell	Report all active set cells + cells within				
	monitored set on used frequency				
-Maximum number of reported cells	Virtual/active set cells + 2				
-Measurement validity	Not Present				
-CHOICE report criteria	Periodical reporting criteria				
-Amount of reporting	Infinity				
-Reporting interval	250 ms				
Physical channel information elements					
-DPCH compressed mode status info	Not Present				

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.1.5 Test requirements

Table 8.7.1.1.1.3: CPICH_RSCP Intra frequency absolute accuracy, test requirement

		Accura	cy [dB]	Conditions		
Parameter	Unit	Normal Extreme		lo [dBm/3.84 MHz]		
		condition	condition	Band I	Band II	Band III
CPICH RSCP	dBm	±7.4	±10.4	-9470	-9270	-9170
CPICH_ROCP	dBm	±9.4	±12.4	-7050	-7050	-7050

Table 8.7.1.1.1.4: CPICH RSCP Intra frequency test parameters

Parameter		Unit	Tes	st 1	Test 2		Test 3	
		Offic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Char	nnel number		Char	nel 1	Char	nel 1	Channel 1	
CPICH_Ec/lor		dB	-1	0	-1	10	-10	
PCCPCH_Ec/ld	or	dB	-1	2	-1	12	-1	2
SCH_Ec/lor		dB	-1	2	-1	12	-1	2
PICH_Ec/lor		dB	-1	5	-1	15	-1	5
DPCH_Ec/lor		dB	-15	-	-15	-	-15	-
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
	Band I						-96.47	
loc	Band II	dBm/ 3.84 MHz -74.54		-61,6		-94.47		
	Band III						-93.47	
Îor/loc		dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH	Band I						-106.17	-112.7
RSCP, Note 1	Band II	dBm	-80.2	-84.2	-62.3	-71.3	-104.17	-110.7
NOCE, NOTE I	Band III						-103.17	-109.7
Io, Note 1 Band II Band III					-51,4		-92	2,8
		dBm / 3.84 MHz	-67	7.8			-90	0.8
]					-89.8	
Propagation co	ndition	-	AW	GN	AWGN		AWGN	

NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the absolut intra frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.1.1.5.

Table 8.7.1.1.5: CPICH_RSCP Intra frequency absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3 (Band I)	Test 3 (Band II)	Test 3 (Band III)
Normal Conditions					
Lowest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 1)	26	44	2	4	5
Highest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 1)	45	63	17	19	20
Lowest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 2)	22	35	0	0	0
Highest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 2)	41	54	10	12	13
Extreme Conditions					
Lowest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 1)	23	41	0	1	2
Highest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 1)	48	66	20	22	23
Lowest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 2)	19	32	0	0	0
Highest reported	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_	CPICH_RSCP_
value (Cell 2)	44	57	13	15	16

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1.2 Relative accuracy requirement

8.7.1.1.2.1 Definition and applicability

The relative accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.1.2.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

- CPICH_RSCP1,2 $|_{dBm} \ge -114 dBm$ for Band I,.
- CPICH_RSCP1,2|_{dBm} ≥ -112 dBm for Band II,
- CPICH_RSCP1,2 $|_{dBm} \ge -111 dBm$ for Band III.

-
$$\left| CPICH _RSCP1 \right|_{in dBm} - CPICH _RSCP2 \right|_{in dBm} \le 20 dB$$

$$- \frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dB} \le 20dB$$

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

		Accurac	cy [dB]	Conditions		
Parameter	Unit	Normal	Extreme	lo [d	dBm/3.84 MHz]	
		condition	condition	Band I	Band II	Band III
CPICH_RSCP	dBm	±3	±3	-9450	-9250	-9150

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.2 and A.9.1.1.2.

8.7.1.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.1.2.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.2.3.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.

- 4) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 5) The result of step 3) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.2.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.2.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated.
- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.1.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.1.2.5 Test requirements

Table 8.7.1.1.2.2: CPICH_RSCP Intra frequency relative accuracy, test requirements

		Accura	Accuracy [dB]		Conditions		
Parameter	Unit	Normal	Extreme	lo	[dBm/3.84 MHz	<u>z]</u>	
		condition	condition	Band I	Band II	Band III	
CPICH_RSCP	dBm	±3.8	±3.8	-9450	-9250	-9150	

Table 8.7.1.1.2.3: CPICH RSCP Intra frequency test parameters

Parameter		Unit	Tes	st 1	Test 2		Test 3	
		Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Char	nnel number		Char	nel 1	Channel 1		Channel 1	
CPICH_Ec/lor		dB	-1	0	-1	0	-1	0
PCCPCH_Ec/Id	or	dB	-1	2	-1	2	-1	2
SCH_Ec/lor		dB	-1	2	-1	2	-1	2
PICH_Ec/lor		dB	-1	5	-1	5	-1	5
DPCH_Ec/lor		dB	-15	-	-15	-	-15	-
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
	Band I						-96	.47
loc	Band II	dBm/ 3.84 MHz	-74.54		-61,6		-94	.47
	Band III						-93.47	
Îor/loc		dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH	Band I						-106.17	-112.7
RSCP, Note 1	Band II	dBm	-80.2	-84.2	-62.3	-71.3	-104.17	-110.7
NOCE, NOTE I	Band III						-103.17	-109.7
	Band I				'		-92	2,8
Io, Note 1 Band II		dBm/ 3.84 MHz	-67	7.8	-5	1,4	-90	0.8
Band III							-89.8	
Propagation co	ndition	-	AW	GN	AWGN		AWGN	

NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the relative intra frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.1.2.4.

Table 8.7.1.1.2.4: CPICH_RSCP Intra frequency relative accuracy requirements for the reported values

	Test 1	Test 2	Test 3			
Normal Conditions						
Lowest reported value cell 2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 13)	CPICH_RSCP_(x - 11)			
Highest reported value cell 2	CPICH_RSCP_x	CPICH_RSCP_(x - 5)	CPICH_RSCP_(x - 3)			
Extreme Conditions						
Lowest reported value cell2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 13)	CPICH_RSCP_(x - 11)			
Highest reported value cell2	CPICH_RSCP_x	CPICH_RSCP_(x - 5)	CPICH_RSCP_(x - 3)			
CPICH_RSCP_x is the reported value of cell 1						

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2 Inter frequency measurement accuracy

8.7.1.2.1 Relative accuracy requirement

8.7.1.2.1.1 Definition and applicability

The relative accuracy of CPICH RSCP in inter frequency case is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.2.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

- CPICH_RSCP1,2 $|_{dBm} \ge -114 dBm$ for Band I.

- CPICH_RSCP1,2|_{dBm} ≥ -112 dBm for Band II,
- CPICH_RSCP1,2|_{dBm} ≥ -111 dBm for Band III.

-
$$\left| CPICH _RSCP1 \right|_{in \ dBm} - CPICH _RSCP2 \Big|_{in \ dBm} \right| \le 20 dB$$
.

- | Channel 1_Io| $_{dBm/3.84~MHz}$ -Channel 2_Io| $_{dBm/3.84~MHz}$ | $\leq 20~dB$.

$$- \frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dB} \le 20dB.$$

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

		Accura	Accuracy [dB]		Conditions	
Parameter	Unit	Normal	Extreme	10	lo [dBm/3.84 MHz]	
		condition	condition	Band I	Band II	Band III
CPICH_RSCP	dBm	±6	±6	-9450	-9250	-9150

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.2.1 and A.9.1.1.2.

8.7.1.2.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.2.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 – TTI/10msec))mod 256". CPICH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Table 8.7.1.2.1.2: CPICH RSCP Inter frequency parameters

Devemeter		Unit	Tes	st 1	Test 2	
Param	Parameter		Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Chani	nel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/lor		dB	-1	0	-1	0
PCCPCH_Ec/lo	r	dB	-1	2	-1	12
SCH_Ec/lor		dB	-1	2	-1	12
PICH_Ec/lor		dB	-1	15	-1	15
DPCH_Ec/lor		dB	-15	-	-15	-
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94
	Band I	dDm/204	-60.00	-60.00	-84.00	-94.46
loc	Band II	dBm/ 3.84 MHz			-82.00	-92.46
	Band III	IVII IZ			-81.00	-91.46
Îor/loc		dB	9.54	9.54	0	-9.54
CDICH DCCD	Band I				-94.0	-114.0
CPICH RSCP, Note 1	Band II	dBm	-60.46	-60.46	-92.0	-112.0
Note 1	Band III				-91.0	-111.0
	Band I	dDm/2 04			-81.0	-94.0
Io, Note 1	Band II	dBm/3.84 MHz	-50.00	-50.00	-79.0	-92.0
	Band III	IVITZ			-78.0	-91.0
Propagation con	dition	-	AWGN		AWGN	

NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for test 2 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.1.2.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.4.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 7) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated.
- 9) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 - TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	B
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Derault DPCH Offset Value -Downlink information per radio link list	INOLI IGOGIIL
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary CPICH into -Primary scrambling code	100
i filmary sorambiling code	100

-PDSCH with SHO DCH Info -PDSCH code mapping -Downlink DPCH info for each RL -CHOICE mode

-Primary CPICH usage for channel estimation

-DPCH frame offset

-Secondary CPICH info -DL channelisation code -Secondary scrambling code

-Spreading factor -Code number

-Scrambling code change -TPC combination index

-SSDT Cell Identity

-Closed loop timing adjustment mode -SCCPCH Information for FACH

Not Present Not Present

FDD

Primary CPICH may be used

Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400

Not Present

Not Present

128 96

No code change

0

Not Present Not Present Not Present

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	Not i resent
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	Woully
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	T enoulcal reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	Intra-frequency measurement
- Intra-frequency measurement objects list	
- Intra-frequency measurement objects list -Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	Not i resent
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	or lorricoor
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUEFALSE
-Reporting quantities for monitored set cells	FALSE
-Cell synchronisation information reporting	17,232
indicator	
-Cell Identity reporting indicator	FALSE
-CHOICE mode	
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FDD
-Pathloss reporting indicator	TRUEFALSE
-Reporting quantities for detected set cells	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	Not Present
· ·	
-Maximum number of reported cells	Report all active set cells + cells within
-Measurement validity	monitored set on used frequency
-CHOICE report criteria	Virtual/active set cells + 2
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria
	Infinity
	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUEFALSE
-Reporting cell status	FALSE
-CHOICE reported cell	
	Report cells within monitored set on non-used
-Maximum number of reported cells	frequency
-Measurement validity	2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
Bu i la la la companya di managara di mana	500 ms
Physical channel information elements	N / P
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.2.1.5 Test requirements

Table 8.7.1.2.1.3: CPICH_RSCP Inter frequency relative accuracy, test requirements

		Accura	cy [dB]	Conditions			
Parameter	Unit	Normal	Extreme	lo [dBm/3.84 MHz]			
		condition	condition	Band I	Band II	Band III	
CPICH_RSCP	dBm	±7.1	±7.1	-9450	-9250	-9150	

Table 8.7.1.2.1.4: CPICH RSCP Inter frequency tests parameters

Parameter		Unit	Tes	st 1	Tes	st 2
Paraili	etei	Onit	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Chann	nel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/lor		dB	-1	0	-1	10
PCCPCH_Ec/loi	r	dB	-1	2	-1	12
SCH_Ec/lor		dB	-1	2	-1	12
PICH_Ec/lor		dB	-1	5	-1	15
DPCH_Ec/lor		dB	-15	-	-15	-
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94
	Band I	dDm/204			-83.00	-93.46
loc	Band II	dBm/ 3.84 MHz	-61.6	-61.6	-81.00	-91.46
	Band III	IVII IZ			-80.00	-90.46
Îor/loc		dB	9.84	9.84	0.3	-9.24
CDICH DCCD	Band I				-92.7	-112.7
CPICH RSCP, Note 1	Band II	dBm	-61.8	-61.8	-90.7	-110.7
Note i	Band III				-89.7	-109.7
	Band I	dDm/2 04			-79.8	-93.0
Io, Note 1	Band II	dBm/3.84 MHz	-51.3	-51.3	-77.8	-91.0
	Band III	IVITZ			-76.8	-90.0
Propagation con	dition	-	AW	GN	AWGN	

NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for test 2 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the relative inter frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.2.1.5.

Table 8.7.1.2.1.5: CPICH_RSCP Inter frequency relative accuracy requirements for the reported values

	Test 1	Test 2	
Normal Cond	ditions		
Lowest reported value cell 2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 28)	
Highest reported value cell 2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x - 12)	
Extreme Cor	nditions		
Lowest reported value cell2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 28)	
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x - 12)	
CPICH_RSC			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2 CPICH Ec/lo

8.7.2.1 Intra frequency measurements accuracy

8.7.2.1.1 Absolute accuracy requirement

8.7.2.1.1.1 Definition and applicability

The absolute accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the actual CPICH_Ec/Io power ratio from same cell.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.1.1 are valid under the following conditions:

- CPICH_RSCP1|_{dBm} ≥ -114 dBm for Band I.
- CPICH_RSCP1|_{dBm} ≥ -112 dBm for Band II,
- CPICH_RSCP1|_{dBm} ≥ -111 dBm for Band III.

$$- \left. \frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} \right|_{in\ dB} - \left. \left(\frac{CPICH_E_c}{I_{or}} \right) \right|_{in\ dB} \le 20dB.$$

Table 8.7.2.1.1.1: CPICH_Ec/lo Intra frequency absolute accuracy, minimum requirements

		Accuracy [dB]	Conditions			
Parameter	Unit	Unit Normal condition Extreme		lo [dBm/3.84 MHz]		Hz]
		Normal condition	condition	Band I	Band II	Band III
CPICH_Ec/lo	dB	\pm 1,5 for -14 \leq CPICH Ec/lo \pm 2 for -16 \leq CPICH Ec/lo $<$ -14 \pm 3 for -20 \leq CPICH Ec/lo $<$ -16	±3	-9450	-9250	-9150

The normative reference for this requirement is TS 25.133 [2] clause 9.1.2.1.1.

8.7.2.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io absolute measurement accuracy is within the specified limits in clause 8.7.2.1.1.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.1.1.4 Method of test

8.7.2.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH Ec/Io intra frequency absolute accuracy requirements are tested by using the test parameters in table 8.7.2.1.1.2.

Table 8.7.2.1.1.2: CPICH Ec/lo Intra frequency parameters

Parameter		Unit	Tes	st 1	Tes	st 2	Tes	st 3
		Oilit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Chai	nnel number		Char	nel 1	Channel 1		Channel 1	
CPICH_Ec/lor		dB	-1	0	-1	0	-1	0
PCCPCH_Ec/le	or	dB	-1	2	-1	2	-1	2
SCH_Ec/lor		dB	-1	2	-1	2	-1	2
PICH_Ec/lor		dB	-1	15	-1	5	-1	5
DPCH_Ec/lor		dB	-15	-	-15	-	-6	ı
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-2.56	-0.94
	Band I		-56.98		-89.07		-94	.98
loc	Band II	dBm/ 3.84 MHz			6.98 -87.07		-92	.98
	Band III				-86	.07	-91	.98
Îor/loc		dB	3.0	3.0	-2.9	-2.9	-9.0	-9.0
CPICH Ec/lo, N	Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	Io, Note 1 Band I				-86		-0)4
Band II		dBm/3.84 MHz	-5	50	-84		-6)2
	Band III				-83		-0)1
Propagation co	ndition	-	AW	'GN	AW	'GN	AWGN	

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.2.1.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.1.5.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check CPICH_Ec/No value in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1, which is compared to the actual CPICH Ec/Io power ratio from the same cell for each MEASUREMENT REPORT message.
- 5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.5 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.5 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Table 8.7.2.1.1.3: CPICH Ec/lo measurement report mapping

Reported value	Measured quantity value	Unit
CPICH_Ec/No _00	CPICH Ec/lo < -24	dB
CPICH_Ec/No _01	-24 ≤ CPICH Ec/lo < -23.5	dB
CPICH_Ec/No _02	-23.5 ≤ CPICH Ec/lo < -23	dB
CPICH_Ec/No _47	-1 ≤ CPICH Ec/lo < -0.5	dB
CPICH_Ec/No _48	-0.5 ≤ CPICH Ec/lo < 0	dB
CPICH_Ec/No _49	0 ≤ CPICH Ec/Io	dB

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	THOU TOOSIN
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	Acknowledged mode RLC
- Measurement Report Transfer Mode	Periodical reporting
- Periodical Reporting / Event Trigger Reporting	l one area reperting
Mode	Not Present
-Additional measurement list	Intra-frequency measurement
-CHOICE Measurement Type	mad modulation modelations
-Intra-frequency measurement	
- Intra-frequency measurement objects list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	
-Cell synchronisation information reporting	
indicator	FALSE
-Cell Identity reporting indicator	
-CHOICE mode	FALSE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUEFALSE
-Reporting quantities for detected set cells	FALSE
-Reporting cell status	Not Present
-CHOICE reported cell	
·	Report all active set cells + cells within
-Maximum number of reported cells	monitored set on used frequency
-Measurement validity	Virtual/active set cells + 2
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.1.1.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in subclause 8.7.2.1.1.2 as shown in table 8.7.2.1.1.4.

Table 8.7.2.1.1.4: CPICH_Ec/lo Intra frequency absolute accuracy, test requirements

		Accuracy [dB]	Conditions			
Parameter	Unit	Normal condition	Extreme	lo [dBm/3.84 MHz]		
		Normal Condition	condition	Band I	Band II	Band III
CPICH_Ec/	dB	-3.11.9 for -14 ≤ CPICH Ec/lo -3.62.4 for -16 ≤ CPICH Ec/lo < -14 -4.63.4 for -20 ≤ CPICH Ec/lo < -16	-4.63.4	-9487	-9285	-9184
Io	QD.	\pm 1.95 for -14 \leq CPICH Ec/lo \pm 2.4 for -16 \leq CPICH Ec/lo $<$ -14 \pm 3.4 for -20 \leq CPICH Ec/lo $<$ -16	± 3.4	-8750	-8550	-8450

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.1.1.5: CPICH_Ec/lo Intra frequency tests parameters

Parameter		Unit	Tes	st 1	Tes	st 2	Tes	st 3		
		Offic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2		
UTRA RF Char	nnel number		Char	nel 1	Char	nel 1	Channel 1			
CPICH_Ec/lor		dB	-9	.7	-9	.8	-9	.9		
PCCPCH_Ec/lo	or	dB	-1 ⁻	1.7	-11	1.8	-11	1.9		
SCH_Ec/lor		dB	-1 ⁻	1.7	-11	1.8	-11	1.9		
PICH_Ec/lor		dB	-14	4.7	-14	4.8	-14	4.9		
DPCH_Ec/lor		dB	-14.7	-	-14.8	-	-5.9	-		
OCNS_Ec/lor		dB	-1.2	-1.02	-1.17	-0.99	-2.64	-0.97		
	Band I		-58.5				-89.07		-93	.98
loc	Band II	dBm/ 3.84 MHz			-58.5 -87.07		-91	.98		
	Band III				-86	.07	-90	.98		
Îor/loc		dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7		
CPICH Ec/Io, N	lote 1	dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6		
	Band I						-85	.85	-92	2.9
Io, Note 1 Band II		dBm / 3.84 MHz	-5°	1.3	-83.85		-90	0.9		
	Band III				-82	.85	-89	9.9		
Propagation co	ndition	-	AW	'GN	AW	AWGN		GN		

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the absolute intra frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.1.1.6.

Table 8.7.2.1.1.6: CPICH_Ec/lo Intra frequency absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Normal Conditions			
Lowest reported value	CPICH_Ec/No_17	CPICH_Ec/No_12	CPICH_Ec/No_0
Highest reported value	CPICH_Ec/No_25	CPICH_Ec/No_22	CPICH_Ec/No_16
Extreme Conditions			
Lowest reported value	CPICH_Ec/No_14	CPICH_Ec/No_10	CPICH_Ec/No_0
Highest reported value	CPICH_Ec/No_28	CPICH_Ec/No_24	CPICH_Ec/No_16

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.1.2 Relative accuracy requirement

8.7.2.1.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.1.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.2.1 are valid under the following conditions:

- CPICH_RSCP1,2|_{dBm} ≥ -114 dBm for Band I.
- CPICH_RSCP1,2|_{dBm} ≥ -112 dBm for Band II,
- CPICH_RSCP1,2|dBm ≥ -111 dBm for Band III.

$$-\left|CPICH _RSCP1\right|_{in \ dBm} - CPICH _RSCP2\Big|_{in \ dBm} \le 20dB.$$

$$-\frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dB} \le 20dB.$$

Table 8.7.2.1.2.1: CPICH_Ec/lo Intra frequency relative accuracy

		Accuracy [dB]			Conditions	
Parameter	Unit	Normal condition	Extreme	lo	[dBm/3.84 MI	Hz]
		Normal condition	condition	Band I	Band II	Band III
	dB	±1,5 for -14 ≤ CPICH Ec/lo				
CPICH_Ec/lo		±2 for -16 ≤ CPICH Ec/lo < -14	±3	-9450	-9250	-9150
		± 3 for $-20 \le CPICH Ec/lo < -16$				

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.2.1.2 and A.9.1.2.2.

8.7.2.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io relative measurement accuracy is within the specified limits in clause 8.7.2.1.2.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.1.2.4 Method of test

8.7.2.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are in the same frequency. CPICH Ec/Io intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.1.1.2.

8.7.2.1.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.2.3.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio value measured from Cell 1 is compared to CPICH_Ec/Io power ratio value measured from Cell 2 for each MEASUREMENT REPORT message.
- 5) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.2.3 for Test 2. While RF parameters are being set up, MEASUREMENT

REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.2.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4) and 5) above are repeated.

- 7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.2.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.1.2.5 Test requirements

Table 8.7.2.1.2.2: CPICH_Ec/lo Intra frequency relative accuracy

	Accuracy [dB]				Conditions	
Parameter	Unit	Normal condition	Extreme	lo [dBm / 3.84 M	Hz]
		Normal condition	condition	Band I	Band II	Band III
	dB	± 2.3 for -14 \leq CPICH Ec/lo				
CPICH_Ec/lo		± 2.8 for -16 \leq CPICH Ec/lo $<$ -14	±3.8	-9450	-9250	-9150
		± 3.8 for $-20 \le CPICH Ec/lo < -16$				

Table 8.7.2.1.2.3: CPICH_Ec/lo Intra frequency tests parameters

Do	rameter	Unit	Tes	st 1	Tes	st 2	Tes	st 3		
Farameter		Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2		
UTRA RF C	nannel number		Char	nel 1	Char	nel 1	Channel 1			
CPICH_Ec/le	or	dB	-6	.7	-9	.8	-9	.9		
PCCPCH_E	c/lor	dB	-1 ⁻	1.7	-1 ⁻	1.8	-1 <i>°</i>	1.9		
SCH_Ec/lor		dB	-1	1.7	-11	1.8	-11	1.9		
PICH_Ec/lor	,	dB	-14	4.7	-14	4.8	-14.9			
DPCH_Ec/lo	or	dB	-14.7	-	-14.8	-	-5.9	-		
OCNS_Ec/lo	or	dB	-1.2	- 1.02	-1.17	-0.99	-2.64	-0.97		
	Band I		-58.5		-89.07		-93	.98		
loc	Band II	dBm/ 3.84 MHz			-87.07		-91	.98		
	Band III						-86	.07	-90	.98
Îor/loc		dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7		
CPICH Ec/lo	, Note 1	dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6		
	Band I							-85.85		2.9
Io, Note 1	Band II	dBm / 3.84 MHz	-5	1,3	-83.85		-90).9		
Band III					-82	.85	-89	9.9		
Propagation	condition	-	AW	'GN	AWGN		AWGN			

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the relative intra frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.1.2.4.

Table 8.7.2.1.2.4: CPICH_Ec/lo Intra frequency relative accuracy requirements for the reported values

	Test 1	Test 2	Test 3				
Normal Conditions							
Lowest reported value cell 2	CPICH_Ec/No_(x - 5)	CPICH_Ec/No_(x - 6)	CPICH_Ec/No_(x - 8)				
Highest reported value cell 2	CPICH_Ec/No_(x+ 5)	CPICH_Ec/No_(x + 6)	CPICH_Ec/No_(x+ 8)				
Extreme Conditions							
Lowest reported value cell2	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 8)				
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x+ 8)	CPICH_Ec/No_(x+ 8)				
CPICH_Ec/No_x is the reported value of cell 1							

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.2 Inter frequency measurement accuracy

8.7.2.2.1 Absolute accuracy requirement

Void

8.7.2.2.2 Relative accuracy requirement

8.7.2.2.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io in the inter frequency case is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.2.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.2.2.1 are valid under the following conditions:

- CPICH_RSCP1,2 $|_{dBm} \ge -114 dBm$ for Band I.
- CPICH_RSCP1,2|_{dBm} ≥ -112 dBm for Band II,
- CPICH_RSCP1,2 $|_{dBm} \ge -111 dBm$ for Band III.

$$-\left|CPICH _RSCP1\right|_{in\ dBm} - CPICH _RSCP2\Big|_{in\ dBm}\right| \le 20dB.$$

- | Channel $1_{Io}|_{dBm/3.84 \text{ MHz}}$ -Channel $2_{Io}|_{dBm/3.84 \text{ MHz}}$ | $\leq 20 \text{ dB}$.

$$-\frac{I_{o}}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_{E_{c}}}{I_{or}}\right)_{in\ dB} \leq 20dB.$$

Table 8.7.2.2.2.1: CPICH_Ec/lo Inter frequency relative accuracy, minimum requirements

		Accuracy [dB]	Conditions				
Parameter	Unit	Normal condition	Extreme	lo [dBm/3.84 MHz]			
		Normal condition	condition	Band I	Band II	Band III	
	dB	±1.5 for -14 ≤ CPICH Ec/lo					
CPICH_Ec/lo		± 2 for -16 \leq CPICH Ec/lo $<$ -14	±3	-9450	-9250	-9150	
		± 3 for $-20 \le CPICH Ec/lo < -16$					

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.2.2.2 and A.9.1.2.2.

8.7.2.2.2.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io relative measurement accuracy is within the specified limits in clause 8.7.2.2.2.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.2.2.4 Method of test

8.7.2.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 – TTI/10msec))mod 256". CPICH Ec/Io inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.2.2.2.

Table 8.7.2.2.2: CPICH Ec/lo Inter frequency parameters

Parameter		Unit	Test 1		Test 2		Test 3	
		Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
number								
CPICH_Ec		dB	-1	10	-1	10	-1	10
PCCPCH_	Ec/lor	dB	-1	2	-1	12	-1	12
SCH_Ec/ld	r	dB	-1	2	-1	12	-1	12
PICH_Ec/le	or	dB	-15		-15		-15	
DPCH_Ec/	lor	dB	-15	-	-6	-	-6	-
OCNS_Ec/	'lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
	Band I	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
loc	Band II				-85.27	-85.27	-92.46	-92.46
	Band III	IVII IZ			-84.27	-84.27	-91.46	-91.46
Îor/loc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/	lo, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
	Band I	dBm/3.84			-86	-86	-94	-94
Io, Note 1	Band II	MHz	-50	-50	-84	-84	-92	-92
	Band III	IVIMZ			-83	-83	-91	-91
Propagatio	n condition	-	AW	'GN	AWGN		AWGN	

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.2.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.2.2.4.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio measured from Cell 1 is compared to CPICH_Ec/Io power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 7) The result of step 6) is compared to actual power level difference of CPICH Ec/Io of Cell 1 and Cell 2.
- 8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up

according to table 8.7.2.2.2.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6) and 7) above are repeated.

- 9) After 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI -RRC State Indicator	Not Present
-UTRAN DRX cycle length coefficient	CELL_DCH Not Present
CN Information Elements	Not i resent
-CN Information info	Not Present
UTRAN mobility information elements	THOSE TROOPING
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	500
-CHOICE mode	FDD Not Brosont
-Downlink PDSCH information -Downlink information common for all radio links	Not Present
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0 3
-TGPL1	Not Present
-TGPL2 -RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	В
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort -T Reconfirm abort	Not Present
	Not Present Not Present
-TX Diversity Mode -SSDT information	Not Present Not Present
-SSDT Information -Default DPCH Offset Value	Not Present
-Downlink information per radio link list	THOU TOUGHT
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
· • • • • • • • • • • • • • • • • • • •	

-PDSCH with SHO DCH Info -PDSCH code mapping -Downlink DPCH info for each RL -CHOICE mode

-Primary CPICH usage for channel estimation

-DPCH frame offset

-Secondary CPICH info -DL channelisation code -Secondary scrambling code

-Spreading factor -Code number

-Scrambling code change -TPC combination index

-SSDT Cell Identity

-Closed loop timing adjustment mode -SCCPCH Information for FACH

Not Present Not Present

FDD

Primary CPICH may be used

Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400

Not Present

Not Present

128 96

No code change

0

Not Present Not Present Not Present

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0 Not Brosset
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	A alva avida da a dissa da DLO
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	Net Decemb
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	Not Present
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity -Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	CFICIT KOCF
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUEFALSE
-Reporting quantities for monitored set cells	FALSE
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	FALSE
-CHOICE mode	
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FDD
-Pathloss reporting indicator	TRUE FALSE
-Reporting quantities for detected set cells	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	Not Present
Maximum number of reported calls	Papart all active act calls a salls within
-Maximum number of reported cells	Report all active set cells + cells within
-Measurement validity -CHOICE report criteria	monitored set on used frequency Virtual/active set cells + 2
-Amount of reporting	Not Present
-Amount of reporting -Reporting interval	Periodical reporting criteria
-ivehoring interval	Infinity
	250 ms
Physical channel information elements	200 1113
-DPCH compressed mode status info	Not Present
Di Ori compresseu mode status inic	1401.11636111

Second MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	Talagricinan
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	Not i resent
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	Getap
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	T chodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	men nequency modednement
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	THE THOUSEN
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUEFALSE
-Reporting cell status	FALSE
-CHOICE reported cell	
·	Report cells within monitored set on non-used
-Maximum number of reported cells	frequency
-Measurement validity	2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.2.5 Test requirements

The effect of assumed thermal noise and noise generated in the receiver (–99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in clause 8.7.2.2.2.2 as shown in table 8.7.2.2.2.3.

Table 8.7.2.2.2.3: CPICH_Ec/lo Inter frequency relative accuracy, test requirements

Parameter	Unit	Normal condition	Extreme	ie lo [dBm/3.84 MHz]		Hz]
			condition	Band I	Band II	Band III
CPICH_Ec/lo	dB	± 3.5 for -14 \leq CPICH Ec/lo ± 4 for -16 \leq CPICH Ec/lo $<$ -14 ± 5 for -20 \leq CPICH Ec/lo $<$ -16	± 5	-9487	-9285	-9184
		± 2.3 for -14 \leq CPICH Ec/lo ± 2.8 for -16 \leq CPICH Ec/lo $<$ -14 ± 3.8 for -20 \leq CPICH Ec/lo $<$ -16	± 3.8	-8750	-8550	-8450

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.2.2.4: CPICH Ec/lo Inter frequency tests parameters

Poro	motor	Unit	Tes	st 1	Tes	st 2	Tes	st 3
Falai	Parameter		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF (Channel		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
number			Chameri	Charmer 2	Chameri	Chamerz	Chameri	Chamerz
CPICH_Ec	/lor	dB	-1	0	-1	10	-1	10
PCCPCH_	Ec/lor	dB	-1	2	-1	12	-1	12
SCH_Ec/ld	or	dB	-1	2	-1	12	-1	12
PICH_Ec/le	or	dB	-15		-15		-15	
DPCH_Ec/	'lor	dB	-15	-	-6	-	-6	-
OCNS_Ec/	lor/	dB	-1.12	-0.95	-2.55	-0.94	-2.55	-0.94
	Band I	dDm/204		-53.5	-86.27	-86.27	-93.46	-93.46
loc	Band II	dBm/ 3.84 MHz	-53.5		-84.27	-84.27	-91.46	-91.46
	Band III	IVII IZ			-83.27	-83.27	-90.46	-90.46
Îor/loc		dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/	To, Note 1	dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
	Band I	dDm /2 0.4			-84.9	-84.9	-93	-93
Io, Note 1	Band II	dBm /3.84 MHz	-51.15	-51.15	-82.9	-82.9	-91	-91
	Band III				-81.9	-81.9	-90	-90
Propagatio	n condition	-	AW	GN	AW	'GN	AW	GN

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

The reported values for the relative inter frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.2.2.5.

Table 8.7.2.2.2.5: CPICH_Ec/lo Inter frequency relative accuracy requirements for the reported values

	Test 1	Test 2	Test 3					
Normal Conditions								
Lowest reported value cell 2	CPICH_Ec/No_(x -5)	CPICH_Ec/No_(x - 6)	CPICH_Ec/No_(x - 10)					
Highest reported value cell 2	CPICH_Ec/No_(x+5)	CPICH_Ec/No_(x + 6)	CPICH_Ec/No_(x +10)					
Extreme Conditions								
Lowest reported value cell2	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 8)	CPICH_Ec/No_(x - 10)					
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x + 10)					
CPICH_Ec/No_x is the reported value of cell 1								

8.7.3 UTRA Carrier RSSI

NOTE: This measurement is for Inter-frequency handover evaluation.

8.7.3.1 Absolute measurement accuracy requirement

8.7.3.1.1 Definition and applicability

The absolute accuracy of UTRA Carrier RSSI is defined as the UTRA Carrier RSSI measured from one frequency compared to the actual UTRA Carrier RSSI power of that same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3.1.2 Minimum Requirements

Table 8.7.3.1.1: UTRA Carrier RSSI Inter frequency absolute accuracy

		Accuracy [dB]		Conditions			
Parameter	Unit	Normal	Extreme	lo	[dBm/3.84 MH	łz]	
		condition	condition	Band I	Band II	Band III	
UTRA Carrier	dBm	± 4	± 7	-9470	-9270	-9170	
RSSI	dBm	± 6	± 9	-7050	-7050	-7050	

The normative reference for this requirement is TS 25.133 [2] clause 9.1.3.1.

8.7.3.1.3 Test purpose

The purpose of this test is to verify that the UTRA Carrier RSSI measurement is within the specified limits. This measurement is for inter-frequency handover evaluation.

8.7.3.1.4 Method of test

8.7.3.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, Set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256". UTRA Carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

Table 8.7.3.1.2: UTRA Carrier RSSI Inter frequency test parameters

Para	notor	Unit	Tes	st 1	Test 2		Tes	st 3
Faiai	Parameter		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec	/lor	dB	-1	0	-1	10	-1	10
PCCPCH_	Ec/lor	dB	-1	2	-1	12	-1	12
SCH_Ec/lo	r	dB	-1	2	-1	12	-12	
PICH_Ec/ld	or	dB	-15		-15		-15	
DPCH_Ec/	lor	dB	-15	-	-6	-	-6	-
OCNS_Ec/	lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
	Band I	dBm/ 3.84 MHz	-52.22	-52.22			-94.46	-94.46
loc	Band II				-70.27	-70.27	-92.46	-92.46
	Band III	IVII IZ					-91.46	-91.46
Îor/loc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/	lo, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
	Band I	dDm/2.04					-94	-94
Io, Note 1	Band II	dBm/3.84 MHz	-50	-50	-69	-69	-92	-92
	Band III						-91	-91
Propagatio	n condition	-	AW	GN	AW	'GN	AWGN	

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.3.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.3.1.2.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA Carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.
- 7) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) above is repeated.
- 8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 2):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI -RRC State Indicator	Not Present
-UTRAN DRX cycle length coefficient	CELL_DCH Not Present
CN Information Elements	Not i resent
-CN Information info	Not Present
UTRAN mobility information elements	THOSE TROOPING
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	500
-CHOICE mode	FDD Not Brosont
-Downlink PDSCH information -Downlink information common for all radio links	Not Present
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0 3
-TGPL1	Not Present
-TGPL2 -RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	В
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort -T Reconfirm abort	Not Present
	Not Present Not Present
-TX Diversity Mode -SSDT information	Not Present Not Present
-SSDT Information -Default DPCH Offset Value	Not Present
-Downlink information per radio link list	THOU TOUGHT
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
· • • • • • • • • • • • • • • • • • • •	

-PDSCH with SHO DCH Info -PDSCH code mapping -Downlink DPCH info for each RL -CHOICE mode

-Primary CPICH usage for channel estimation

-DPCH frame offset

-Secondary CPICH info -DL channelisation code -Secondary scrambling code

-Spreading factor -Code number

-Scrambling code change -TPC combination index

-SSDT Cell Identity

-Closed loop timing adjustment mode -SCCPCH Information for FACH

Not Present Not Present

FDD

Primary CPICH may be used

Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400

Not Present

Not Present

128 96

No code change

0

Not Present Not Present Not Present

MEASUREMENT CONTROL message for Inter frequency measurement (step 4):

Wessage Type UE information elements -RRC transaction identifier -Integrity check info Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency reporting criteria -Filter coefficient -CHOICE mode -Measurement quantity for frequency quality -CPICH RSCP	Information Element	Value/Remark
-RRC transaction identifier -Integrity check info Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE mode	Message Type	
-RRC transaction identifier -Integrity check info Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE mode	LIE information alamants	
-Integrity check info Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cells -Cell for measurement -Inter-frequency measurement -Inter-fre		
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode 2 Acknowledged mode RLC Periodical reporting Not Present Inter-frequency measurement -Cell 2 information is included. Not Present -Cell 2 information is includedNot Present -Inter-frequency reporting criteria -Filter coefficient -CHOICE mode		
-Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cells -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode 2 Setup Acknowledged mode RLC Periodical reporting Not Present Inter-frequency measurement -Cell 2 information is included. Not Present -Inter-frequency reporting criteria -Filter coefficient -CHOICE mode		Not Flesent
-Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cells -New inter-frequency cells -Cell for measurement -Inter-frequency measurement -Inter-frequency measurement -Inter-frequency measurement -Inter-frequency measurement -Inter-frequency measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Setup Acknowledged mode RLC Periodical reporting Not Present Inter-frequency measurement Cell 2 information is included. Not Present Inter-frequency reporting criteria O FDD		2
-Measurement Report Transfer Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement -Inter-frequency measurement -Inter-frequency measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Acknowledged mode RLC Periodical reporting Not Present Inter-frequency measurement Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD		
- Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cells -New inter-frequency cells -Cell for measurement -Inter-frequency measurement -Inter-frequency measurement -Inter-frequency measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Acknowledged mode RLC Periodical reporting Not Present Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD		Setup
- Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Periodical reporting Not Present Inter-frequency measurement Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD		A also assisted as a discount of DLC
Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Not Present Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD		
-Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Not Present Not Present Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD		Periodical reporting
-CHOICE Measurement Type -Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Inter-frequency measurement Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD		N (B)
-Inter-frequency measurement -Inter-frequency cell info list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Not Present Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD		
-Inter-frequency cell info list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Not Present Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD		Inter-frequency measurement
-CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Not Present Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD		
-New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Cell 2 information is included. Not Present Inter-frequency reporting criteria 0 FDD		N . B
-Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Not Present Inter-frequency reporting criteria 0 FDD		
-Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode Inter-frequency reporting criteria 0 FDD		
-CHOICE reporting criteria -Filter coefficient -CHOICE mode Inter-frequency reporting criteria 0 FDD		Not Present
-Filter coefficient 0 -CHOICE mode FDD		
-CHOICE mode FDD		
		1 -
-Measurement quantity for frequency quality CPICH RSCP		
	-Measurement quantity for frequency quality	CPICH RSCP
estimate		
-Inter-frequency reporting quantity		
-UTRA Carrier RSSI TRUE		TRUE
-Frequency quality estimate TRUE		TRUE
-Non frequency related cell reporting quantities		
-Cell synchronisation information reporting	-Cell synchronisation information reporting	
indicator TRUE		TRUE
-Cell Identity reporting indicator		
-CHOICE mode TRUE		TRUE
-CPICH Ec/N0 reporting indicator FDD		FDD
-CPICH RSCP reporting indicator TRUE		TRUE
-Pathloss reporting indicator TRUE FALSE		TRUE FALSE
-Reporting cell status FALSE		FALSE
-CHOICE reported cell	-CHOICE reported cell	
		Report cells within monitored set on non-used
-Maximum number of reported cells frequency	-Maximum number of reported cells	
-Measurement validity 2	-Measurement validity	
-Inter-frequency set update Not Present		Not Present
-CHOICE report criteria Not Present		Not Present
-Amount of reporting Periodical reporting criteria		Periodical reporting criteria
-Reporting interval Infinity		
500 ms		
Physical channel information elements	Physical channel information elements	
-DPCH compressed mode status info Not Present		Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.3.1.5 Test requirements

The UTRA Carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.3.1.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in subclause 8.7.3.1.2 as shown in table 8.7.3.1.3.

				Accuracy	/ [dB]			
Parameter	Unit	No	Normal condition			Extreme condition		
		Test 1	Test 2	Test 3	Test 1	Test 2	Test 3	
UTRA Carrier RSSI	dBm	± 7.15	± 5.1	-55.8	± 10.15	± 8.1	-88.8	

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

Table 8.7.3.1.4: UTRA Carrier RSSI Inter frequency test parameters

Parameter		Unit	Tes	st 1	Test 2		Test 3	
Faiaii	iletei	Oill	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
	UTRA RF Channel		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
number			Onamio i	Onamio 2	Onamio i	Onamio 2	Onamor i	Onamio 2
CPICH_Ec/	lor	dB	-1	10	-1	10	-1	10
PCCPCH_E	Ec/lor	dB	-1	2	-1	2	-1	12
SCH_Ec/lor	r	dB	-1	2	-1	2	-1	12
PICH_Ec/lo	r	dB	-15		-15		-15	
DPCH_Ec/I	or	dB	-15	-	-6	-	-6	-
OCNS_Ec/I	or	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
	Band I	dDm/204					-93.46	-93.46
loc	Band II	dBm/ 3.84 MHz	-5 3 5	-53.5	-69.27	-69.27	-91.46	-91.46
	Band III	IVII IZ					-90.46	-90.46
Îor/loc		dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/I	o, Note 1	dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
	Band I	dBm/3.84					-93	-93
Io, Note 1	Band II	MHz	-51.15 -51.	-51.15	-67.9	-67.9	-91	-91
	Band III	IVIITZ					-90	-90
Propagation	n condition	1	AW	'GN	AW	'GN	AWGN	

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the UTRA Carrier RSSI absolute measurement shall meet the requirements in table 8.7.3.1.5.

Table 8.7.3.1.5: UTRA Carrier RSSI absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3				
Normal Conditions							
Lowest reported	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_				
value (Cell 2)	42	27	02				
Highest reported	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_				
value (Cell 2)	57	38	13				
Extreme Condition	s						
Lowest reported	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_				
value (Cell 2)	39	24	00				
Highest reported	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_				
value (Cell 2)	60	41	16				

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3.2 Relative measurement accuracy requirement

8.7.3.2.1 Definition and applicability

The relative accuracy requirement is defined as the UTRA Carrier RSSI measured from one frequency compared to the UTRA Carrier RSSI measured from another frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3.2.2 Minimum Requirements

The accuracy requirements in table 8.7.3.2.1 are valid under the following condition:

| Channel $1_{Io}|_{dBm/3.84 \text{ MHz}}$ -Channel $2_{Io}|_{dBm/3.84 \text{ MHz}}$ | < 20 dB.

Table 8.7.3.2.1: UTRA Carrier RSSI Inter frequency relative accuracy

		Accuracy [dB]			Conditions	
Parameter	Unit	Normal Extreme		lo	[dBm/3.84 MH	z]
		condition	condition	Band I	Band II	Band III
UTRA Carrier RSSI	dBm	± 7	± 11	-9470	-9270	-9170

The normative reference for this requirement is TS 25.133 [2] clause 9.1.3.2.

8.7.3.2.3 Test purpose

The purpose of this test is to verify that the UTRA Carrier RSSI measurement is within the specified limits. This measurement is for inter-frequency handover evaluation.

8.7.3.2.4 Method of test

8.7.3.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, Set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256". UTRA Carrier RSSI relative accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

8.7.3.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 3 are set up according to table 8.7.3.2.3.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check UTRA carrier RSSI value of Channel 1 and Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power value measured from Channel 1 is compared to UTRA carrier RSSI power value measured from Channel 2 for each MEASUREMENT REPORT message.
- 7) The result of step 6) is compared to actual power level difference of UTRA Carrier RSSI of Channel 1 and Channel 2.
- 8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message and MEASUREMENT CONTROL message for Inter frequency measurement in clause 8.7.3.1.4.2 is used.

MEASUREMENT REPORT message for inter – frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.3.2.5 Test requirements

The UTRA Carrier RSSI relative measurement accuracy shall meet the requirements in clause 8.7.3.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm, -97 dBm, -96 dBm for Frequency Band I, II and III respectively) shall be added into the required accuracy defined in clause 8.7.3.2.2 as shown in table 8.7.3.2.2.

Table 8.7.3.2.2: UTRA Carrier RSSI relative accuracy

		Accuracy	/ [dB]
Parameter	Unit	Normal condition	Extreme condition
	•	Test 3	Test 3
UTRA Carrier RSSI	dBm	± 7.4	± 11.4

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

Table 8.7.3.2.3: UTRA Carrier RSSI Inter frequency test parameters

В	larameter	Unit	Tes	st 3
	Parameter ITPA PE Channel number		Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2
CPICH_Ec/	/lor	dB	-1	0
PCCPCH_I	Ec/lor	dB	-1	2
SCH_Ec/lo	r	dB	-1	2
PICH_Ec/Id	or	dB	-1	15
DPCH_Ec/lor		dB	-6	-
OCNS_Ec/lor		dB	-2.56	-0.94
	Band I	-ID/ 0.04	-93.46	-93.46
loc	Band II	dBm/ 3.84 MHz	-91.46	-91.46
	Band III	IVII IZ	-90.46	-90.46
Îor/loc		dB	-9.24	-9.24
CPICH Ec/	lo, Note 1	dBm	-19.7	-19.7
	Band I	dBm/3.84	-93	-93
Io, Note 1	Band II	- MHz	-91	-91
Band III		IVIDZ	-90 -90	
Propagation	n condition	-	AW	GN
NOTE 1: (CPICH Ec/lo and lo I	evels have been	calculated from other	er parameters for

NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

The reported values for the UTRA Carrier RSSI relative measurement shall meet the requirements in table 8.7.3.2.4.

Table 8.7.3.2.4: UTRA Carrier RSSI relative accuracy requirements for the reported values

	Test 3			
Normal Conditions				
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_(x - 8)			
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV_(x + 8)			
Extreme Conditions				
Lowest reported value (Cell 2)	UTRA_carrier_RSSI_LEV(x - 12)			
Highest reported value (Cell 2)	UTRA_carrier_RSSI_LEV(x + 12)			
UTRA_carrier_RSSI_LEV_x is the reported value of cell 1				

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Next section changed

8.7.4 SFN-CFN observed time difference

8.7.4.1 Intra frequency measurement requirement

8.7.4.1.1 Definition and applicability

The intra frequency SFN-CFN observed time difference is defined as the SFN-CFN observed time difference from the active cell to a neighbour cell that is in the same frequency. This measurement is specified in clause 5.1.8 of TS 25.215 [22].

The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.4.1.2 Minimum requirements

The accuracy requirement in table 8.7.4.1.1 is valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114 dBm$ for Band I.

CPICH_RSCP1,2 $|_{dBm} \ge -112 dBm$ for Band II,

CPICH_RSCP1,2 $|_{dBm} \ge -111$ dBm for Band III.

$$\begin{aligned} & \left| CPICH _RSCP1 \right|_{in \ dBm} - CPICH _RSCP2 \Big|_{in \ dBm} \right| \leq 20 dB \\ & \left| \underbrace{I_o}_{\left(\widehat{I}_{or} \right)} \right|_{in \ dB} - \left(\frac{CPICH _E_c}{I_{or}} \right) \Big|_{in \ dB} \leq 20 dB \\ & \left| \underbrace{I_o}_{\left(\widehat{I}_{or} \right)} \right|_{in \ dB} - \left(\frac{P - CCPCH _E_c}{I_{or}} \right) \Big|_{in \ dB} \text{ is low enough to ensure successful SFN decoding.} \end{aligned}$$

Table 8.7.4.1.1 SFN-CFN observed time difference intra frequency accuracy

				Conditions	
Parameter	Unit	Accuracy [chip]		lo [dBm/3.84 MHz]	
			Band I	Band II	Band III
SFN-CFN observed time difference	chip	± 1	-9450	-9250	-9150

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.7.1 and A.9.1.4.2.

8.7.4.1.3 Test Purpose

The purpose of this test is to verify that the SFN-CFN observed time difference measurement accuracy is within the specified limits in the clause 8.7.4.1.2. This measurement is for handover timing purposes to identify active cell and neighbour cell time difference.

8.7.4.1.4 Method of test

8.7.4.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

In this case all cells are in the same frequency. Table 8.7.4.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table 8.7.4.1.2: SFN-CFN observed time difference Intra frequency test parameters

Parameter	Unit	Tes	t 1	Tes	st 2	Test 3					
Farailleter	Offic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2				
UTRA RF Channel number		Channel 1		Channel 1 Channel 1		Channel 1					
CPICH_Ec/lor	dB	-10	0	-1	0	-1	0				
PCCPCH_Ec/lor	dB	-1:	2	-1	2	-1	2				
SCH_Ec/lor	dB	-1:	2	-1	2	-1	2				
PICH_Ec/lor	dB	-1:	5	-1	5	-1	5				
DPCH_Ec/lor	dB	-15 -15		-15 -15		-15					
OCNS_Ec/lor	dB	-1.11		-1.11 -1.11		-1.11					
Îor/loc	dB	10.5		10.5		10.5		10	10.5).5
loc	dBm/ 3.84 MHz	lo -13.7 dB = loc,		lo -13.7	Io -13.7 dB = Ioc,		lo -13.7 dB = loc,				
loc	UDITI/ 3.04 IVII IZ	Note	Note 1		Note 1		Note 1				
Band I						-9)4				
lo Band II	dBm/3.84 MHz	-50	-50		-72		92				
Band III)1				
SFN-CFN observed time											
difference as specified in TS	chip	X Note 2									
25.215 [22]				NOL	C						
Propagation condition	-	AWO	GN	AW	GN	AW	GN				

NOTE 1: *loc* level shall be adjusted according the total signal power *lo* at receiver input and the geometry factor *for/loc*.

NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters "OFF" and "Tm" as specified in TS 25.215 [22].

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.4.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.1.4.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT message.
- 4) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.8 of TS 25.215 [22]. This value shall be compared to the actual SFN-CFN observed time difference value for each MEASUREMENT REPORT message.
- 5) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) above is repeated.
- 6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for intra frequency measurement

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
	Not Present
-Integrity check info Measurement Information elements	Not Present
	1
-Measurement Identity	1 .
-Measurement Command	Modify
-Measurement Reporting Mode	Asknowledged made BLC
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
	Not Present
-Additional measurement list	
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	Not Drocont
- Intra-frequency measurement objects list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	CFIGIT KOCF
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUEFALSE
-Reporting quantities for monitored set cells	FALSE
-Cell synchronisation information reporting	TALGE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TROE
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FDD
-Pathloss reporting indicator	TRUEFALSE
-Reporting quantities for detected set cells	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	Not Present
- 1	
-Maximum number of reported cells	Report all active set cells + cells within
-Measurement validity	monitored set on used frequency
-CHOICE report criteria	Virtual/active set cells + 2
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria
	Infinity
	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.4.1.5 Test requirements

Table 8.7.4.1.3 SFN-CFN observed time difference intra frequency accuracy

		Conditions				
Parameter	Unit	Accuracy [chip]	lo [dBm/3.84 MHz]			
			Band I	Band II	Band III	
SFN-CFN observed time difference	chip	± 1.5	-9450	-9250	-9150	

Table 8.7.4.1.4: SFN-CFN observed time difference Intra frequency test parameters

Par	ameter	Unit	Test 1	Test 2	Test 3	
Fai	ameter	Offic	Cell 1 Cell 2	Cell 1 Cell 2	Cell 1 Cell 2	
UTRA RF Channel number			Channel 1	Channel 1	Channel 1	
CPICH_Ec/lo	r	dB	-10	-10	-10	
PCCPCH_Ec	/lor	dB	-12	-12	-12	
SCH_Ec/lor		dB	-12	-12	-12	
PICH_Ec/lor		dB	-15	-15	-15	
DPCH_Ec/lor		dB	-15	-15	-15	
OCNS_Ec/lor		dB	-1.11	-1.11 -1.11		
Îor/loc		dB	10.8	10.8 10.8		
	Band I				-106.7	
loc	Band II	dBm/ 3.84 MHz	-65.3	-85.7	-104.7	
	Band III				-103.7	
	Band I				-92.7	
Io, Note 1	Band II	dBm/3.84 MHz	-51.3	-71.7	-90.7	
	Band III				-89.7	
SFN-CFN observed time				Х		
difference as specified in TS 25.215 [22]		chip		Note 2		
Propagation of	ondition	-	AWGN	AWGN	AWGN	
NOTE 1: Io I	evel has been cald	culated from other par	ameters for information	on purposes. It is no	t a settable	

NOTE 1: lo level has been calculated from other parameters for information purposes. It is not a settable parameter itself.

NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters "OFF" and "Tm" as specified in TS 25.215 [22].

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The accuracy of the SFN-CFN observed time difference measurement value calculated from the reported "OFF" and "Tm" values shall meet the requirements in table 8.7.4.1.5.

Table 8.7.4.1.5: SFN-CFN observed time difference measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3			
Lowest reported value	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)			
Highest reported value	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)			
SFN-CFN_TIME (X) is the reported value for the actual SFN-CFN observed time difference value as defined in						
table 8.7.4.1.4						

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4.2 Inter frequency measurement requirement

8.7.4.2.1 Definition and applicability

The inter frequency SFN-CFN observed time difference is defined as the SFN-CFN time difference from the active cell to a neighbour cell that is in a different frequency. This measurement is specified in clause 5.1.8 of TS 25.215 [22].

The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.4.2.2 Minimum requirements

The accuracy requirement in table 8.7.4.2.1 is valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114 \text{ dBm for Band I}$.

CPICH_RSCP1,2 $|_{dBm} \ge -112 dBm$ for Band II,

CPICH_RSCP1,2 $|_{dBm} \ge -111$ dBm for Band III.

$$|CPICH _RSCP1|_{in dBm} - CPICH _RSCP2|_{in dBm}| \le 20dB$$

| Channel 1_Io| $_{dBm/3.84~MHz}$ -Channel 2_Io| $_{dBm/3.84~MHz}$ | $\leq 20~dB$.

$$\frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dB} \le 20dB$$

Table 8.7.4.2.1 SFN-CFN observed time difference inter frequency accuracy

		Acquirocy	Conditions Io [dBm/3.84 MHz]					
Parameter	Unit	Accuracy [chip]						
		[cnib]	Band I	Band II Band III				
SFN-CFN observed time difference	chip	± 1	-9450	-9250	-9150			

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.7.2 and A.9.1.4.2.

8.7.4.2.3 Test purpose

The purpose of this test is to verify that the SFN-CFN observed time difference measurement accuracy is within the specified limits in the clause 8.7.4.2.2. This measurement is for handover timing purposes to identify active cell and neighbour cell time difference.

8.7.4.2.4 Method of test

8.7.4.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

In this test case both cells are in different frequency and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256". Table 8.7.4.2.2 defines the limits of signal strengths and code powers, where the requirement is applicable.

Table 8.7.4.2.2: SFN-CFN observed time difference Inter frequency tests parameters

Parameter	Unit	Tes	st 1	Test 2		Test 3	
Farailleter	Offic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel	Channel 2	Channel	Channel 2	Channel	Channel 2
CPICH_Ec/lor	dB	-1	0	-1	0	-1	0
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2
SCH_Ec/lor	dB	-1	2	-1	2	-1	2
PICH_Ec/lor	dB	-1	15	-1	5	-1	5
DPCH_Ec/lor	dB	-15		-15		-15	
OCNS_Ec/lor	dB	-1.11		-1.11		-1.11	
Îor/loc	dB	10.1		10.1		10.1	
loc	dBm/ 3.84 MHz	<i>lo</i> −10.6 dB = <i>loc</i> , Note 1		lo -10.6 dB = loc, Note 1		Note 1	
Band I						-6	94
lo Band II	dBm/3.84 MHz	-50		-72		-92	
Band III)1
S FN-CFN observed time difference as specified in TS	chip	X Note 2					
25.215 [22] Propagation condition	-	AW	'GN		'GN	AWGN	

NOTE 1: *loc* level shall be adjusted in each carrier frequency according the total signal power *lo* at receiver input and the geometry factor *lor/loc*.

NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters "OFF" and "Tm" as specified in TS 25.215 [22].

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.4.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.2.4.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.8 of TS 25.215 [22]. Note that according to TS 25.215 [22] UE is always reporting "OFF" parameter to be zero. This value shall be compared to the actual SFN-CFN observed time difference value for each MEASUREMENT REPORT message taking into account that "OFF" parameter is set to zero.
- 7) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.2.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 5) and 6) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.2.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 5) and 6) above are repeated.
- 8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for inter frequency measurement

Information Element	Value/Remark
Message Type	, 5, 5, 5, 5, 1
<u> </u>	
UE Information Elements -RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	N (B)
-Frequency info	Not Present
Uplink radio resources -Maximum allowed UL TX power	Not Present
	Not Present
- CHOICE channel requirement Downlink radio resources	INOLI IGOGIIL
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	THOU I TOOGHT
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters -TGMP	EDD massurament
-TGPRC	FDD measurement
-TGSN	Infinity 4
-TGL1	7
-TGL1	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	В
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present Not Present
-N Identify abort -T Reconfirm abort	Not Present Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	1.000.11
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
· · · · · · · · · · · · · · · · · · ·	

-PDSCH with SHO DCH Info -PDSCH code mapping -Downlink DPCH info for each RL -CHOICE mode

-Primary CPICH usage for channel estimation

-DPCH frame offset

-Secondary CPICH info -DL channelisation code -Secondary scrambling code

-Spreading factor -Code number

-Scrambling code change -TPC combination index

-SSDT Cell Identity

-Closed loop timing adjustment mode -SCCPCH Information for FACH

Not Present Not Present

FDD

Primary CPICH may be used

Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400

Not Present

Not Present

128 96

No code change

0

Not Present Not Present Not Present

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	- Cottap
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	- choulder reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	mer mequency measurement
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	
-Inter-frequency measurement quantity	Inter-frequency reporting criteria
-CHOICE reporting criteria	and the queries, reperiming entertial
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE FALSE
-Reporting cell status	FALSE
-CHOICE reported cell	
	Report cells within monitored set on non-used
-Maximum number of reported cells	frequency
-Measurement validity	2
-Inter-frequency set update	Not Present
-CHOICE report criteria	Not Present
-Amount of reporting	Periodical reporting criteria
-Reporting interval	Infinity
	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.4.2.5 Test requirements

Table 8.7.4.2.3 SFN-CFN observed time difference inter frequency accuracy

Parameter Unit		_	Conditions		
	Unit	Accuracy [chip]	lo [dBm/3.84 MHz]		
			Band I	Band II	Band III

observed time chip ± 1.5 -9450 -9250 -9150		chip ± 1.5
--------------------------------------------	--	------------

Table 8.7.4.2.4: SFN-CFN observed time difference Inter frequency tests parameters

Doron	notor	Unit	Tes	st 1	Tes	st 2	Tes	st 3
Parameter		Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/lor		dB	-1	0	-1	0	-1	0
PCCPCH_Ec/lo	r	dB	-1	2	-1	2	-1	12
SCH_Ec/lor		dB	-1	2	-1	2	-1	12
PICH_Ec/lor		dB	-1	15	-1	5	-1	15
DPCH_Ec/lor		dB	-1	5	-1	5	-1	15
OCNS_Ec/lor		dB	-1.	.11	-1.	11	-1.11	
Îor/loc		dB	10.4		10.4		10.4	
	Band I				-82.6		103.5	
loc	Band II	dBm/ 3.84 MHz	-62.1	101.5				
	Band III						100.5	
	Band I						-92	2.7
Io, Note 1	Band II	dBm/3.84 MHz	-51.3 -7 ⁻		-71.8 -90		0.7	
	Band III						-89	9.7
SFN-CFN obser	ved time				,	Κ		
difference as specified in TS		chip				te 2		
25.215 [22]							,	
Propagation condition		-		'GN		'GN		'GN
		ulated from other para	ameters fo	r informatio	on purpose	s. It is not	a settable	
	neter itself.	20 or 0920200. This						

NOTE2: For example, x= 491520 or 9830399. This is a calculated value using parameters "OFF" and "Tm" as specified in TS 25.215 [22].

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The accuracy of the SFN-CFN observed time difference measurement value calculated from the reported "OFF" and "Tm" values shall meet the requirements in table 8.7.4.2.5.

Table 8.7.4.2.5: SFN-CFN observed time difference measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3			
Lowest reported value	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)			
Highest reported value	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)			
SFN-CFN_TIME (X) is the reported value for the actual SFN-CFN observed time difference value as defined in						
table 8.7.4.2.4 taking into account that "OFF" parameter is set to zero.						

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.5 SFN-SFN observed time difference

8.7.5.1 SFN-SFN observed time difference type 1

8.7.5.1.1 Definition and applicability

This measurement is specified in clause 5.1.9 of TS 25.215 [22]. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.5.1.2 Minimum requirements

The accuracy requirement in table 8.7.5.1.1 is valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114 dBm$ for Band I.

CPICH_RSCP1,2|_{dBm} ≥ -112 dBm for Band II,

CPICH_RSCP1,2 $|_{dBm} \ge -111$ dBm for Band III.

$$|CPICH _RSCP1|_{in dBm} - CPICH _RSCP2|_{in dBm}| \le 20dB$$

$$\left. \frac{I_o}{\left(\hat{I}_{or}\right)_{lin~dB}} \right|_{in~dB} - \left. \left(\frac{CPICH_E_c}{I_{or}} \right) \right|_{in~dB} \le 20dB$$

$$\frac{I_o}{\left|\hat{I}_{or}\right|_{in\ dB}} - \left(\frac{P - CCPCH _ E_c}{I_{or}}\right)_{in\ dB} \text{ is low enough to ensure successful SFN decoding.}$$

Table 8.7.5.1.1 SFN-SFN observed time difference type 1 measurement accuracy

			Conditions		
Parameter	Unit	Accuracy [chip]			
			Band I	Band II	Band III
SFN-SFN observed time difference type1	chip	± 1	-9450	-9250	-9150

The normative reference for this requirement is TS 25.133 [2] clause 9.1.8.1.1 and A.9.1.5.1.2.

8.7.5.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-SFN observed time difference type 1 is within the limit specified in clause 8.7.5.1.2. This measurement is for identifying time difference between two cells.

8.7.5.1.4 Method of test

8.7.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

- 1) Connect SS to the UE antenna connector as shown in figure A.1
- 2) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.3. The RF parameters for Test 1 are set up according to table 8.7.5.1.2.

In this case all cells are in the same frequency. Table 8.7.5.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table 8.7.5.1.2: SFN-SFN observed time difference type 1 Intra frequency test parameters

Parameter		Unit	Tes	st 1	Tes	st 2	Test 3		
		Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Chai	nnel number		Channel 1		Channel 1		Channel 1		
CPICH_Ec/lor		dB	-1	-10		-10		-10	
PCCPCH_Ec/le	or	dB	-1	2	-12		-1	2	
SCH_Ec/lor		dB	-1	2	-1	-12		2	
PICH_Ec/lor		dB	-1	15	-1	-15		-15	
S-CCPCH_Ec/	lor	dB	-1	-12		-12		-12	
OCNS_Ec/lor	OCNS Ec/lor		-1.29		-1.29		-1.29		
Îor/loc		dB	10.5 10.5		10.5				
loc		dBm/ 3.84 MHz	lo -13.7	lo -13.7 dB = loc,		dB = loc,	lo -13.7 dB = loc,		
100		UDIII/ 3.04 IVITZ	Note 1		Note 1		Note 1		
	Band I						-94		
lo	Band II	dBm/3.84 MHz	-5	-50	-72		-92		
Band III							-6)1	
SFN-SFN observed time					,	,			
difference type 1 as specified		chip				X Note 2			
in TS 25.215 [22					INO				
Propagation co	ndition	-	AW	'GN	AW	GN	AW	GN	

NOTE 1: *loc* level shall be adjusted according the total signal power *lo* at receiver input and the geometry factor *for/loc*.

NOTE2: For example, x= 491520 or 9830399. This is a calculated value using the parameters "OFF" and "Tm" as specified in TS 25.215 [22].

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.5.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT message.
- 3) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual SFN-SFN observed time difference type 1 value for each MEASUREMENT REPORT message.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.
- 5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Editor's note: UE behaviour is not specified for the current MEASUREMENT CONTROL message and therefore it is TBD.

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	- Contained to providing
-Additional measurement list-CHOICE	Not Present
Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	TRUE
-CPICH Ec/N0 reporting indicator	FDD
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUEFALSE
-Reporting quantities for monitored set cells	FALSE
-Cell synchronisation information reporting	
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FDD
-Pathloss reporting indicator	TRUEFALSE
-Reporting quantities for detected set cells	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	Not Present
-Maximum number of reported cells	Report all active set cells + cells within
-Measurement validity	monitored set on used frequency
-CHOICE report criteria	Virtual/active set cells + 2
-Amount of reporting	Not Present
-Reporting interval	Periodical reporting criteria
	Infinity
	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.5.1.5 Test requirements

Table 8.7.5.1.3 SFN-SFN observed time difference type 1 measurement accuracy

Parameter	Unit Accuracy [chip]		Conditions Io [dBm/3.84 MHz]		
		, , , , ,	Band I	Band II	Band III
SFN-SFN observed time difference type1	chip	± 1.5	-9450	-9250	-9150

Table 8.7.5.1.4: SFN-SFN observed time difference type 1 Intra frequency test parameters

Parameter		Unit	Test 1	Test 2	Test 3	
Faraii	letei	Unit	Cell 1 Cell 2	Cell 1 Cell 2	Cell 1 Cell 2	
UTRA RF Channel number			Channel 1 Channel 1		Channel 1	
CPICH_Ec/lor		dB	-10	-10	-10	
PCCPCH_Ec/lor		dB	-12	-12	-12	
SCH_Ec/lor		dB	-12	-12	-12	
PICH_Ec/lor		dB	-15	-15	-15	
S-CCPCH_Ec/lo	r	dB	-12	-12	-12	
OCNS_Ec/lor		dB	-1.29	-1.29	-1.29	
Îor/loc		dB	10.8	10.8	10.8	
	Band I				-106.7	
loc	Band II	dBm/ 3.84 MHz	-65.3 dB	-85.7	-104.7	
	Band III				-103.7	
	Band I				-92.7	
Io, Note 1	Band II	dBm/3.84 MHz	-51.3	-71.7	-90.7	
	Band III				-89.7	
SFN-SFN observed time				V		
difference type 1 as specified in TS 25.215 [22]		chip	x Note 2			
Propagation con-	dition	-	AWGN	AWGN	AWGN	
NOTE 1: To leve	el has been calc	ulated from other par	ameters for information	on purposes. It is no	t a settable	

NOTE 1: lo level has been calculated from other parameters for information purposes. It is not a settable parameter itself.

NOTE2: For example, x= 491520 or 9830399. This is a calculated value using the parameters "OFF" and "Tm" as specified in TS 25.215 [22].

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for SFN-SFN observed time difference type 1 accuracy shall meet the requirements in table 8.7.5.1.5.

Table 8.7.5.1.5: SFN-SFN observed time difference type 1 measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3				
Lowest reported value	T1_SFN-SFN_TIME_(X -	T1_SFN-SFN_TIME_(X -	T1_SFN-SFN_TIME_(X -				
	2)	2)	2)				
Highest reported value	T1_SFN-SFN_TIME_(X +	T1_SFN-SFN_TIME_(X +	T1_SFN-SFN_TIME_(X +				
	2)	2)	2)				
T1_SFN-SFN_TIME_(X) is the reporting value corresponding to SFN-SFN observed time difference type 1							
measured by system sin	nulator	-	·				

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #24 Toronto, Canada, 26th - 30th July 2004

Tdoc **x** T1-041307

	CHANGE REQUEST	CR-Form-v7
*	34.121 CR 405 # rev - # 0	Current version: 5.4.0
For <mark>HELP</mark> on u	using this form, see bottom of this page or look at the	pop-up text over the 光 symbols.
Proposed change	affects: UICC apps第 ME X Radio Acc	cess Network Core Network
Title: #	Correction to test uncertanty definition of Inner Loc case	pp Power Control in the Uplink test
Source: #	NEC, Agilent	
Work item code: ₩	TEI	Date: ₩ 14/07/2004
G ,	Use one of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900. e: The usage of test tolerance 0.1 dB for TPC_c	R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)
Summary of chang	to be clarified in clause Annex F.1. ge: Correction of test tolerances for Inner Loop Por	wer Control in the Uplink test case:_
	Clarified and updated test system uncertainty remodified definition covers requirements for TPG as well. Clarified test tolerances in Table F.2.1. Editorial change in Table F.4.1. Clarified acceptable test equipment uncertainty	C_cmd group 0 in Table 5.4.2.5.2
Consequences if not approved:	# Ambiguity in the test requirement specification implementation	could lead to false test case
Clauses affected:	策 F.1, F.2, F.4, F5	
Other specs affected:	Y N X Other core specifications X Test specifications O&M Specifications	
Other comments:	第 This CR is applicable for UE's supporting Rel-	-99 or later.

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- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

F.1.2 Measurement of transmitter

Table F.1.2: Maximum Test System Uncertainty for transmitter tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.2 Maximum Output Power	±0,7 dB	
5.3 Frequency Error	±10 Hz	
5.4.1 Open loop power control in uplink	±1,0 dB	The uncertainty of this test is a combination of the downlink level setting error and the uplink power measurement that are uncorrelated.
		Formula = SQRT(source_level_error ² + power_meas_error ²)
5.4.2 Inner loop power control in the uplink - One step	±0,1 dB relative over a 1,5 dB range (1 dB- and 0 dB step) ±0,15 dB relative over a 3,0 dB range (2 dB step) ±0,2 dB relative over a 4.5 dB range (3 dB-	This accuracy is based on the linearity of the absolute power measurement of the test equipment.
5.4.2 Inner loop power control in the	step) ±0,3 dB relative over a 26 dB range	
uplink – seven and ten steps	±0,0 ub relative over a 20 ub range	
5.4.2 Inner loop power control in the uplink	The test system uncertainty is the function of the UE transmitter power control range for each combination of the step size and number of steps.	This accuracy is based on the linearity of the absolute power measurement of the test equipment.
	For 0 dB and 1 dB range ±0,1 dB For a nominal 2 dB range ±0,15 dB For a nominal 3 dB range ±0,2 dB For a greater than 3 dB range ±0,3 dB	
5.4.3 Minimum Output Power	±1,0 dB	Measured on a static signal
5.4.4 Out-of-synchronisation handling of output power: $\underline{DPCCH_E_c}$	±0,4 dB	0.1 dB uncertainty in DPCCH ratio
I_{or}		0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter
		measurement after the combiner
		Overall error is the sum of the \hat{I}_{or}/I_{oc} ratio error and the
		DPCCH_Ec/lor ratio. The absolute error of the AWGN loc is not important but is specified as 1.0 dB
5.5.1 Transmit OFF Power: (static case)	±1,0 dB	Measured on a static signal
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0,7 dB – 1,0 dB Off power (dynamic case) TBD	Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit (assume UE won't go above 24 nominal). For the off power, the accuracy of a two-pass measurement needs to be analysed.
5.6 Change of TFC: power control step size (7 dB step)	±0,3 dB relative over a 9 dB range	
5.7 Power setting in uplink compressed mode:-UE output power	Will be a subset of 5.4.2.	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.8 Occupied Bandwidth	±100 kHz	Accuracy = ±3*RBW. Assume 30 kHz bandwidth.
5.9 Spectrum emission mask	±1,5 dB	
5.10 ACLR	5 MHz offset: ± 0,8 dB	
	10 MHz offset: ± 0,8 dB	
5.11 Spurious emissions	$\pm2,\!0$ dB for UE and coexistence bands for results > -60 dBm	
	± 3,0 dB for results < -60 dBm	
	Outside above: f≤2.2GHz: ± 1.5 dB 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB f > 4 GHz: ±4.0 dB	
5.12 Transmit Intermodulation	± 2.2 dB	CW Interferer error is 0.7 dB for the UE power RSS with 0.7 dB for CW setting = 1.0 dB Measurement error of intermod product is 0.7 dB for UE power RSS with 0.7 dB for relative = 1.0 dB Interferer has an effect of 2 times on the intermod product so overall test uncertainty is 2*1.0 RSS with 1.0 = 2.2 dB. Apply half any excess test system uncertainty to increase the interferer level
5.13.1 Transmit modulation: EVM	±2.5 %	
540 O.T. 11 11 11 11 11 11 11 11 11 11 11 11 11	(for single code)	
5.13.2 Transmit modulation: peak code domain error	±1.0dB	
5.13.4 PRACH quality (EVM)	±2.5 %	
5.13.4 PRACH quality (Frequency error)	±10 Hz	

{Unchanged Sections are skipped here}

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.1 Transmitter

Table F.2.1: Test Tolerances for transmitter tests.

Clause	Test Tolerance
5.2 Maximum Output Power	0.7 dB
5.3 Frequency error	10 Hz
5.4.1 Open loop power control in uplink	1.0 dB
5.4.2 Inner loop power control in the	0.1 dB (1 dB and 0 dB rangestep)
uplink - One step	0.15 dB (2 dB rangestep)
	0.2 dB (3 dB <u>range</u>
	0.3 dB (> 3 dB range)step)
5.4.2 Inner loop power control in the	0.3 dB
uplink - seven and ten steps	
5.4.3 Minimum Output Power	1.0 dB
5.4.4 Out-of-synchronisation handling of	0.4 dB
output power: $\underline{DPCCH _E_c}$	
I_{or}	
5.4.4 Out-of-synchronisation handling of	0 ms
output power: transmit ON/OFF time	- · · · · ·
5.5.1 Transmit OFF power	1.0 dB
5.5.2 Transmit ON/OFF time mask	On power +0.7 dB / -1.0 dB
(dynamic case)	·
	Off power TT [] dB
5.6 Change of TFC: power control step	0.3 dB
size	
5.7 Power setting in uplink compressed	See subset of 5.4.2
mode:-UE output power	
5.8 Occupied Bandwidth	0 kHz
5.9 Spectrum emission mask	1.5 dB (0 dB for additional requirements for Band II)
5.10 ACLR	0.8 dB for ratio
	0.0 dB for absolute power
5.11 Spurious emissions	0 dB
5.12 Transmit Intermodulation	0 dB
5.13.1 Transmit modulation: EVM	0%
5.13.2 Transmit modulation: peak code	1.0 dB
domain error	
5.13.4 PRACH preamble quality (EVM)	0%
5.13.4 PRACH preamble quality	10 Hz
(Frequency error)	

{Unchanged Sections are skipped here}

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

Table F.4.1: Derivation of Test Requirements (Transmitter tests)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = +1/-3 dB Power class 2 (27 dBm) Tolerance = +1/-3 dB Power class 3 (24 dBm) Tolerance = +1/-3 dB Power class 4 (21 dBm) Tolerance = ±2 dB	0.7 dB	Formula: Upper Tolerance limit + TT
5.3 Frequency Error	The UE modulated carrier frequency shall be accurate to within ±0.1 ppm compared to the carrier frequency received from the Node B.	10 Hz	Formula: modulated carrier frequency error + TT modulated carrier frequency error = ±(0.1 ppm + 10 Hz).
5.4.1 Open loop power control in the uplink	Open loop power control tolerance ±9 dB (Normal) Open loop power control tolerance ±12 dB (Normal)	1.0 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit - TT For Normal conditions: Upper Tolerance limit = +10 dB Lower Tolerance limit = -10 dB For Extreme conditions: Upper Tolerance limit = +13 dB Lower Tolerance limit = -13 dB
5.4.2 Inner loop power control in uplink	See table 5.4.2.1 and 5 <u>.</u> ,4 <u>.</u> ,2 <u>.</u> ,2	0.1dB 0.15 dB 0.2 dB 0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT
5.4.3 Minimum Output Power	UE minimum transmit power shall be less than –50 dBm	1.0 dB	Formula: UE minimum transmit power + TT UE minimum transmit power = -49 dBm

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.4.4 Out-of-synchronisation handling of output power:	$\frac{DPCCH_E_c}{I_{or}} \text{ levels}$ $AB: -22 \text{ dB}$ $BD: -28 \text{ dB}$ $DE: -24 \text{ dB}$ $EF: -18 \text{ dB}$ $transmit ON/OFF time$ 200 ms $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $I_{oc} - 60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.4 dB for	Formulas: Ratio between A and B + TT Ratio between B and D – TT Ratio between D and E – TT Ratio between E and F + TT transmit ON/OFF time + TT timing $\frac{DPDCH_{-}E_{c}}{I_{or}} = -16.6 \text{ dB}$ $\frac{DPCCH_{-}E_{c}}{I_{or}} = -1 \text{ dB}$ $\frac{DPCCH_{-}E_{c}}{I_{or}} \text{ levels:}$ AB: -21.6 dB BD: -28.4 dB DE: -24.4 dB EF: -17.6 dB transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = -55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = []dBm
5.6 Change of TFC: power control step size	TFC step size = +5 to +9 dB	0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT Upper limit = -4.7 dB Lower limit = -9.3 dB
5.7 Power setting in uplink compressed mode	Various	TBD (Subset of 5.4.2)	TBD

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
5.8 Occupied Bandwidth	The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps.		0 kHz	Formula: occupied channel bandwidth: + TT occupied channel bandwidth = 5.0 MHz	
5.9 Spectrum emission mask	Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher.		1.5 dB	Formula: Minimum requirement + TT Lower limit + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Zero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be –48.5 dBm / 3.84 MHz or which ever is higher.	
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	If the adjacent chan greater than –50 dB ACLR shall be highe values specified bel	m then the er than the	0.0 dB	Formula: Absolute power the	
	Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB		0.8 dB	Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB	
5.11 Spurious Emissions				Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.	
	Frequency Band	Minimum Requireme nt		Frequency Band	Minimum Requirement
	9 kHz ≤ f < 150 kHz	-36dBm /1kHz	0 dB	9kHz ≤ f < 1GHz	–36dBm /1kHz
	150 kHz ≤ f < 30 MHz	–36dBm /10kHz	0 dB	150 kHz ≤ f < 30 MHz	–36dBm /10kHz
	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz	0 dB	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz
	1 GHz ≤ f < 12.75 GHz	-30dBm /1MHz	0 dB	1 GHz ≤ f < 2.2 GHz	-30dBm /1MHz
			0 dB	2.2 GHz ≤ f < 4 GHz	-30dBm /1MHz
			0 dB	4 GHz ≤ f < 12.75 GHz	-30dBm /1MHz
	1893.5 MHz < f < 1919.6 MHz	-41dBm /300kHz	0 dB	1893.5 MHz < f < 1919.6 MHz	-41dBm /300kHz
	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz	0 dB 0 dB	925 MHz ≤ f ≤ 935 MHz	-67dBm /100kHz
	935 MHz < f ≤ 960 MHz	–79dBm /100kHz		935 MHz < f ≤ 960 MHz	-79dBm /100kHz
	1805 MHz ≤ f ≤ 1880 MHz	–71dBm /100kHz	0 dB	1805 MHz ≤ f ≤ 1880 MHz	–71dBm /100kHz
5.12 Transmit Intermodulation	Intermodulation Product 5MHz -31 dBc 10MHz -41 dBc CW Interferer level = -40 dBc		0 dB	Formula: CW interferer level – TT/2 Intermod Products limits remain unchanged.	
5.13.1 Transmit The measured EVM shall r		shall not	0%	CW interferer level = -40 dl Formula: EVM limit + TT EVM limit = 17.5 %	<u> </u>
modulation: EVM exceed 17.5%. 5.13.2 Transmit The measured Peak code domain error shall not exceed -15 dB.		1.0 dB	Formula: Peak code domain error + TT Peak code domain error = -14 dB		

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.13.4 PRACH preamble quality (EVM)	The measured EVM shall not exceed 17.5%.	0%	Formula: EVM limit + TT EVM limit = 17.5 %
5.13.4 PRACH preamble quality (Frequency error)	The UE modulated carrier frequency shall be accurate to within 0.1 ppm compared to the carrier frequency received from the Node B.	10 Hz	Formula: modulated carrier frequency error + TT modulated carrier frequency error = (0.1 ppm + 10 Hz).

{Unchanged Sections are skipped here}

F.5 Acceptable uncertainty of Test Equipment (This clause is informative)

This informative clause specifies the critical parameters of the components of an overall Test System (e.g. Signal generators, Signal Analysers etc.) which are necessary when assembling a Test System that complies with clause F.1 Acceptable Uncertainty of Test System. These Test Equipment parameters are fundamental to the accuracy of the overall Test System and are unlikely to be improved upon through System Calibration.

F.5.1 Transmitter measurements

Table F.5.1: Equipment accuracy for transmitter measurements

Test	Equipment accuracy	Test conditions
5.2 Maximum Output Power	Not critical	19 to 25 dBm
5.3 Frequency error	± 10 Hz	0 to 500 Hz.
5.4.1 Open loop power control in uplink	Not critical	-43.7 dBm to 25 dBm
5.4.2 Inner loop power control in the uplink—single step	±0.1 dB relative over a 1.5 dB range ±0.15 dB relative over a 3.0 range ±0.2 dB relative over a 4.5 dB range ±0.3 dB relative over a 26 dB range	+25 dBm to <u>-50 dBm</u> -50 dBm
5.4.2 Inner loop power control in the uplink – seven and ten steps	±0.3 dB relative over a 26 dB range	+25 dBm to -50 dBm
5.4.3 Minimum Output Power 5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH_E_c}{I_{or}}$	Not critical ±0.1 dB uncertainty in DPCCH_Ec/lor ratio	Ratio from –16.6 dB to –28 dB
5.5.1 Transmit ON/OFF Power: UE transmit OFF power	Not critical	-56 dBm (static power)
5.5.2 Transmit ON/OFF Power: transmit ON/OFF time mask	TBD	-56 dBm (dynamic power over approx. 70 dB range)
5.6 Change of TFC: power control step size	±0.3 dB relative over a 9 dB range	+25 dBm to -50 dBm
5.7 Power setting in uplink compressed mode:-UE output power	Subset of 5.4.2	+25 dBm to -50 dBm
5.8 Occupied Bandwidth	±100 kHz	For results between 4 and 6 MHz?
5.9 Spectrum emission mask	Not critical	P_Max Accuracy applies ± 5 dB either side of UE requirements
5.10 ACLR	5 MHz offset \pm 0.8 dB 10 MHz offset \pm 0.8 dB	19 to 25 dBm at 5 MHz offset for results between 40 dB and 50 dB. 25 dBm at 10 MHz offset for results between 45 dB and 55
5440	N	dB.
5.11 Spurious emissions	Not critical	19 to 25 dBm
5.12 Transmit Intermodulation 5.13.1 Transmit modulation: EVM	Not critical ±2.5 % (for single code)	19 to 25 dBm 25 dBm to –21 dBm
5.13.2 Transmit modulation: peak code domain error	±1.0dB	For readings between -10 dB to -20 dB.
5.13.4 PRACH preamble quality (EVM)	2.5 %	25 dBm to -21 dBm
5.13.4 PRACH preamble quality (Frequency error)	± 10 Hz	0 to 500 Hz.

CHANGE REQUEST					CR-Form-v7			
×	34.1	21 CR	406	жrev	- #	Current vers	5.4.0	¥
For <mark>HELP</mark> on u	using this	s form, se	e bottom of t	his page or	look at th	e pop-up text	over the	mbols.
Proposed change	affects:	UICC :	apps#	MEX	Radio A	ccess Networ	k Core N	etwork
Title:	R Additio	n of the in	tegrity protec	ction in 5.7 F	Power se	tting in uplink	compressed r	mode
Source: #	& Anritsu							
Work item code: ₩	g					Date: ♯	27/07/2004	
Category:	F A B C D	(correction) (correspor (addition o (functional (editorial n d explanation	ds to a correc	tion in an ear		2 e) R96 R97 R98 R99	Rel-5 the following re (GSM Phase 2, (Release 1996, (Release 1997, (Release 1999, (Release 4) (Release 5) (Release 6))))
Reason for change	e: Ж <mark>Т</mark>	ne function	n of integrity	protection is	missing.			
Summary of chang								
Consequences if not approved:	# 16 	est will not	t be performe	ea properly.				
Clauses affected:	₩ 5.	7						
Other specs affected:	¥	X Test X O&M	er core specif specification 1 Specificatio	is ins	¥			
Other comments:	₩Ţ	his CR a	oplies for Rel	-99 and late	r release	S.		

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.7 Power setting in uplink compressed mode

5.7.1 Definition and applicability

Compressed mode in uplink means that the power in uplink is changed.

The requirements and this test apply to all types of UTRA for the FDD UE.

5.7.2 Minimum requirements

A change of output power is required during uplink compressed frames since the transmission of data is performed in a shorter interval. The ratio of the amplitude between the DPDCH codes and the DPCCH code will also vary. The power step due to compressed mode shall be calculated in the UE so that the energy transmitted on the pilot bits during each transmitted slot shall follow the inner loop power control.

Thereby, the power during compressed mode, and immediately afterwards, shall be such that the mean power of the DPCCH follows the steps due to inner loop power control combined with additional steps of $10\text{Log}_{10}(N_{pilot.prev} / N_{pilot.curr})$ dB where $N_{pilot.prev}$ is the number of pilot bits in the previously transmitted slot, and $N_{pilot.curr}$ is the current number of pilot bits per slot.

The resulting step in total transmitted power (DPCCH +DPDCH) shall then be rounded to the closest integer dB value. A power step exactly half-way between two integer values shall be rounded to the closest integer of greatest magnitude. The accuracy of the power step, given the step size, is specified in table 5.6.1 in clause 5.6.2. The power step is defined as the relative power difference between the mean power of the original (reference) timeslot and the mean power of the target timeslot, when neither the original timeslot nor the reference timeslot are in a transmission gap. The transient duration is not included, and is from $25 \,\mu s$ before the slot boundary to $25 \,\mu s$ after the slot boundary.

In addition to any power change due to the ratio $N_{pilot,prev}$ / $N_{pilot,curr}$, the mean power of the DPCCH in the first slot after a compressed mode transmission gap shall differ from the mean power of the DPCCH in the last slot before the transmission gap by an amount Δ_{RESUME} , where Δ_{RESUME} is calculated as described in clause 5.1.2.3 of TS 25.214 [5].

The resulting difference in the total transmitted power (DPCCH + DPDCH) shall then be rounded to the closest integer dB value. A power difference exactly half-way between two integer values shall be rounded to the closest integer of greatest magnitude. The accuracy of the resulting difference in the total transmitted power (DPCCH + DPDCH) after a transmission gap of up to 14 slots shall be as specified in table 5.7.1.

Table 5.7.1: Transmitter power difference tolerance after a transmission gap of up to 14 slots

Power difference (Up or down) ΔP [dB]	Transmitter power step tolerance after a transmission gap [dB]
$\Delta P \le 2$	+/- 3
3	+/- 3
$4 \le \Delta P \le 10$	+/- 3.5
$11 \le \Delta P \le 15$	+/- 4
$16 \le \Delta P \le 20$	+/- 4.5
21 ≤ ΔP	+/- 6.5

The power difference is defined as the difference between the mean power of the original (reference) timeslot before the transmission gap and the mean power of the target timeslot after the transmission gap, not including the transient durations. The transient durations at the start and end of the transmission gaps are each from 25 μ s before the slot boundary to 25 μ s after the slot boundary.

The transmit power levels versus time shall meet the mask specified in figure 5.7.1.

The reference for this requirement is TS 25.101 [1] clause 6.5.4.1.

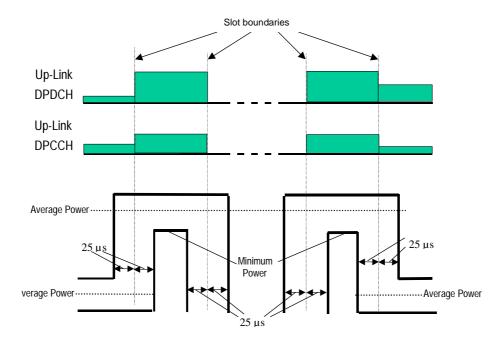


Figure 5.7.1: Transmit template during Compressed mode

For RPL (Recovery Period Length) slots after the transmission gap, where RPL is the minimum out of the transmission gap length and 7 slots, the UE shall use the power control algorithm and step size specified by the signalled Recovery Period Power Control Mode (RPP), as detailed in TS 25.214 [5] clause 5.1.2.3.

When nominal 3 dB power control steps are used in the recovery period, the transmitter mean power steps due to inner loop power control shall be within the range shown in table 5.7.2, and the transmitter aggregate mean power step due to inner loop power control shall be within the range shown in table 5.7.3, excluding any other power changes due, for example, to changes in spreading factor or number of pilot bits.

Table 5.7.2: Transmitter power control range for 3dB step size

TPC_cmd	Transmitter power control range for 3dB step size		
	Lower	Upper	
+1	+1,5 dB	+4,5 dB	
0	−0,5 dB	+0,5 dB	
	−1,5 dB	−4,5 dB	

Table 5.7.3: Transmitter aggregate power control range for 3dB step size

TPC_cmd group	Transmitter power control range after 7 equal TPC_cmd groups	
	Lower	Upper
+1	+16 dB	+26 dB
0	−1 dB	+1 dB
-1	−16 dB	−26 dB

The reference for this requirement is TS 25.101 [1] clause 6.4.2.1.1.

5.7.3 Test purpose

To verify that the changes in uplink transmit power in compressed mode are within the prescribed tolerances.

Excess error in transmit power setting in compressed mode increases the interference to other channels, or increases transmission errors in the uplink.

5.7.4 Method of test

5.7.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect the SS to the UE antenna connector as shown in figure A.1.
- 2) A call is set up according to the Generic call setup procedure. The 12,2 kbps UL reference measurement channel is used, with gain factors $\beta_c = 0.5333$ and $\beta_d = 1.0$ in non-compressed frames. Slot formats 0 and 0B are used on the uplink DPCCH.
- 3) Enter the UE into loopback test mode and start the loopback test.

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

5.7.4.2 Procedure

NOTE: CFNs are given in this procedure for reference as examples only. A fixed offset may be applied to the CFNs.

- 1) Before proceeding with step (3) below, set the output power of the UE, measured at the UE antenna connector, to be in the range -36 ± 9 dBm. This may be achieved by setting the downlink signal (Îor) to yield an appropriate open loop output power and/or by generating suitable downlink TPC commands from the SS.
- 2) Transmit the PHYSICAL CHANNEL RECONFIGURATION message to set the uplink power control parameters to use Algorithm 1 and a step size of 2 dB, and to set the compressed mode parameters shown in table 5.7.5. The contents of the message are specified in table 5.7.9. This set of compressed mode parameters defines the compressed mode pattern which is used to test the implementation of:
 - a) in steps (3) and (4), upward 3 dB output power steps and the implementation of a downward power change when resuming transmission after a compressed mode gap, and
 - b) in steps (7) and (8), downward 3dB output power steps and the implementation of an upward power change when resuming transmission after a compressed mode gap.

Table 5.7.5: Parameters for pattern A for compressed mode test

Parameter	Meaning	Value
TGPRC	Number of transmission gap patterns within the Transmission Gap Pattern Sequence	1
TGCFN	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence	0
TGSN	Slot number of the first transmission gap slot within the TGCFN	2
TGL1	Length of first transmission gap within the transmission gap pattern	7 slots
TGL2	Length of second transmission gap within the transmission gap pattern	7 slots
TGD	Duration between the starting slots of two consecutive transmission gaps within a transmission gap pattern	15 slots
TGPL1	Duration of transmission gap pattern 1	3 frames
TGPL2	Duration of transmission gap pattern 2	Omit
RPP	Recovery Period Power Control Mode	Mode 1
ITP	Initial Transmit Power Mode	Mode 1
UL/DL Mode	Defines whether only DL, only UL, or combined UL/DL compressed mode is used	UL/DL
Downlink Compressed Mode Method	Method for generating downlink compressed mode gap	SF/2
Uplink Compressed Mode Method	Method for generating uplink compressed mode gap	SF/2
Scrambling code change	Indicates whether the alternative scrambling code is used	No code change
Downlink frame type	Downlink compressed frame structure	Α
DeltaSIR	Delta in DL SIR target value to be set in the UE during compressed frames	0
DeltaSIRafter	Delta in DL SIR target value to be set in the UE one frame after the compressed frames	0

The resulting compressed mode pattern is shown in figure 5.7.2.

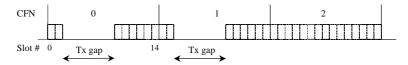


Figure 5.7.2: Pattern A for compressed mode test

3) After the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE is received, transmit TPC commands on the downlink as shown in table 5.7.6.

Table 5.7.6: TPC commands transmitted in downlink

CFN	TPC commands in downlink
0	01111111
1	11101010
2	1010101010101

4) Measure the mean power in the following slots, not including the 25 µs transient periods at the start and end of each slot:

CFN 0: Slots # 9,10,11,12,13,14

CFN 1: Slots # 0,1,9

5) Re-start the test. Before proceeding with step (7) below, set the output power of the UE, measured at the UE antenna connector, to be in the range 2 ± 9 dBm. This may be achieved by setting the downlink signal (Îor) to

yield an appropriate open loop output power and/or by generating suitable downlink TPC commands from the SS.

- 6) Repeat step (2) above, with the exception that TGCFN = 3 in table 5.7.5 and table 5.7.9.
- 7) After the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE is received, transmit TPC commands on the downlink as shown in table 5.7.7.

Table 5.7.7: TPC commands transmitted in downlink

CFN	TPC commands in downlink
3	01000000
4	00010101
5	0101010101010

8) Measure the mean power in the following slots, not including the 25 µs transient periods at the start and end of each slot:

CFN 3: Slots # 9,10,11,12,13,14

CFN 4: Slots # 0,1,9

- 9) Re-start the test. Before proceeding with step (11) below, set the output power of the UE, measured at the UE antenna connector, to be in the range -10 ± 9 dBm. This may be achieved by setting the downlink signal (Îor) to yield an appropriate open loop output power and/or by generating suitable downlink TPC commands from the SS.
- 10) Transmit the PHYSICAL CHANNEL RECONFIGURATION message to set the uplink power control parameters to use Algorithm 1 and a step size of 1 dB, and to set the compressed mode parameters shown in table 5.7.8. The contents of the message are specified in table 5.7.10. This set of compressed mode parameters defines the compressed mode pattern which is used to test the implementation of power steps at the start and end of compressed frames, and the implementation of a zero power change when resuming transmission after a compressed mode gap.

Table 5.7.8: Parameters for pattern B for compressed mode test

Parameter	Meaning	Value
TGPRC	Number of transmission gap patterns within the Transmission Gap Pattern Sequence	1
TGCFN	Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence	7
TGSN	Slot number of the first transmission gap slot within the TGCFN	8
TGL1	Length of first transmission gap within the transmission gap pattern	14 slots
TGL2	Length of second transmission gap within the transmission gap pattern	omit
TGD	Duration between the starting slots of two consecutive transmission gaps within a transmission gap pattern	UNDEFINED
TGPL1	Duration of transmission gap pattern 1	4 frames
TGPL2	Duration of transmission gap pattern 2	Omit
RPP	Recovery Period Power Control Mode	Mode 0
ITP	Initial Transmit Power Mode	Mode 0
UL/DL Mode	Defines whether only DL, only UL, or combined UL/DL compressed mode is used	UL/DL
Downlink Compressed Mode Method	Method for generating downlink compressed mode gap	SF/2
Uplink Compressed Mode Method	Method for generating uplink compressed mode gap	SF/2
Scrambling code change	Indicates whether the alternative scrambling code is used	No code change
Downlink frame type	Downlink compressed frame structure	Α
DeltaSIR	Delta in DL SIR target value to be set in the UE during compressed frames	0
DeltaSIRafter	Delta in DL SIR target value to be set in the UE one frame after the compressed frames	0

The resulting compressed mode pattern is shown in figure 5.7.3.

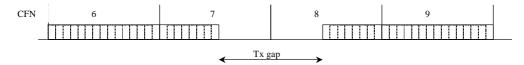


Figure 5.7.3: Pattern B for compressed mode test

11) After the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE is received, transmit TPC commands on the downlink as shown in table 5.7.8.

Table 5.7.8: TPC commands transmitted in downlink

CFN	TPC commands in downlink
6	0000000000111
7	11111111
8	00000000
9	00011111111111

12) Measure the mean power in the following slots, not including the 25 μ s transient periods at the start and end of each slot:

CFN 6: Slot # 14 CFN 7: Slots # 0 and 7

CFN 8: Slots # 7 and 14

CFN 9: Slot # 0

Table 5.7.9: PHYSICAL CHANNEL RECONFIGURATION message (step 2)

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
- message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
- RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
	Not Present
-New U-RNTI	Not Present
-New C-RNTI	CELL_DCH
-RRC State Indicator	Not Present
-UTRAN DRX cycle length coefficient	
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	N . B
-Maximum allowed UL TX power	Not Present
-CHOICE channel requirement	Uplink DPCH info
-Uplink DPCH power control info	FDD
-CHOICE mode -DPCCH Power offset	-6dB
-PC Preamble	1 frame
-SRB delay	7 frames
-Power Control Algorithm	Algorithm 1
-TPC step size	2dB
-CHOICE mode	FDD
-Scrambling code type	Long
-Scrambling code number	0
-Number of DPDCH	1
-spreading factor	64
-TFCI existence	TRUE
-Number of FBI bits	Not Present(0)
-Puncturing Limit	1
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	N / P
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence -TGPSI	1
-TGPSI -TGPS Status Flag	Activate
-TGCFN	0
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	1
-TGSN	2
-TGL1	7
-TGL2	7
-TGD	15
-TGPL1	3
-IGPL1	3

-TGPL2	Not Present
-RPP	Mode 1
-RFF -ITP	Mode 1 Mode 1
	1
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	A
-DeltaSIR1	0
-DeltaSIRafter1	0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
- Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as
	currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present
	<u>.</u>

Table 5.7.10: PHYSICAL CHANNEL RECONFIGURATION message (step 10)

Information Element	Value/Remark
Message Type	T GISGITOITIGIT
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
- message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
PPC managa agguanga numbar	significant bit of the MAC-I. SS provides the value of this IE, from its
- RRC message sequence number	internal counter.
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	CELL DCH
-RRC State Indicator	Not Present
-UTRAN DRX cycle length coefficient	
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
-CHOICE channel requirement	Uplink DPCH info
-Uplink DPCH power control info	
-CHOICE mode	FDD
-DPCCH Power offset	-6dB
-PC Preamble	1 frame
-SRB delay	7 frames
-Power Control Algorithm	Algorithm 1
-TPC step size	1dB FDD
-CHOICE mode -Scrambling code type	Long
-Scrambling code type -Scrambling code number	0
-Number of DPDCH	1
-spreading factor	64
-TFCI existence	TRUE
-Number of FBI bits	Not Present(0)
-Puncturing Limit	1
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	7
-Transmission gap pattern sequence	
configuration parameters	EDD
-TGMP	FDD measurement
-TGPRC	1
-TGSN	8
-TGL1	14 Not Present
-TGL2	
-TGD -TGPL1	0 4
-IGI'LI	"

-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	A
-DeltaSIR1	
-DeltaSIRafter1	0
-DeltaSIRatier i -DeltaSIR2	Not Present
	Not Present
-DeltaSIRafter2	
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
- Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as
	currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

5.7.5 Test requirements

For ease of reference, the following uplink output power measurements are defined in figure 5.7.4. In this figure:

- P_g is the RRC filtered mean power in an uplink transmission gap, excluding the 25 μs transient periods.
- P_a is the mean power in the last slot before a compressed frame (or pair of compressed frames), excluding the 25 μs transient periods.
- P_b is the mean power in the first slot of a compressed frame, excluding the 25 μs transient periods.
- P_c is the mean power in the last slot before a transmission gap, excluding the 25 μ s transient periods.
- P_d is the mean power in the first slot after a transmission gap, excluding the 25 μ s transient periods.
- P_e is the mean power in the last slot of a compressed frame, excluding the 25 μ s transient periods.
- P_f is the mean power in the first slot after a compressed frame (or pair of compressed frames), excluding the 25 μ s transient periods.

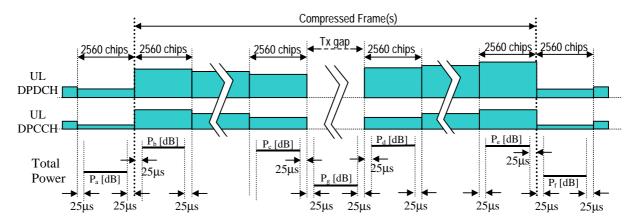


Figure 5.7.4: Uplink transmit power in uplink compressed mode

- 1. At the boundary between CFN 6 and CFN 7, $P_b P_a$ shall be within the range $+4 \pm 2$ dB.
- 2. In slot #9 of CFN 1, the power difference $P_d P_c$ from the power in slot #1 of CFN 1 shall be within the range -11 \pm 4 dB.
- 3. In slot #9 of CFN 4, the power difference $P_d P_c$ from the power in slot #1 of CFN 4 shall be within the range $+11 \pm 4$ dB.
- 4. In slot #7 of CFN 8, the power difference P_d P_c from the power in slot #7 of CFN 7 shall be within the range 0 ± 3 dB.
- 5. (void)
- 6. At the boundary between CFN 8 and CFN 9, $P_f P_e$ shall be within the range -4 \pm 2 dB.
- 7. In the slots between slot #10 of CFN 0 and slot #1 of CFN 1 inclusive, the change in mean power from the previous slot shall be within the range given in table 5.7.2 for TPC_cmd = +1.
- 8. The aggregate change in mean power from slot #9 of CFN 0 to slot #1 of CFN 1 shall be within the range given in table 5.7.3 for TPC_cmd = +1.
- 9. In the slots between slot #10 of CFN 3 and slot #1 of CFN 4 inclusive, the change in mean power from the previous slot shall be within the range given in table 5.7.2 for TPC_cmd = -1.
- 10. The aggregate change in mean power from slot #9 of CFN 3 to slot #1 of CFN 4 shall be within the range given in table 5.7.3 for TPC_cmd = -1.

3GPP TSG-T1 Meeting T1 #24 Toronto, Canada, 26th – 30th July 2004

										CR-Form-v7
CHANGE REQUEST										
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For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the \mathbb{H} symbols.										
Proposed change affects: UICC apps# ME X Radio Access Network Core Network										
Title:	Ж	Correction	s to De	emodulation	n of DCH in Ir	nter-C	Cell S	Soft Handover		
Source:	\mathbb{H}	Siemens	AG							
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Category: **B** Use one of the following categories:										
Reason for cha	ange.	: 第 <mark>Clar</mark>	ificatio	n of test co	ndition					
Summary of change: # completion of test, removal of TBD in frequencies of test, add reference to 34.108. Also opportunity taken to tidy up slightly										
Consequences not approved:	if	₩ Inco	mplete	test, test f	requency app	ears	'TBI	D'		
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Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked \$\mathbb{H}\$ contain pop-up help information about the field that they are closest to.
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3)	3) With "track changes" disabled, paste the entire CR form (the clause containing the first piece of changed text. Delethe change request.	use CTRL-A to select it) into the specification just in front of te those parts of the specification which are not relevant to

7.7.1 Demodulation of DCH in Inter-Cell Soft Handover

7.7.1.1 Definition and applicability

The bit error ratio characteristics of UE is determined during an inter-cell soft handover. During the soft handover a UE receives signals from different Base Stations. A UE has to be able to demodulate two P-CCPCH channels and to combine the energy of DCH channels. Delay profiles of signals received from different Base Stations are assumed to be the same but time shifted by 10 chips.

The receive characteristics of the different channels during inter-cell handover are determined by the Block Error Ratio (BLER) values.

The UE shall be tested only according to the data rate, supported. The data-rate-corresponding requirements shall apply to the UE.

7.7.1.2 Minimum requirements

For the parameters specified in table 7.7.1.1 the average downlink $\underline{DPCH_{-}E_{c}}$ power ratio shall be below the specified value for the BLER shown in table 7.7.1.2.

Table 7.7.1.1: DCH parameters in multi-path propagation conditions during Soft Handoff (Case 3)

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Phase reference		P-CF			
\hat{I}_{or1}/I_{oc} and \hat{I}_{or2}/I_{oc}	0	0	3	6	dB
I_{oc}		-6	dBm / 3,84 MHz		
Information Data Rate	12,2	64	144	384	kbps

Table 7.7.1.2: DCH requirements in multi-path propagation conditions during Soft Handoff (Case 3)

Test Number	$DPCH_E_c$	BLER
	I_{or}	•
1	−15,2 dB	10 ⁻²
2	–11,8 dB	10 ⁻¹
	–11,3 dB	10 ⁻²
3	−9,6 dB	10-1
	−9,2 dB	10 ⁻²
4	−6,0 dB	10-1
	−5,5 dB	10 ⁻²

The reference for this requirement is TS 25.101 [1] clause 8.7.1.1.

7.7.1.3 Test purpose

To verify that the BLER does not exceed the value at the DPCH_Ec/Ior specified in table 7.7.1.2.

7.7.1.4 Method of test

7.7.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

[TBD]

7.7.1.4.2 Procedures

- 1) Connect the SS, multi-path fading simulator and an AWGN noise source to the UE antenna connector as shown in figure A.11.
- 2) Set up the call according to the Generic call setup procedure specified in TS 34.108 [3] clause 7.3.2.
- 3) Set the test parameters for test 1-4 as specified in table 7.7.1.3.
- 4) Count, at the SS, the number of information blocks transmitted and the number of correctly received information blocks at the UE.
- 5) Measure BLER of DCH channel.

7.7.1.5 Test requirements

For the parameters specified in table 7.7.1.3 the average downlink $\frac{DPCH_{-}E_{c}}{I_{or}}$ power ratio shall be below the specified value for the BLER shown in table 7.7.1.4.

Table 7.7.1.3: DCH parameters in multi-path propagation conditions during Soft Handoff (Case 3)

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Phase reference		P-CF			
\hat{I}_{or1}/I_{oc} and \hat{I}_{or2}/I_{oc}	0,8	0,8	3,8	6,8	dB
I_{oc}		-6	dBm / 3,84 MHz		
Information Data Rate	12,2	64	144	384	kbps

Table 7.7.1.4: DCH requirements in multi-path propagation conditions during Soft Handoff (Case 3)

Test Number	$DPCH_E_c$	BLER
	$\overline{I_{or}}$	_
1	–15,1 dB	10 ⁻²
2	–11,7 dB	10-1
	–11,2 dB	10 ⁻²
3	−9,5 dB	10-1
	−9,1 dB	10 ⁻²
4	−5,9 dB	10-1
	−5,4 dB	10 ⁻²

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #24 Toronto, Canada 26-30 July, 2004

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7.7.3 Combining of reliable TPC commands from radio links of different radio link sets

7.7.3.1 Definition and applicability

When a UE is in soft handover, reliable TPC commands may be received in each slot from different cells in the active set. In general, the TPC commands transmitted in the same slot in the different cells may be different and need to be combined to give TPC_cmd as specified in TS 25.214 [5], in order to determine the required uplink power step.

The requirements and this test apply to all types of UTRA for the FDD UE.

7.7.3.2 Minimum requirements

Test parameters are specified in Table 7.7.3.1. Before the start of the tests, the UE transmit power shall be initialised to -15 dBm. An actual UE transmit power may vary from the target level of -15 dBm due to inaccurate UE output power step.

Test 1 verifies that the UE follows only the reliable TPC commands in soft handover. Test 2 verifies that the UE follows all the reliable TPC commands in soft handover.

During tests 1 and 2 the UE transmit power samples, which are defined as the mean power over one timeslot, shall stay 90% of the time within the range defined in Table 7.7.3.2.

Table 7.7.3.1: Parameters for reliable TPC command combining

Parameter	Unit	Test 1	Test 2	
Phase reference	-	P-C	PICH	
DPCH_Ec/lor1	dB	Note 1	Note 1 & Note 3	
DPCH_Ec/lor2	dB	DPCH_Ec/lor1 - 10	DPCH_Ec/lor1 + 6	
DPCH_Ec/lor3	dB	DPCH_Ec/lor1 - 10	-	
\hat{I}_{orl}/I_{oc}	dB	-1	-1	
\hat{I}_{or2}/I_{oc}	dB	-1	-1	
\hat{I}_{or3} / I_{oc}	dB	-1	-	
I_{oc}	dBm/3.84 MHz	-60		
Power-Control-Algorithm	-	Algo	rithm 1	
Cell 1 TPC commands	-	Note 2	Note 2	
Cell 2 TPC commands	-	"1"	"1"	
Cell 3 TPC commands	-	"1" -		
Information data Rate	Kbps	1	2.2	
Propagation condition	-	Static		

Note 1: The DPCH_Ec/lor1 is set at the level corresponding to 5% TPC error rate.

Note 2: The uplink power control from cell1 shall be such that the UE transmit power would

stay at -15 dBm.

Note 3: The maximum DPCH_Ec/lor1 level in cell1 is -9 dB.

Table 7.7.3.2: Test requirements for reliable TPC command combining

Parameter	Unit	Test 1	Test 2
UE output power	dBm	-15 ± 5 dB	-15 ± 3 dB

The reference for this requirement is TS 25.101 [1] clause 8.7.3.1.

7.7.3.3 Test purpose

To verify that the combining of reliable TPC commands received in soft handover results in TPC_cmd being derived so as to meet the requirements stated in tables 7.7.3.2 and 7.7.3.3.

7.7.3.4 Method of test

7.7.3.4.1 Test 1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect three SS's to the UE antenna connector as shown in figure A.1618.
- 2) Activate one of three cells (Cell 1).

7.7.3.4.2 Test 1 Procedures

- 1) Set up a call according to the Generic Call Setup procedure.
- 2) Activate the other two cells (Cell 2 and Cell 3) on the other SS's.
- 3) Set the test parameters as specified in table 7.7.3.3 for Test 1.
- 4) Signal the uplink DPCH power control parameters to use Algorithm 1 and a step size of 1dB.
- 5) Enter the UE into loopback test mode and start the loopback test.
- 6) The downlink DPCH Ec/Ior1 level is adjusted so that 5%+TBD downlink TPC error is maintained from Ec/Ior1. Cell 1 transmits a known pattern of TPC commands and for each slot detect the power step. Thereby the TPC error rate can be measured. The downlink DPCH Ec/Ior1 is adjusted so that the TPC error rate is equal to 5%+TBD.
- 7) Send power control commands to the UE until the UE output power measured by Test System is adjusted to the specified power level with ± 1.5 dB tolerance due to power control step size.
- 8) Set up the UE in soft handover between Cell 1, Cell 2 and Cell 3. The downlink TPC commands from Cell 2 and Cell 3 shall continuously have the value "1" during the test while Cell 1 use the UE Output power = -15 dBm as the power control target.
- 9) The DPCH Ec/Ior2 and DPCH Ec/Ior3 are adjusted to be 10 dB lower than DPCH_Ec/Ior1.
- 10) Measure the mean power at the UE antenna connector, not including the 25 μs transient periods at the start and end of each slot.
- 11) Repeat step 10) [1000] times according to Annex F.6.2 Table F.6.2.8.
- 12) End test 1 and disconnect UE.

See TS 34.108 [3] and TS 34.109 [4] for details regarding the generic call setup procedure and loopback test.

7.7.3.4.3 Test 2 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect two SS's to the UE antenna connector as shown in figure A.13.
- 2) Activate one of three cells (Cell 1).

7.7.3.4.4 Test 2 Procedures

- 1) Set up a call according to the Generic Call Setup procedure.
- 2) Activate the other cell (Cell 2) on the other SS
- 3) Set the test parameters as specified in table 7.7.3.3 for Test 2.

- 4) Signal the uplink DPCH power control parameters to use Algorithm 1 and a step size of 1dB.
- 5) Enter the UE into loopback test mode and start the loopback test.
- 6) The downlink DPCH Ec/Ior1 level is adjusted so that 5%+TBD downlink TPC error is maintained from Ec/Ior1. Cell 1 transmits a known pattern of TPC commands and for each slot detect the power step. Thereby the TPC error rate can be measured. The downlink DPCH Ec/Ior1 is adjusted so that the TPC error rate is equal to 5%+TBD.
- 7) Send power control commands to the UE until the UE output power measured by Test System is adjusted to the specified power level with ±5 dB tolerance.
- 8) Set up the UE in soft handover between Cell 1 and Cell 2. The downlink TPC commands from Cell 2 shall continuously have the value "1" during the test while Cell 1 use the UE Output power = -15 dBm as the power control target.
- 9) The DPCH Ec/Ior2 is adjusted to be 6 dB higher than DPCH_Ec/Ior1.
- 10) Measure the mean power at the UE antenna connector, not including the $25~\mu s$ transient periods at the start and end of each slot.
- 11) Repeat step 10) [1000] times according to Annex F.6.2 Table F.6.2.8.
- 12) End test 2 and disconnect UE.

See TS 34.108 [3] and TS 34.109 [4] for details regarding the generic call setup procedure and loopback test.

7.7.3.5 Test requirements

Test parameters are specified in Table 7.7.3.3. Before the start of the tests, the UE transmit power shall be initialised to -15 dBm. An actual UE transmit power may vary from the target level of -15 dBm due to inaccurate UE output power step.

Table 7.7.3.3: Parameters for reliable TPC command combining

Parameter	Unit	Test 1	Test 2	
Phase reference	-	P-C	PICH	
DPCH_Ec/lor1	DB	Note 1	Note 1 & Note 3	
DPCH_Ec/lor2	DB	DPCH_Ec/lor1 - 10	DPCH_Ec/lor1 + 6	
DPCH_Ec/lor3	DB	DPCH_Ec/lor1 - 10	•	
\hat{I}_{orl}/I_{oc}	DB	-1	-1	
\hat{I}_{or2}/I_{oc}	DB	-1	-1	
\hat{I}_{or3}/I_{oc}	DB	-1	-	
I_{oc}	dBm/3.84 MHz	-60		
Power-Control-Algorithm	-	Algo	rithm 1	
Cell 1 TPC commands	-	Note 2	Note 2	
Cell 2 TPC commands	-	"1"	"1"	
Cell 3 TPC commands	-	"1"	=	
Information data Rate	Kbps	1	2.2	
Propagation condition	•	Static		

Note 1: The DPCH_Ec/lor1 is set at the level corresponding to 5% TPC error rate.

Note 2: The uplink power control from cell1 shall be such that the UE transmit power would stay at -15 dBm.

Note 3: The maximum DPCH_Ec/lor1 level in cell1 is -9 dB.

NOTE 1: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Annex A (informative): Connection Diagrams

Definition of Terms

System Simulator or SS – A device or system, that is capable of generating simulated Node B signalling and analysing UE signalling responses on one or more RF channels, in order to create the required test environment for the UE under test. It will also include the following capabilities:

- 1. Measurement and control of the UE Tx output power through TPC commands
- 2. Measurement of Rx BLER and BER
- 3. Measurement of signalling timing and delays
- 4. Ability to simulate UTRAN and/or GERAN signalling

Test System – A combination of devices brought together into a system for the purpose of making one or more measurements on a UE in accordance with the test case requirements. A test system may include one or more System Simulators if additional signalling is required for the test case. The following diagrams are all examples of Test Systems

Note:

The above terms are logical definitions to be used to describe the test methods used in this document (TS34.121), in practice, real devices called 'System Simulators' may also include additional measurement capabilities or may only support those features required for the test cases they are designed to perform.

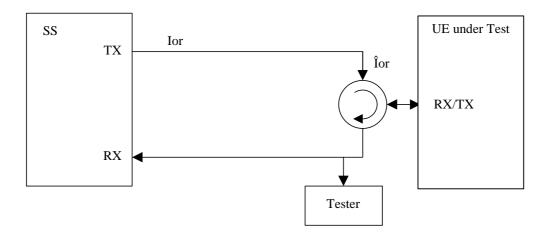


Figure A.1: Connection for Basic TX Test

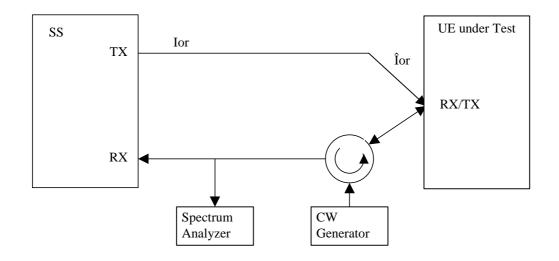


Figure A.2: Connection for TX Intermodulation Test

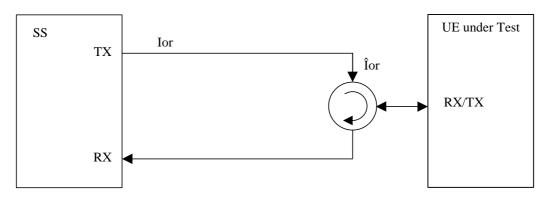


Figure A.3: Connection for Basic RX Test

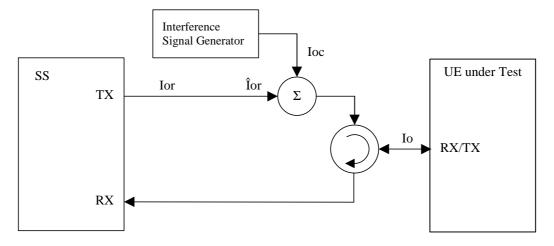


Figure A.4: Connection for RX Test with Interference

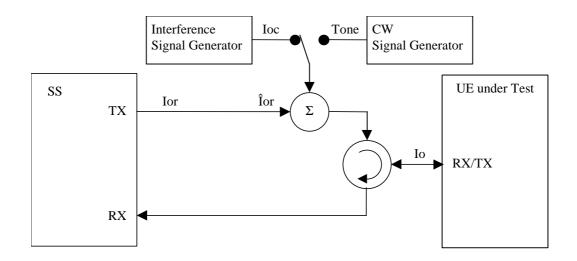


Figure A.5: Connection for RX Test with Interference or additional CW

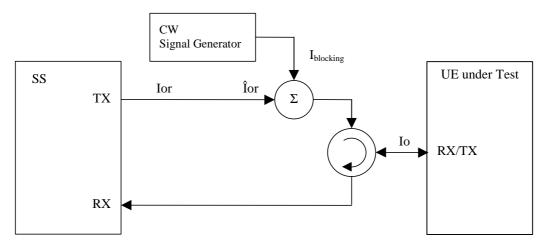


Figure A.6: Connection for RX Test with additional CW

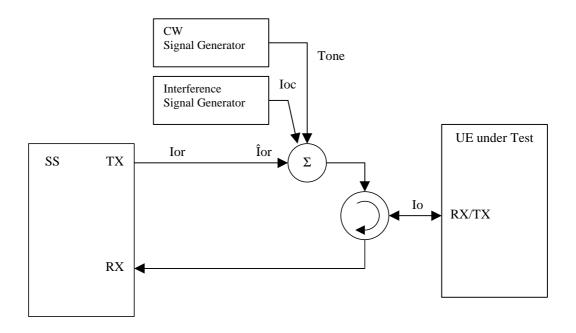


Figure A.7: Connection for RX Test with both Interference and additional CW

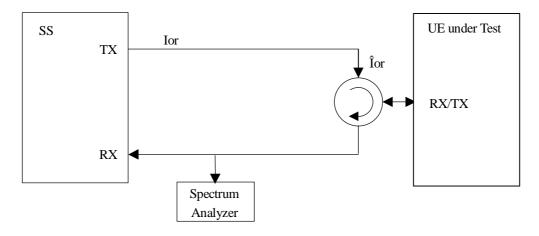


Figure A.8: Connection for Spurious Emission Test

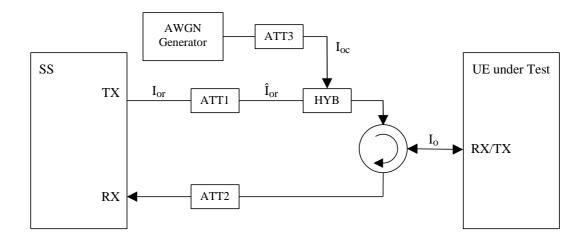


Figure A.9: Connection for Static Propagation Test

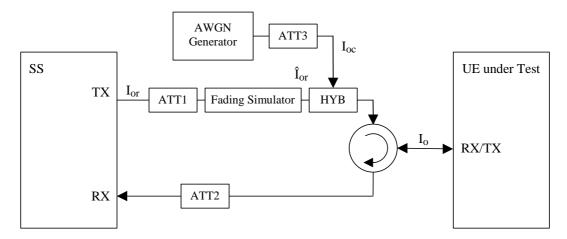


Figure A.10: Connection for Multi-path Fading Propagation Test

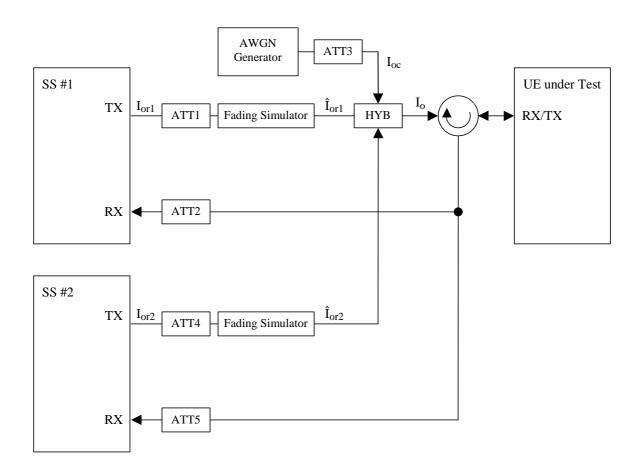


Figure A.11: Connection for Inter-Cell Soft Handover Test

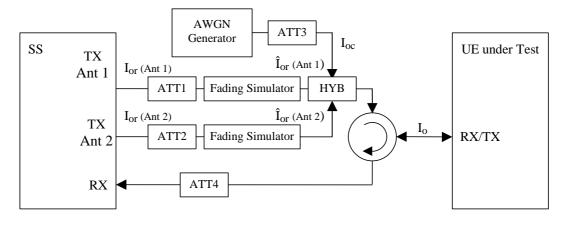


Figure A.12: Connection for Demodulation of DCH in open and closed loop transmit diversity modes

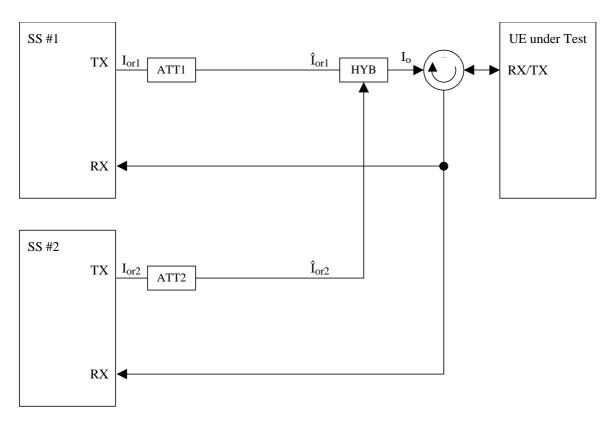


Figure A.13: Connection for Combining of TPC commands in Soft Handover Test 1

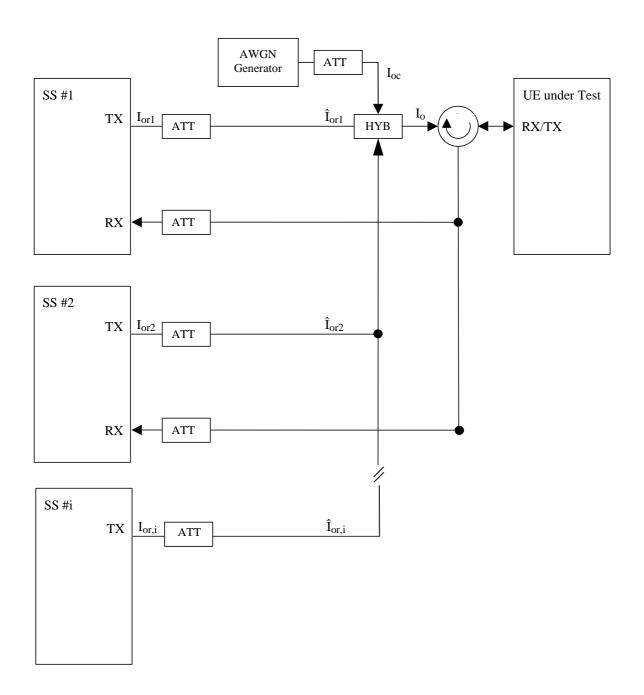


Figure A.14: Connection for cell reselection single carrier multi cell

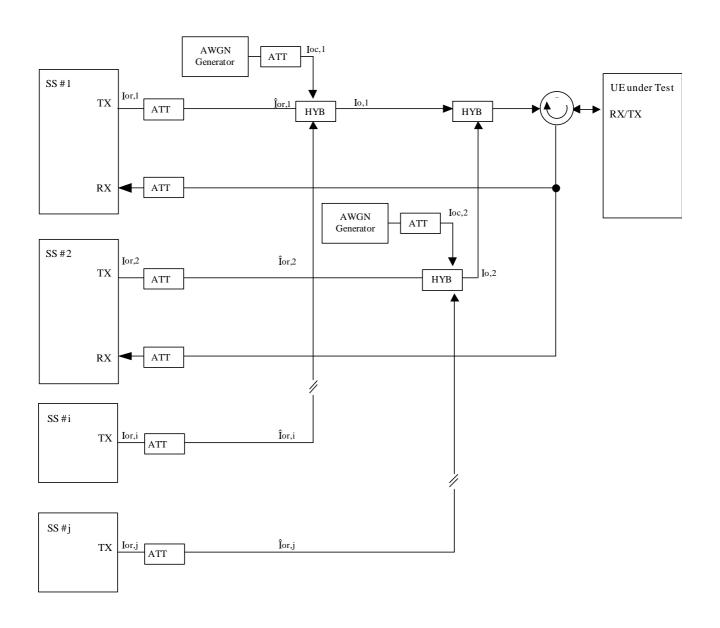


Figure A.15: Connection for cell reselection multi carrier multi cell

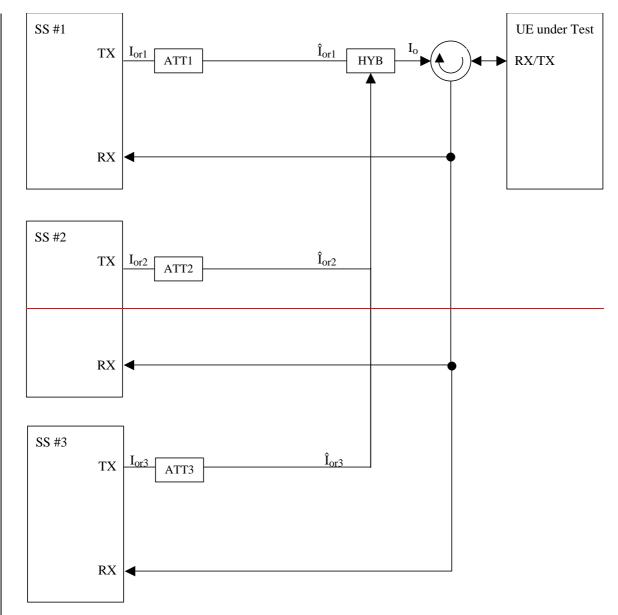


Figure A.16: Connection for Combining of reliable TPC commands in Soft Handover Test 1

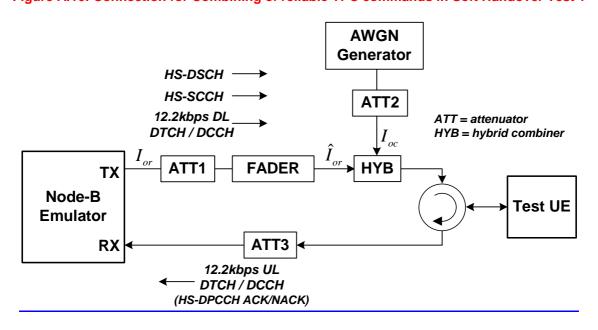


Figure A.16: Connection setup for HSDPA fixed reference channel

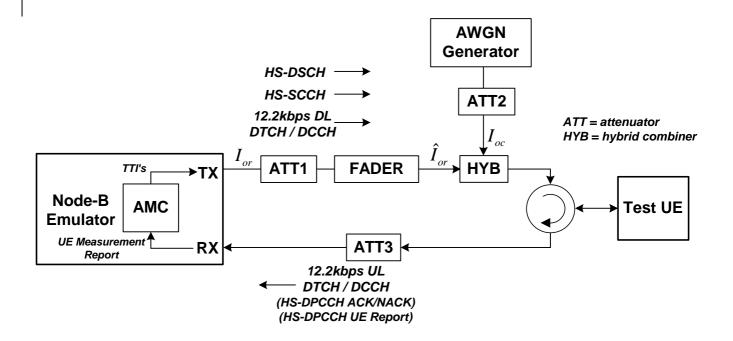


Figure A.17: Connection setup for HSDPA Reporting of Channel Quality Indicator

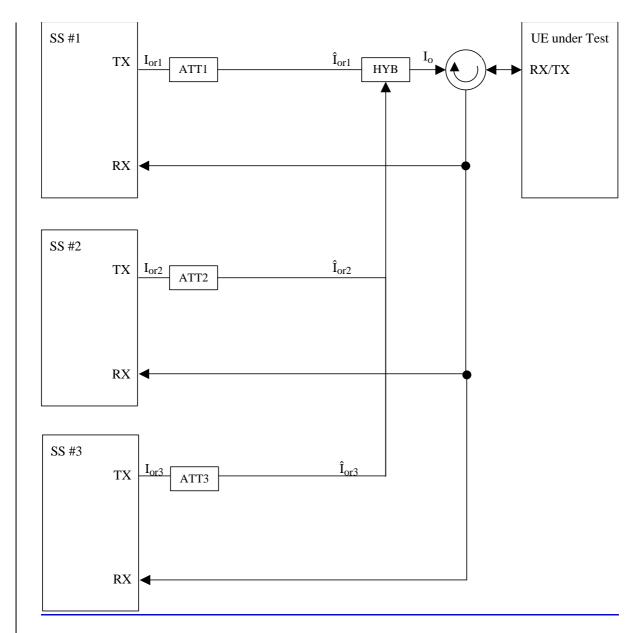


Figure A.18: Connection for Combining of reliable TPC commands in Soft Handover Test 1

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How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version,

look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.7.3 Combining of reliable TPC commands from radio links of different radio link sets

7.7.3.1 Definition and applicability

When a UE is in soft handover, reliable TPC commands may be received in each slot from different cells in the active set. In general, the TPC commands transmitted in the same slot in the different cells may be different and need to be combined to give TPC_cmd as specified in TS 25.214 [5], in order to determine the required uplink power step.

The requirements and this test apply to all types of UTRA for the FDD UE.

7.7.3.2 Minimum requirements

Test parameters are specified in Table 7.7.3.1. Before the start of the tests, the UE transmit power shall be initialised to -15 dBm. An actual UE transmit power may vary from the target level of -15 dBm due to inaccurate UE output power step.

Test 1 verifies that the UE follows only the reliable TPC commands in soft handover. Test 2 verifies that the UE follows all the reliable TPC commands in soft handover.

During tests 1 and 2 the UE transmit power samples, which are defined as the mean power over one timeslot, shall stay 90% of the time within the range defined in Table 7.7.3.2.

Table 7.7.3.1: Parameters for reliable TPC command combining

Parameter	Unit	Test 1	Test 2	
Phase reference	-	P-CPICH		
DPCH_Ec/lor1	dB	Note 1	Note 1 & Note 3	
DPCH_Ec/lor2	dB	DPCH_Ec/lor1 - 10	DPCH_Ec/lor1 + 6	
DPCH_Ec/lor3	dB	DPCH_Ec/lor1 - 10	-	
\hat{I}_{orl}/I_{oc}	dB	-1	-1	
\hat{I}_{or2}/I_{oc}	dB	-1	-1	
\hat{I}_{or3}/I_{oc}	dB	-1	-	
I_{oc}	dBm/3.84 MHz	-60		
Power-Control-Algorithm	-	Algo	rithm 1	
Cell 1 TPC commands	-	Note 2	Note 2	
Cell 2 TPC commands	-	"1"	"1"	
Cell 3 TPC commands	-	"1" -		
Information data Rate	Kbps	1	2.2	
Propagation condition	-	Static		

Note 1: The DPCH_Ec/lor1 is set at the level corresponding to 5% TPC error rate.

Note 2: The uplink power control from cell1 shall be such that the UE transmit power would stay at -15 dBm.

Note 3: The maximum DPCH_Ec/lor1 level in cell1 is -9 dB.

Table 7.7.3.2: Test requirements for reliable TPC command combining

Parameter	Unit	Test 1	Test 2
UE output power	dBm	-15 ± 5 dB	-15 ± 3 dB

The reference for this requirement is TS 25.101 [1] clause 8.7.3.1.

7.7.3.3 Test purpose

To verify that the combining of reliable TPC commands received in soft handover results in TPC_cmd being derived so as to meet the requirements stated in tables 7.7.3.2 and 7.7.3.3.

7.7.3.4 Method of test

7.7.3.4.1 Test 1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect three SS's to the UE antenna connector as shown in figure A.16.
- 2) Activate one of three cells (Cell 1).

7.7.3.4.2 Test 1 Procedures

- 1) Set up a call according to the Generic Call Setup procedure.
- 2) Activate the other two cells (Cell 2 and Cell 3) on the other SS's.
- 3) Set the test parameters as specified in table 7.7.3.3 for Test 1.
- 4) Signal the uplink DPCH power control parameters to use Algorithm 1 and a step size of 1dB.
- 5) Enter the UE into loopback test mode and start the loopback test.
- 6) The downlink DPCH Ec/Ior1 level is adjusted so that 5%+TBD_+/-1%. downlink TPC error is maintained from Ec/Ior1. Cell 1 transmits a known pattern of TPC commands and for each slot detect the power step. Thereby the TPC error rate can be measured. The downlink DPCH Ec/Ior1 is adjusted so that the TPC error rate is equal to 5%+TBD_+/-1%.
- 7) Send power control commands to the UE until the UE output power measured by Test System is adjusted to the specified power level with ± 1.5 dB tolerance due to power control step size.
- 8) Set up the UE in soft handover between Cell 1, Cell 2 and Cell 3. The downlink TPC commands from Cell 2 and Cell 3 shall continuously have the value "1" during the test while Cell 1 use the UE Output power = -15 dBm as the power control target.
- 9) The DPCH Ec/Ior2 and DPCH Ec/Ior3 are adjusted to be 10 dB lower than DPCH_Ec/Ior1.
- 10) Measure the mean power at the UE antenna connector, not including the $25~\mu s$ transient periods at the start and end of each slot.
- 11) Repeat step 10) [1000] times according to Annex F.6.2 Table F.6.2.8.
- 12) End test 1 and disconnect UE.

See TS 34.108 [3] and TS 34.109 [4] for details regarding the generic call setup procedure and loopback test.

7.7.3.4.3 Test 2 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect two SS's to the UE antenna connector as shown in figure A.13.
- 2) Activate one of three cells (Cell 1).

7.7.3.4.4 Test 2 Procedures

- 1) Set up a call according to the Generic Call Setup procedure.
- 2) Activate the other cell (Cell 2) on the other SS

- 3) Set the test parameters as specified in table 7.7.3.3 for Test 2.
- 4) Signal the uplink DPCH power control parameters to use Algorithm 1 and a step size of 1dB.
- 5) Enter the UE into loopback test mode and start the loopback test.
- 6) The downlink DPCH Ec/Ior1 level is adjusted so that 5%+TBD +/-1%. downlink TPC error is maintained from Ec/Ior1. Cell 1 transmits a known pattern of TPC commands and for each slot detect the power step. Thereby the TPC error rate can be measured. The downlink DPCH Ec/Ior1 is adjusted so that the TPC error rate is equal to 5%+TBD +/-1%.
- 7) Send power control commands to the UE until the UE output power measured by Test System is adjusted to the specified power level with ±5 dB tolerance.
- 8) Set up the UE in soft handover between Cell 1 and Cell 2. The downlink TPC commands from Cell 2 shall continuously have the value "1" during the test while Cell 1 use the UE Output power = -15 dBm as the power control target.
- 9) The DPCH Ec/Ior2 is adjusted to be 6 dB higher than DPCH_Ec/Ior1.
- 10) Measure the mean power at the UE antenna connector, not including the 25 µs transient periods at the start and end of each slot.
- 11) Repeat step 10) [1000] times according to Annex F.6.2 Table F.6.2.8.
- 12) End test 2 and disconnect UE.

See TS 34.108 [3] and TS 34.109 [4] for details regarding the generic call setup procedure and loopback test.

7.7.3.5 Test requirements

Test parameters are specified in Table 7.7.3.3. Before the start of the tests, the UE transmit power shall be initialised to -15 dBm. An actual UE transmit power may vary from the target level of -15 dBm due to inaccurate UE output power step.

Table 7.7.3.3: Parameters for reliable TPC command combining

Parameter	Unit	Test 1	Test 2
Phase reference	-	P-C	PICH
DPCH_Ec/lor1	DB	Note 1	Note 1 & Note 3
DPCH_Ec/lor2	DB	DPCH_Ec/lor1 - 10	DPCH_Ec/lor1 + 6
DPCH_Ec/lor3	DB	DPCH_Ec/lor1 - 10	•
\hat{I}_{orl}/I_{oc}	DB	-1	-1
\hat{I}_{or2}/I_{oc}	DB	-1	-1
\hat{I}_{or3}/I_{oc}	DB	-1	•
I_{oc}	dBm/3.84 MHz	-60	
Power-Control-Algorithm	-	Algo	rithm 1
Cell 1 TPC commands	-	Note 2	Note 2
Cell 2 TPC commands	-	"1"	"1"
Cell 3 TPC commands	-	"1" -	
Information data Rate	Kbps	12.2	
Propagation condition	-	Static	

Note 1: The DPCH_Ec/lor1 is <u>configured to set at the a level such that corresponding to the TPC error rate is set to 5%-+/-1% (with 95% confidence) TPC error rate.</u>

Note 2: The uplink power control from cell1 shall be such that the UE transmit power would stay at -15 dBm.

Note 3: The maximum DPCH_Ec/lor1 level in cell1 is -9 dB.

NOTE 1: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

- 1) In step 10) of clause 7.7.3.4.2, the UE transmit power samples, which are defined as the mean power over one timeslot, shall stay 90% of the time within the range defined in Table 7.7.3.2.
- 2) In step 10) of clause 7.7.3.4.4, the UE transmit power samples, which are defined as the mean power over one timeslot, shall stay 90% of the time within the range defined in Table 7.7.3.2.

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3GPP

5 Transmitter Characteristics

5.1 General

Transmitting performance test of the UE is implemented during communicating with the SS via air interface. The procedure is using normal call protocol until the UE is communicating on traffic channel basically. On the traffic channel, the UE provides special function for testing that is called Logical Test Interface and the UE is tested using this function. (Refer to TS 34.109 [4]).

Transmitting or receiving bit/symbol rate for test channel is shown in table 5.1.

Table 5.1: Bit / Symbol rate for Test Channel

Type of User Information	User bit rate	DL DPCH symbol rate	UL DPCH bit rate	Remarks
12,2 kbps reference measurement channel	12,2 kbps	30 ksps	60 kbps	Standard Test

Unless detailed the transmitter characteristic are specified at the antenna connector of the UE. For UE with integral antenna only, a reference antenna with a gain of 0 dBi is assumed. Transmitter characteristics for UE(s) with multiple antennas/antenna connectors are FFS.

The UE antenna performance has a significant impact on system performance, and minimum requirements on the antenna efficiency are therefore intended to be included in future versions of the present document. It is recognised that different requirements and test methods are likely to be required for the different types of UE.

All the parameters in clause 5 are defined using the UL reference measurement channel (12,2 kbps) specified in clause C.2.1 and unless stated otherwise, with the UL power control ON.

The common RF test conditions of Tx Characteristics are defined in clause E.3.1, and each test conditions in this clause (clause 5) should refer clause E.3.1. Individual test conditions are defined in the paragraph of each test.

For loopback tests, DCCH Data shall be continuously transmitted on downlink DCH during the measurement period.

{Unchanged Sections are clipped here}

6.1 General

Receiving performance test of the UE is implemented during communicating with the SS via air interface. The procedure is using normal call protocol until the UE is communicating on traffic channel basically. On the traffic channel, the UE provides special function for testing that is called Logical Test Interface and the UE is tested using this function (Refer to TS 34.109 [4])

Transmitting or receiving bit/symbol rate for test channel is shown in table 6.1.

Table 6.1: Bit / Symbol rate for Test Channel

Type of User Information	User bit rate	DL DPCH symbol rate	UL DPCH bit rate	Remarks
12,2 kbps reference	12,2 kbps	30 ksps	60 kbps	Standard Test
measurement channel				

Unless otherwise stated the receiver characteristics are specified at the antenna connector of the UE. For UE(s) with an integral antenna only, a reference antenna with a gain of 0 dBi is assumed. UE with an integral antenna may be taken into account by converting these power levels into field strength requirements, assuming a 0 dBi gain antenna. Receiver characteristics for UE(s) with multiple antennas/antenna connectors are FFS.

The UE antenna performance has a significant impact on system performance, and minimum requirements on the antenna efficiency are therefore intended to be included in future versions of the present document. It is recognised that different requirements and test methods are likely to be required for the different types of UE.

All the parameters in clause 6 are defined using the DL reference measurement channel (12,2 kbps) specified in clause C.3.1 and unless stated otherwise, with DL power control OFF.

The common RF test conditions of Rx Characteristics are defined in clause E.3.2, and each test conditions in this clause (clause 6) should refer clause E.3.2. Individual test conditions are defined in the paragraph of each test.

For loopback tests, DCCH Data shall be continuously transmitted on downlink DCH during the measurement period.

All Bit Error ratio (BER) measurements in clause 6 shall be performed according to the general rules for statistical testing in Annex F.6.

{Unchanged Sections are clipped here}

7 Performance requirements

7.1 General

The performance requirements for the UE in this clause are specified for the measurement channels specified in annex C and table 7.1.1, the propagation conditions specified in clause 7.1.2 and the Down link Physical channels specified in annex D. Unless stated otherwise, DL power control is OFF.

For loopback tests, DCCH Data shall be continuously transmitted on downlink DCH during the measurement period.

The method for Block Error Ratio (BLER) measurement is specified in 3GPP TS 34.109 [4].

Table 7.1.1: Bit / Symbol rate for Test Channel

Type of User Information	User bit rate	DL DPCH symbol rate	DL DPCH bit rate	TTI (ms)
12,2 kbps reference measurement channel	12,2 kbps	30 ksps	60 kbps	20
64/144/384 kbps reference measurement channel	64 kbps	120 ksps	240 kbps	20
144kbps reference measurement channel	144 kbps	240 ksps	480 kbps	20
384 kbps reference measurement channel	384 kbps	480 ksps	960 kbps	10

The common RF test conditions of Performance requirement are defined in clause E.3.3, and each test conditions in this clause (clause 7) should refer clause E.3.3. Individual test conditions are defined in the paragraph of each test.

All Block Error ratio (BLER) measurements in clause 7 shall be performed according to the general rules for statistical testing in Annex F.6

{Unchanged Sections are clipped here}

E.1 General

This normative annex specifies the downlink physical channels that are needed for setting a connection and channels that are needed during a connection. For the definition of OCNS, the power of OCNS shall be controlled so as to keep the total transmit power spectral density Ior constant. The Ior shall be measured as the mean power defined in 3.1 Definitions. The mean power shall be kept constant from one slot to the next.

In test cases where the Ior should be kept constant, it shall be acceptable to continuously send logical channel DCCH data which is allowed to be dummy DCCH data, so that it is not necessary to count the number of power off symbols and calculate OCNS power every symbol or slot period to keep the Ior constant.

NOTE: The power level specified for each physical channel in this annex is an average power, as measured during periods when the physical channel transmission is ON (see [19] for definitions), and no DTX symbols are being transmitted on that physical channel.

E.2 Connection Set-up

Table E.2.1 describes the downlink Physical Channels that are required for connection set up.

Table E.2.1: Downlink Physical Channels required for connection set-up

Physical Channel				
CPICH				
P-CCPCH				
SCH				
S-CCPCH				
PICH				
AICH				
DPCH				

E.2.1 Measurement without dedicated connection

Table E.2.2 describes the downlink Physical Channels that are required for measurement before connection. This is applicable for the clauses 5.4.1 and 5.5.2.

Table E.2.2: Downlink Physical Channels transmitted without dedicated connection

Physical Channel	Power		
Îor	Test dependent power		
CPICH	CPICH_Ec / lor	= -3.3 dB	
P-CCPCH	P-CCPCH_Ec / lor	= -5,3 dB	
SCH	SCH_Ec / Ior	= −5,3 dB	
PICH	PICH_Ec / Ior	= -8.3 dB	
S-CCPCH	S-CCPCH_Ec / lor	= -10,3 dB	

E.3 During connection

The following clauses describe the downlink Physical Channels that are transmitted during a connection i.e., when measurements are done. For these measurements the offset between DPCH and SCH shall be zero chips at base station meaning that SCH is overlapping with the first symbols in DPCH in the beginning of DPCH slot structure.

E.3.1 Measurement of Tx Characteristics

Table E.3.1 is applicable for measurements on the Transmitter Characteristics (clause 5) with the exception of clauses 5.3, 5.4.1, 5.4.4 and 5.5.2.

NOTE: Applicability to clause 5.7 (Power setting in uplink compressed mode) is FFS.

Table E.3.1: Downlink Physical Channels transmitted during a connection

Physical Channel	Power		
Îor	–93 dBm / 3,84MHz		
CPICH	CPICH_Ec / DPCH_Ec =	= 7 dB	
P-CCPCH	P-CCPCH_Ec / DPCH_Ec =	= 5 dB	
SCH	SCH_Ec / DPCH_Ec =	= 5 dB	
PICH	PICH_Ec / DPCH_Ec =	= 2 dB	
DPCH	-103,3 dBm / 3,84MHz		

E.3.2 Measurement of Rx Characteristics

Table E.3.2.1 is applicable for measurements on the Receiver Characteristics (clause 6) with the exception of clauses 6.3 and 6.8.

Table E.3.2.1: Downlink Physical Channels transmitted during a connection

Physical Channel	Power		
CPICH	CPICH_Ec / DPCH_Ec	= 7 dB	
P-CCPCH	P-CCPCH_Ec/ DPCH_Ec	= 5 dB	
SCH	SCH_Ec / DPCH_Ec	= 5 dB	
PICH	PICH_Ec / DPCH_Ec	= 2 dB	
DPCH	Test dependent power		

Table E.3.2.2 describes the downlink Physical Channels that are required for the test of Spurious Emissions (clause 6.8). The UE is in the CELL_FACH state during the measurement.

Table E.3.2.2: Downlink Physical Channels transmitted during the measurement for Rx Spurious Emissions

Physical Channel	Power		
CPICH	-96 dBm / 3,84MHz		
P-CCPCH	P-CCPCH_Ec/ CPICH_Ec	= -2 dB	
SCH	SCH_Ec / CPICH_Ec	= -2 dB	
PICH	PICH_Ec / CPICH_Ec	= -5 dB	

E.3.3 Measurement of Performance requirements

Table E.3.3 is applicable for measurements on the Performance requirements (clause 7), including clauses 6.3 and 5.4.4, excluding clauses 7.6.1 and 7.6.2.

Table E.3.3: Downlink Physical Channels transmitted during a connection¹

Physical Channel	Power		Note	
P-CPICH	P-CPICH_Ec/lor	= -10 dB	Use of P-CPICH or S-CPICH as phase reference is specified for each requirement and is also set by	
S-CPICH	S-CPICH_Ec/lor	= -10 dB	higher layer signalling. When S-CPICH is the phase reference in a test condition, the phase of S-CPICH shall be 180 degrees offset from the phase of P-CPICH. When S-CPICH is not the phase reference, it is not transmitted.	
P-CCPCH	P-CCPCH_Ec/lor	= -12 dB		
SCH	SCH_Ec/lor	= -12 dB	This power shall be divided equally between Primary and Secondary Synchronous channels	
PICH	PICH_Ec/lor	= -15 dB		
DPCH	Test dependent pow	er	When S-CPICH is the phase reference in a test condition, the phase of DPCH shall be 180 degrees offset from the phase of P-CPICH.	
OCNS	Necessary power so that total transmit power spectral density of Node B (Ior) adds to one		OCNS interference consists of 16 dedicated data channels as specified in table E.3.6.	
NOTE: For dynamic power correction required to compensate for the presence of transient channels, e.g. control channels, a subset of the DPCH channels may be used.				

¹ Power levels are based on the assumption that multipath propagation conditions and noise source representing interference from other cells Ioc are turned on after the call set-up phase.

E.3.4 Connection with open-loop transmit diversity mode

Table E.3.4 is applicable for measurements for clause 7.6.1.

Table E.3.4: Downlink Physical Channels transmitted during a connection²

Physical Channel	Power	Note				
P-CPICH (antenna 1)	P-CPICH_E _{C1} /I _{or} = -13 dB	1. Total P-CPICH_E _C / $I_{Or} = -10 \text{ dB}$				
P-CPICH (antenna 2)	P-CPICH_E _{c2} / I_{or} = -13 dB					
P-CPICH (antenna 1)	P-CPICH_E _{C1} /I _{or} = -13 dB	1. Total P-CPICH_E _C /I _{or} = -10 dB				
P-CPICH (antenna 2)	P-CPICH_E _{c2} / I_{or} = -13 dB					
P-CCPCH (antenna 1)	P-CCPCH_Ec ₁ / I_{or} = -15 dB	STTD applied				
P-CCPCH (antenna 2)	P-CCPCH_Ec ₂ / I_{or} = -15 dB	2. Total P-CCPCH_Ec/l _{or} = −12 dB				
SCH (antenna 1 / 2)	$SCH_E_C/I_{Or} = -12 dB$	1. TSTD applied.				
		This power shall be divided				
		equally between Primary and				
		Secondary Synchronous channels				
PICH (antenna 1)	$PICH_{E_{c1}}/I_{or} = -18 dB$	STTD applied				
PICH (antenna 2)	$PICH_{E_{c2}}/I_{or} = -18 \text{ dB}$	2. Total PICH_E _c /I _{or} = -15 dB				
DPCH	Test dependent power	STTD applied				
		Total power from both antennas				
OCNS	Necessary power so that total	 This power shall be divided 				
	transmit power spectral density	equally between antennas				
	of Node B (Ior) adds to one	OCNS interference consists of				
		16 dedicated data channels as				
		specified in Table E.3.6.				
NOTE: For dynamic power correction required to compensate for the presence of transient						
channels, e.g. control channels, a subset of the DPCH channels may be used.						

E.3.5 Connection with closed loop transmit diversity mode

table E.3.5 is applicable for measurements for clause 7.6.2.

Table E.3.5: Downlink Physical Channels transmitted during a connection³

Physical Channel	Power	Note			
P-CPICH (antenna 1)	P-CPICH_Ec1/lor = -13 dB	1. Total P-CPICH_Ec/lor = -10 dB			
P-CPICH (antenna 2)	P-CPICH_Ec2/lor = -13 dB				
P-CCPCH (antenna 1)	P-CCPCH_Ec1/lor = -15 dB	STTD applied			
P-CCPCH (antenna 2)	P-CCPCH_Ec2/lor = -15 dB	STTD applied, total			
		P-CCPCH_Ec/lor = -12 dB			
SCH (antenna 1 / 2)	$SCH_Ec/lor = -12 dB$	TSTD applied			
PICH (antenna 1)	PICH_Ec1/lor = -18 dB	STTD applied			
PICH (antenna 2)	PICH_Ec2/lor = -18 dB	STTD applied, total			
		PICH_Ec/lor = -15 dB			
DPCH	Test dependent power	Total power from both antennas			
OCNS	Necessary power so that total	This power shall be divided			
	transmit power spectral density	equally between antennas			
	of Node B (lor) adds to one	OCNS interference consists of			
		16 dedicated data channels as			
		specified in Table E.3.6.			
NOTE: For dynamic power correction required to compensate for the presence of transient					
channels, e.g. control channels, a subset of the DPCH channels may be used.					

² Power levels are based on the assumption that multipath propagation conditions and noise source representing interference from other cells loc are turned on after the call set-up phase.

³ Power levels are based on the assumption that multipath propagation conditions and noise source representing interference from other cells Ioc are turned on after the call set-up phase.

Channelization Code at SF=128 ¹	Relative Level setting (dB) ^{1,2}	DPCH Data	
2	-1	The DPCH data	
11	-3	for each	
17	-3	channelization	
23	-5	code shall be	
31	-2	uncorrelated	
38	-4	with each other	
47	-8	and with any wanted signal	
55	-7		
62	-4	over the period	
69	-6	of any	
78	-5	measurement.	
85	-9		
94	-10		
125	-8		
113	-6		
110	Λ	1	

Table E.3.6: DPCH Channelization Code and relative level settings for OCNS signal.

NOTE 1: The DPCH Channelization Codes and relative level settings are chosen to simulate a signal with realistic Peak to Average Ratio.

NOTE 2: The relative level setting specified in dB refers only to the relationship between the OCNS channels. The level of the OCNS channels relative to the Ior of the complete signal is a function of the power of the other channels in the signal with the intention that the power of the group of OCNS channels is used to make the total signal add up to 1.

E.4 W-CDMA Modulated Interferer

The W-CDMA modulated interferer consists of the downlink channels defined in table E.4.1 plus the OCNS channels defined in Table E.3.6. The relative power of the OCNS channels shall be such that the power of the total signal adds up to one. In this subclause Ior refers to the power of the interferer.

Table E.4.1: Spreading Code, Timing offsets and relative level settings for W-CDMA Modulated Interferer signal channels.

Channel Type	Spreading Factor	Channelization Code	Timing offset (x256T _{chip})	Power	NOTE
P-CCPCH	256	1	0	P- CCPCH_Ec/lo r = -10 dB	
SCH	256	-	0	SCH_Ec/lor = -10 dB	The SCH power shall be divided equally between Primary and Secondary Synchronous channels
P-CPICH	256	0	0	P- CPICH_Ec/lor = *10 dB	
PICH	256	16	16	PICH_Ec/lor = -15 dB	
OCNS		See table E.3.6		Necessary power so that total transmit power spectral density of Node B (lor) adds to one	OCNS interference consists of the dedicated data channels. as specified in Table E.3.6.

Toronto, Canada, 26 th - 30 th July 2004						
	CHANGE REQUEST					
*	34.121 CR 410					
For <u>HELP</u> on u	ng this form, see bottom of this page or look at the pop-up text over the 策 symbols.					
Proposed change a	fects: UICC apps器 ME X Radio Access Network Core Network					
Title:	Test system uncertainties update for test case 8.3.5.3					
Source: #	QUALCOMM Inc., Nokia					
Work item code: ₩	TEI Date: 第 28/07/2004					
Category: 岩	Release: Releas					
Reason for change	# Maximum Test System Uncertainty, Test Tolerances and Derivation of Test Requirements are missing for test 8.3.5.3					
Summary of chang	 - Test parameters table was added in section 8.3.5.3.5 to include test system uncertainties - Test procudure was updated to reflect new test requirements - Maximum test system uncertainties for test case 8.3.5.3 have been added into Table F.1.5 - Test tolerances for test case 8.3.5.3 have been added into table F.2.4 - Derivation of test requirements for test case 8.3.5.3 has been added to table F.4.4)				
Consequences if not approved:	光 Test case 8.3.5.3 will not be complete					
Clauses affected:	器 8.3.5.3, Annex F.1.5, Annex F.2.4 and Annex F.4.4					
Other specs affected:	Y N X Other core specifications					
Other comments:	# This CR is applicable for UE's supporting Rel-99 or later.					

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.5.3 Cell Reselection to GSM

8.3.5.3.1 Definition and applicability

The cell re-reselection delay is defined as the time from the beginning of time period T2, to the moment when the UE starts to transmit the random access in Cell 2 (the GSM cell).

This requirements and this test apply to UE supporting FDD PS and GSM GPRS.

8.3.5.3.2 Minimum requirements

The cell re-selection delay shall be less than $5.5 + T_{RA}$ s.

The rate of correct reselections observed during repeated tests shall be at least 90%.

NOTE: The cell re-selection delay can be expressed

$$T_{\text{reselection.GSM}} = T_{\text{identify.GSM}} + T_{\text{measurement.GSM}} + 40 + T_{\text{BCCH}} + T_{\text{RA}} \text{ ms}$$

where:

 $T_{identify,GSM}$ Specified in TS 25.133 [2] clause 8.4.2.5.2.1, here it is 2880 ms

T_{measurement, GSM} Specified in TS 25.133 [2] clause 5.5.2.1.4, here it is 640 ms

T_{BCCH} According to TS 05.08 [xx], the maximum time allowed to read the BCCH data, when being

synchronized to a BCCH carrier, is 1.9 s.

T_{RA} The additional delay caused by the random access procedure in the GSM cell, is 10 ms (2 GSM

radio frames).

These requirements assume radio conditions to be sufficient, so reading of system information can be done without errors.

The normative reference for this requirement is TS 25.133 [2] clauses 5.5.2.1.4 and A.5.5.3.

8.3.5.3.3 Test purpose

The purpose of this test is to verify the requirement for the cell re-selection delay in CELL_FACH state.

8.3.5.3.4 Method of test

8.3.5.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.5.3.1 to 8.3.5.3.5. This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. The UTRAN cell and the GSM cell are set to belong to different location areas. The GSM cell shall be set up to allow UE to transmit radio access burst in every GSM radio frame. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 6 GSM cells.

Table 8.3.5.3.1: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
HCS				Not used
Neighbour cell list size			24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	
T1		S	5	
T2		S	10	

The transport and physical parameters of the S-CCPCH carrying the FACH are defined in Table 8.3.5.3.2 and Table Table 8.3.5.3.3.

Table 8.3.5.3.2: Physical channel parameters for S-CCPCH.

Parameter	Unit	Level
Channel bit rate	kbps	60
Channel symbol rate	ksps	30
Slot Format #I	-	4
TFCI	1	OFF
Power offsets of TFCI and Pilot fields relative to data field	dB	0
Helus relative to data field		

Table 8.3.5.3.3: Transport channel parameters for S-CCPCH

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	1/2
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

Table 8.3.5.3.4: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)
		T1	T2
UTRA RF Channel		Chan	nal 1
Number		0.110	
CPICH_Ec/lor	dB	-1	
PCCPCH_Ec/lor	dB	-1	2
SCH_Ec/lor	dB	-1	
PICH_Ec/lor	dB	-1	
S-CCPCH_Ec/lor	dB	-1	
OCNS_Ec/lor	dB	-1.2	295
\hat{I}_{or}/I_{oc}	dB	0	-5
I_{oc}	dBm/3.84 MHz	-7	•
CPICH_Ec/lo	dB	-13	-16.2
CPICH_RSCP	dBm	-80	-85
Propagation Condition		AW	GN
Cell_selection_and_			
reselection_quality_mea		CPICH	l Ec/lo
sure			
Qqualmin	dB	-2	20
Qrxlevmin	dBm	-1	15
UE_TXPWR_MAX_ RACH	dBm	2	1
Qoffset1 _{s, n}	dB	C1, 0	C2: 0
Qhyst1	dB	(
Treselection	S	()
Ssearch _{RAT}	dB	Not	sent
IE "FACH Measurement		C.	ent
occasion info"		36	rit
FACH Measurement			
occasion cycle length		3	3
coefficient			
Inter-frequency FDD		FAL	n n
measurement indicator		FAL	JOE
Inter-frequency TDD		FAL	SE
measurement indicator		i AL	JOL
Inter-RAT measurement		Inclu	ıded
indicators			
>RAT type		GS	IVI

Table 8.3.5.3.5: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2	(GSM)
		T1	T2
Absolute RF Channel Number		ARFCN	l 1
RXLEV	dBm	-90	-75
RXLEV_ACCESS_ MIN	dBm	-104	
MS_TXPWR_MAX_ CCH	dBm	33	

8.3.5.3.4.2 Procedure

- 1) The SS activates cell 1-2 with RF parameters set up according to T1 in tables 8.3.5.3.<u>64</u> and 8.3.5.3.<u>75</u>.
- 2) The UE is switched on.
- 3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in CELL_FACH and the SS waits for this process to complete.
- 4) After 5 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in tables 8.3.5.3.61.4 and 8.3.5.3.71.5.

- 5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 5.51 s (=5.5 s + T_{RAS}) from the beginning of time period T2 then a success is recorded and the SS completes the location update procedure in GSM and the procedure continues with step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 10s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS completes the location update procedure in GSM and the procedure continues with step 7.
- 7) After 10 s from the beginning of time period T2, the parameters are changed to those defined for T1 in tables 8.3.5.3.61.4 and 8.3.5.3.61.5.
- 8) The SS waits for random access requests from the UE on cell 1. The SS completes the location update procedure in UTRA
- 9) Repeat step 3) to 8) until the confidence level according to annex F.6.2 is achieved.

8.3.5.3.5 Test requirements

Table 8.3.5.3.6: Cell re-selection UTRAN to GSM cell case (cell 1) Test Requirements

<u>Parameter</u>	<u>Unit</u>	Cell 1 (UTRA)	
		<u>T1</u>	<u>T2</u>
UTRA RF Channel		Char	nel 1
<u>Number</u>			,
CPICH Ec/lor	<u>dB</u>		<u>-10.1</u>
PCCPCH Ec/lor	<u>dB</u>	<u>-1</u>	
SCH Ec/lor	<u>dB</u>	<u>-1</u>	
PICH Ec/lor	<u>dB</u>		<u> 5</u>
S-CCPCH_Ec/lor	<u>dB</u>		2
OCNS_Ec/lor	<u>dB</u>	<u>-1.309</u>	<u>-1.282</u>
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>0.3</u>	<u>-5.3</u>
I_{oc}	dBm/3.84		7 0
	MHz		
CPICH Ec/lo	<u>dB</u>	<u>-12.8</u>	
<u>CPICH_RSCP</u>	<u>dBm</u>		<u>-85.4</u>
Propagation Condition		AW	'GN
Cell selection and			
reselection_quality_mea		CPICE	l Ec/lo
sure			
<u>Qqualmin</u>	<u>dB</u>	-2	
<u>Qrxlevmin</u>	<u>dBm</u>	<u>-1</u>	<u>15</u>
UE TXPWR MAX RACH	<u>dBm</u>	2	<u>.1</u>
Qoffset1 _{s, n}	dB	C1, (C2: 0
Qhyst1	dB	()
Treselection	S	()
<u>Ssearch_{RAT}</u>	<u>dB</u>	Not	<u>sent</u>
IE "FACH Measurement occasion info"		Se	<u>ent</u>
FACH Measurement			
occasion cycle length			3
coefficient		2	<u> </u>
Inter-frequency FDD			
measurement indicator		FAL	<u>SE</u>
Inter-frequency TDD		FAL	_SE
measurement indicator			
Inter-RAT measurement indicators		Inclu	<u>ıded</u>
>RAT type		GS	SM

Table 8.3.5.3.7: Cell re-selection UTRAN to GSM cell case (cell 2) Test Requirements

<u>Parameter</u>	<u>Unit</u>	Cell 2 (GSM)	
		<u>T1</u>	<u>T2</u>
Absolute RF Channel Number		ARFCN	<u>l 1</u>
RXLEV	<u>dBm</u>	<u>-90.3</u>	<u>-74.7</u>
RXLEV ACCESS MIN	<u>dBm</u>	<u>-104</u>	
MS_TXPWR_MAX_ CCH	<u>dBm</u>	<u>33</u>	

NOTE 1: CPICH_Ec/Io and CPICH_RSCP levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

For the test to pass, the total number of successful attempts shall be more than 90% of the cases with a confidence level of 95%.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

F.1.5 Requirements for support of RRM

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2 Idle Mode Tasks		
8.2.2 Cell Re-Selection		
8.2.2.1 Scenario 1: Single carrier case	During T1 and T2:	
	$\frac{CPICH _E_c}{I_{or}} \qquad \text{±0.1 dB}$ $I_{oc} \qquad \text{±1.0 dB}$	
	$\frac{\text{During T1:}}{I_{or}(\text{2})} \qquad \text{\pm} 0.7 \text{ dB}$	
	I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB	
	$\frac{\text{During T2:}}{I_{or}(1)} \qquad \pm 0.7 \text{ dB}$	
	I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for lor(r loc are derived according to ETR 273-1-factor of k=2.	
	b) Within each cell, the uncertainty for lo ratio are uncorrelated to each other.	r(n), and channel power
	c) The relative uncertainties for lor(n) achave any amount of positive correlation one (fully correlated).	
	d) Across different cells, the channel pow have any amount of positive correlation to one (fully correlated).	
	e) The uncertainty for loc and lor(n) may positive correlation from zero (uncorrelation)	
	f) The absolute uncertainty of lor(2) at Tuncertainty of lor(1, 3, 4, 5, 6), are uncor Similarly, the absolute uncertainty of lor(uncertainty of lor(2, 3, 4, 5, 6), are uncor	related to each other. 1) at T2 and the relative
	An explanation of correlation between ur rationale behind the assumptions, is rece [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2:	
	$\frac{CPICH _E_c}{}$ ±0.1 dB	
	$\frac{CITCH - B_c}{I_{or}} \qquad \pm 0.1 \text{ dB}$	
	I_{oc} (1) ±1.0 dB	
	Channel 1 during T1:	
	I_{or} (1) ±0.7 dB	
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
	Channel 1 during T2:	
	I_{or} (1) ±0.7 dB	
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
	Channel 2 during T1 and T2:	
	$\frac{CPICH _E_c}{}$ ±0.1 dB	
	I_{or} ±0.1 dB	
	I_{oc} (2) ±1.0 dB	
	Channel 2 during T1:	
	I_{or} (2) ±0.7 dB	
	I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	Channel 2 during T2:	
	I_{or} (2) ±0.7 dB	
	I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	Assumptions: a) to e): Same as for the one-frequency	test 8.2.2.1.
	f) The absolute uncertainty of lor(1) and lor(3, 4), are uncorrelated to each other. uncertainty of lor(2) and the relative uncurcorrelated to each other.	Similarly, the absolute
	g) The absolute uncertainties for Ior(1) a amount of positive correlation from zero correlated).	
	h) The absolute uncertainties for loc(1) a amount of positive correlation from zero correlated).	
	An explanation of correlation between unrationale behind the assumptions, is rec [24].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
		,
8.2.3 UTRAN to GSM Cell Re-Selection		
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	\hat{I}_{or}/I_{oc} ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB	0.1 dB uncertainty in CPICH_Ec ratio
	RXLEV ±1.0 dB	0.3 dB uncertainty in \hat{I}_{or}/I_{oc}
	$\frac{CPICH _E_c}{I_{or}} = \pm 0.1 \text{ dB}$	based on power meter measurement after the combiner
		0.3 dB uncertainty in loc/RXLEV based on power meter measurement after the combiner
		The absolute error of the AWGN is specified as 1.0 dB.
		The absolute error of the RXLEV is specified as 1.0 dB.
8.2.3.2 Scenario 2: Only UTRA level changed	\hat{I}_{or}/I_{oc} ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB	Same as 8.2.3.1
	$\frac{CPICH _E_c}{I_{or}} \qquad \text{±0.1 dB}$	
8.2.4 FDD/TDD cell re-selection	\hat{I}_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.3 UTRAN Connected Mode Mobility		
8.3.1 FDD/FDD Soft Handover	$\frac{During T1 \text{ and } T2/T3/T4/T5/T6:}{CPICH _E_c}$ $\frac{E}{I_{or}}$ ±0.1 dB	
	I_{or} (1) ±0.7 dB I_{oc} ±1.0 dB	
	Relative delay of paths received from cell 2 with respect to cell 1: ±0.5 chips	
	During T1: Already covered above	
	During T2/T3/T4/T5/T6: I_{or} (2) relative to I_{or} (1) ±0.3 dB	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
	Assumptions: a) The contributing uncertainties for lor(n), cl derived according to ETR 273-1-2 [16], with	hannel power ratio, and loc are
	b) Within each cell, the uncertainty for lor(n), uncorrelated to each other.	, and channel power ratio are
	c) Across different cells, the channel power ramount of positive correlation from zero (und correlated).	
	d) The uncertainty for loc and lor(n) may have correlation from zero (uncorrelated) to one (f	
	e) The absolute uncertainty of lor(1) and the are uncorrelated to each other.	relative uncertainty of lor(2),
8.3.2 FDD/FDD Hard Handover	An explanation of correlation between uncerbehind the assumptions, is recorded in 3GPI	
8.3.2.1 Handover to intra-frequency cell	During T1 and T2 / T3:	
0.3.2.1 Flandover to milital frequency cell	$\frac{CPICH - E_c}{CPICH - E_c} + 0.1 \text{ dB}$	
	±0.1 ab	
	I_{or}	
	I_{or} (1) ±0.7 dB	
	<i>I_{oc}</i> ±1.0 dB	
	During T1: Already covered above	
	-	
	During T2 / T3:	
	I_{or} (2) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for lor(loc are derived according to ETR 273-1-factor of k=2.	
	b) Within each cell, the uncertainty for loratio are uncorrelated to each other.	or(n), and channel power
	c) Across different cells, the channel por have any amount of positive correlation one (fully correlated).	
	d) The uncertainty for loc and lor(n) may positive correlation from zero (uncorrela	
	e) The absolute uncertainty of lor(1) and lor(2), are uncorrelated to each other.	the relative uncertainty of
	An explanation of correlation between uncer behind the assumptions, is recorded in 3GPI	

Clause	Maximum Test System Uncertainty Derivation of Test System Uncertainty	
8.3.2.2 Handover to inter-frequency cell	$\frac{\text{Channel 1 during T1 and T2 / T3:}}{CPICH_E_c} \\ \frac{D_{or}}{I_{or}} \\ = \pm 0.1 \text{ dB}$ $I_{or} \text{ (1)} \\ = \pm 0.7 \text{ dB}$ $I_{oc} \text{ (1)} \\ = \pm 1.0 \text{ dB}$ $\frac{D_{oc} \text{ (2)}}{I_{oc} \text{ (2)}} \\ = \pm 1.0 \text{ dB}$	Oncertainty
	$\frac{\text{Channel 2 during T1:}}{\text{Already covered above}}$ $\frac{\text{Channel 2 during T2 / T3:}}{\frac{CPICH_E_c}{I_{or}}} \text{\pm 0.1 dB}$ $I_{or} \text{(2)} \text{\pm 0.7 dB}$	
	Assumptions: a) The contributing uncertainties for lor(loc are derived according to ETR 273-1-factor of k=2.	2 [16], with a coverage
	b) Within each cell, the uncertainty for lo ratio are uncorrelated to each other.	or(n), and channel power
	c) Across different cells, the channel pow have any amount of positive correlation one (fully correlated).	
	d) The uncertainty for loc(n) and lor(n) n positive correlation from zero (uncorrela	
	e) The absolute uncertainties for lor(1) a amount of positive correlation from zero correlated).	
	f) The absolute uncertainties for loc(1) a amount of positive correlation from zero correlated).	
	An explanation of correlation between uncertibehind the assumptions, is recorded in 3GPI	
8.3.3 FDD/TDD Handover 8.3.4 Inter-system Handover from	TBD TBD	
UTRAN FDD to GSM	100	
8.3.5 Cell Re-selection in CELL_FACH		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.1 One frequency present in the neighbour list	During T1 and T2:	
	$\frac{CPICH _E_c}{I_{or}} \qquad \text{±0.1 dB}$	
	I_{oc} ±1.0 dB	
	$\frac{\text{During T1:}}{I_{or}(2)} \qquad \pm 0.7 \text{ dB}$	
	I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB	
	$\frac{\text{During T2:}}{I_{or} \text{ (1)}} \\ \pm 0.7 \text{ dB}$	
	I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for lor(loc are derived according to ETR 273-1-factor of k=2.	
	b) Within each cell, the uncertainty for loratio are uncorrelated to each other.	or(n), and channel power
	c) The relative uncertainties for lor(n) achave any amount of positive correlation one (fully correlated).	
	d) Across different cells, the channel por have any amount of positive correlation one (fully correlated).	
	e) The uncertainty for loc and lor(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).	
	f) The absolute uncertainty of lor(2) at T uncertainty of lor(1, 3, 4, 5, 6), are uncon Similarly, the absolute uncertainty of lor(2, 3, 4, 5, 6), are uncon uncertainty of lor(2, 3, 4, 5, 6), are uncon	rrelated to each other. (1) at T2 and the relative
	An explanation of correlation between uncert behind the assumptions, is recorded in 3GPI	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.2 Two frequencies present in the neighbour list	Channel 1 during T1 and T2:	Circuit
	$\frac{CPICH _E_c}{I_{or}} \qquad \text{±0.1 dB}$	
	I_{oc} (1) ±1.0 dB	
	$\frac{\text{Channel 1 during T1:}}{I_{or}\text{(1)}} \pm 0.7 \text{ dB}$	
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
	$\frac{\text{Channel 1 during T2:}}{I_{or} \text{(1)}} \\ \pm 0.7 \text{ dB}$	
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
	Channel 2 during T1 and T2:	
	$\frac{CPICH _E_c}{I_{or}} = \pm 0.1 \text{ dB}$	
	I _{oc} (2) ±1.0 dB	
	$\frac{\text{Channel 2 during T1:}}{I_{or}\text{(2)}} \pm 0.7 \text{ dB}$	
	I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	$\frac{\text{Channel 2 during T2:}}{I_{or}\text{(2)}} \\ \pm 0.7 \text{ dB}$	
	I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	Assumptions: a) to e): Same as for the one-frequency	test 8.3.5.1.
	f) The absolute uncertainty of lor(1) and lor(3, 4), are uncorrelated to each other uncertainty of lor(2) and the relative uncorrelated to each other.	Similarly, the absolute
	g) The absolute uncertainties for lor(1) a amount of positive correlation from zero correlated).	
	h) The absolute uncertainties for loc(1) amount of positive correlation from zero correlated).	
	An explanation of correlation between uncer behind the assumptions is recorded in 3GPF	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.3 Cell Re-selection to GSM	\hat{I}_{or}/I_{oc} ±0.3 dB	0.1 dB uncertainty in
		CPICH_Ec ratio
	$I_{oc}/RXLEV = \pm 0.3 \text{ dB}$	<u>^</u> /
	I _{oc} ±1.0 dB	0.3 dB uncertainty in \hat{I}_{or}/I_{oc}
	RXLEV ±1.0 dB	based on power meter
	TALLY II.O GD	measurement after the
	CPICH E	combiner
	$\frac{CPICH _E_c}{I_{or}} = \pm 0.1 \text{ dB}$	0.3 dP upportainty in
	I or	0.3 dB uncertainty in loc/RXLEV based on power
	TBD	meter measurement after the
		combiner
		The absolute error of the
		AWGN is specified as 1.0 dB.
		The absolute error of the
		RXLEV is specified as 1.0 dB.
8.3.6 Cell Re-selection in CELL_PCH		
8.3.6.1 One frequency present in the	Same as 8.2.2.1	Same as 8.2.2.1
neighbour list 8.3.6.2 Two frequencies present in the	Same as 8.2.2.2	Same as 8.2.2.2
neighbour list	Same as 6.2.2.2	Same as 6.2.2.2
8.3.7 Cell Re-selection in URA_PCH		
8.3.7.1 One frequency present in the	Same as 8.2.2.1	Same as 8.2.2.1
neighbour list		
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control		
8.4.1 RRC Re-establishment delay	TBD	
8.4.2 Random Access	Settings.	0.1 dB uncertainty in AICH_Ec
	\hat{I}_{or}/I_{oc} ±0.3 dB	ratio
	<i>I_{oc}</i> ±1.0 dB	÷ /-
		0.3 dB uncertainty in \hat{I}_{or}/I_{oc}
	$AICH_E_c$ ±0.1 dB	based on power meter
	I_{or} ±0.1 dB	measurement after the
		combiner
		Overall error is the sum of the
		\hat{I}_{or}/I_{oc} ratio error and the
		AICH_Ec/lor ratio.
		AICH_EC/IOFIANO.
		The absolute error of the
		AWGN is specified as 1.0 dB
	Measurements:	Power difference:
	Power difference. ± 1dB	Assume symmetric meas error
	Maximum Power: same as 5.5.2	±1.0 dB comprising RSS of: -
		0.7 dB downlink error plus -0.7
		dB meas error.
		Maximum Power:
		Assume asymmetric meas
		error -1.0 dB / 0.7 dB
		comprising RSS of: -0.7 dB
		downlink error plus -0.7 dB meas error, and +0.7 dB for
		upper limit
8.4.3 Transport format combination	TBD	
selection in UE		
8.5 Timing and Signalling Characteristics		

Maximum Test System Uncertainty	Derivation of Test System Uncertainty
I +1.0 dB	0.1 dB uncertainty in
	DPCH_Ec ratio
$DPCH _E_c$ +0.1 dB	0.2 dD
I_{or}	0.3 dB uncertainty in lor1/lor2 based on power meter
	measurement after the
	combiner
	The absolute error of the lor is
	specified as 1.0 dB.
During T1/T2 and T2:	
±0.1 db	
I_{or}	
I_{or} (1) ±0.7 dB	
I_{oc} ±1.0 dB	
Alleady covered above	
During T2 only:	
I_{or} (2) relative to I_{or} (1) ±0.3 dB	
Assumptions:	
b) Within each cell, the uncertainty for lor(n).	
uncorrelated to each other.	
correlated).	, , , ,
are uncorrelated to each other.	
TBD	111 04 302 [24].
TRD	
TDD	
חאו	
TBD	
TBD	
TDD	
חאו	
TBD	
·	•
	$I_{or1}/I_{or2} \qquad \pm 0.3 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} \qquad \pm 0.1 \text{ dB}$ $\frac{During T1/T3 \text{ and } T2:}{I_{or}} \qquad \pm 0.1 \text{ dB}$ $\frac{During T1/T3 \text{ and } T2:}{I_{or}} \qquad \pm 0.1 \text{ dB}$ $I_{or} \qquad 10.1 \text{ dB}$ $I_{$

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.7.1.1 Intra frequency measurements	\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.1
accuracy	I_{oc} ±1.0 dB	
	CPICH F	
	$\frac{CPICH _E_c}{I_{or}} \qquad \pm 0.1 \text{ dB}$ $\hat{I}_{or}/I_{oc} \qquad \pm 0.3 \text{ dB}$	
8.7.1.2 Inter frequency measurement	\hat{I}_{ox}/I_{ox} ±0.3 dB	Same as 8.2.2.2
accuracy	I_{oc} ±1.0 dB	
	I_{oc1}/I_{oc2} ±0.3 dB	
	$\frac{CPICH _E_c}{I} = \pm 0.1 \text{ dB}$	
	I_{or}	
8.7.2 CPICH Ec/Io		0
8.7.2.1 Intra frequency measurements accuracy	\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.1
	I_{oc} ±1.0 dB	
	$\frac{CPICH _E_c}{}$ ±0.1 dB	
8.7.2.2 Inter frequency measurement	I_{or} ±0.1 dB I_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB	Same as 8.2.2.2
accuracy	1 +1 0 dB	
	I /I O S ID	
	I_{oc1}/I_{oc2} ±0.3 dB	
	$\frac{CPICH _E_c}{}$ ±0.1 dB	
	I_{or}	
8.7.3 UTRA Carrier RSSI	I_{or} ±0.1 dB I_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB	0.3 dB uncertainty in \hat{I}_{or}/I_{oc}
	I _{oc} ±1.0 dB	based on power meter
	I_{oc1}/I_{oc2} ±0.3 dB	measurement after the
	001/-002	combiner
		0.3 dB uncertainty in loc1/loc2
		based on power meter measurement after the
		combiner
		The absolute error of the
		AWGN is specified as 1.0 dB
8.7.3A GSM Carrier RSSI	TBD	
8.7.3C UE Transmitted power	Mean power measurement ±0,7 dB	Downlink parameters are
		unimportant.
8.7.4 SFN-CFN observed time difference		
8.7.4.1 Intra frequency measurements	\hat{I}_{or}/I_{oc} ±0.3 dB	0.3 dB uncertainty in \hat{I}_{or}/I_{oc}
accuracy	I_{oc} ±1.0 dB	based on power meter
	Actual SFN-CFN observed time difference:	measurement after the
	±0.5 chips	combiner
		The absolute error of the AWGN is specified as 1.0 dB
8.7.4.2 Inter frequency measurements accuracy	\hat{I}_{or}/I_{oc} ±0.3 dB	0.3 dB uncertainty in \hat{I}_{or}/I_{oc}
accuracy	I_{oc} ±1.0 dB	based on power meter
	Actual SFN-CFN observed time difference:	measurement after the
	±0.5 chips	combiner
		The absolute error of the
		AWGN is specified as 1.0 dB

CR page 18

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.7.5.1 SFN-SFN observed time difference type 1	\hat{I}_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB Actual SFN-SFN observed time difference type 1: ±0.5 chips	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner
8.7.6 UE Rx-Tx time difference	\hat{I}_{or}/I_{oc} ±0.3 dB	AWGN is specified as 1.0 dB 0.3 dB uncertainty in \hat{I}_{ar}/I_{ac}
	I_{oc} ±1.0 dB	based on power meter measurement after the
	Rx-Tx Timing Accuracy ±0.5 chip	combiner The absolute error of the AWGN is specified as 1.0 dB.
8.7.8 P-CCPCH RSCP	TBD	

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.2 Idle Mode Tasks	Test Tolerance
8.2.2 Cell Re-Selection	
8.2.2.1 Scenario 1: Single carrier case	During T1 and T2: +0.60 dB for all Cell 1 and 2 Ec/lor ratios -0.50 dB for all Cell 3, 4,5, 6 Ec/lor ratios +0.03 dB for lor(3, 4, 5, 6)
	<u>During T1:</u> -0.27 dB for lor(1) +0.13 dB for lor(2)
O O O O O O O O O O O O O O O O O O O	During T2: +0.13 dB for lor(1) -0.27 dB for lor(2)
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2: +0.70 dB for all Cell 1 Ec/lor ratios -0.80 dB for all Cell 3 and 4 Ec/lor ratios
	Channel 1 during T1: -0.01 dB for lor(1) -0.01 dB for lor(3, 4) No change for loc(1)
	Channel 1 during T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.80 dB for loc(1)
	Channel 2 during T1 and T2: +0.70 dB for all Cell 2 Ec/lor ratios -0.80 dB for all Cell 5 and 6 Ec/lor ratios
	Channel 2 during T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.80 dB for loc(2)
	Channel 2 during T2: -0.01 dB for lor(2) -0.01 dB for lor(5, 6) No change for loc(2)
8.2.3 UTRAN to GSM Cell Re-Selection 8.2.3.1 Scenario 1: Both UTRA and GSM	^ /
level changed	0.3 dB for \hat{I}_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor
	0.3 dB for loc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level changed	0.3 dB for \hat{I}_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor
0.0.4.EDD/TDD!!	0.3 dB for loc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor 0.3 dB for loc1/loc2
8.3 UTRAN Connected Mode Mobility	

Clause	Test Tolerance
8.3.1 FDD/FDD Soft Handover	During T1 and T2/T3/T4/T5/T6: +0.70 dB for all Cell 1 Ec/lor ratios
	Relative delay: {-147.5 +147.5} chips
	During T1: Already covered above
	During T2/T3/T4/T5/T6: +0.70 dB for all Cell 2 Ec/lor ratios
8.3.2 FDD/FDD Hard Handover	
8.3.2.1 Handover to intra-frequency cell	During T1 and T2 / T3: +0.70 dB for all Cell 1 Ec/lor ratios
	During T1: Already covered above
	During T2 / T3: +0.70 dB for all Cell 2 Ec/lor ratios
8.3.2.2 Handover to inter-frequency cell	Channel 1 during T1 and T2 / T3: +0.80 dB for all Cell 1 Ec/lor ratios
	Channel 2 during T1: Not applicable
	Channel 2 during T2 / T3: +0.80 dB for all Cell 2 Ec/lor ratios
8.3.3 FDD/TDD Handover	TBD
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the neighbour list	During T1 and T2: +0.60 dB for all Cell 1 and 2 Ec/lor ratios -0.50 dB for all Cell 3, 4 ,5, 6 Ec/lor ratios +0.03 dB for lor(3, 4, 5, 6)
	During T1: -0.27 dB for lor(1) +0.13 dB for lor(2)
	During T2: +0.13 dB for lor(1) -0.27 dB for lor(2)

Clause	
+0.60 dB for all Cell 1 Ec/lor ratios	
-0.70 dB for all Cell 3 and 4 Ec/lor ratios Channel 1 during T1: +0.05 dB for lor(1) +0.05 dB for lor(3, 4) No change for loc(1) Channel 1 during T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.60 dB for loc(1) Channel 2 during T1 and T2: +0.60 dB for all Cell 2 Ec/lor ratios -0.70 dB for all Cell 5 and 6 Ec/lor ratios Channel 2 during T1: +0.75 dB for lor(2) -0.05 dB for lor(2) -0.05 dB for loc(2) Channel 2 during T2: +0.05 dB for loc(2) Channel 2 during T2: +0.05 dB for loc(2) Channel 5 during T2: +0.05 dB for loc(2) Channel 7 during T2: +0.05 dB for loc(2) Channel 8 during T2: -0.05 dB for loc(2) Channel 9 during T2: -0.05 dB for loc(2) Channel 9 during T2: -0.05 dB for loc(2) Channel 9 during T2: -0.05 dB for loc(2)	
$\frac{\text{Channel 1 during T1:}}{\text{+0.05 dB for lor(1)}} + 0.05 \text{ dB for lor(3, 4)} \\ \text{No change for loc(1)} \\ \frac{\text{Channel 1 during T2:}}{\text{+0.75 dB for lor(1)}} + 0.05 \text{ dB for lor(1)} \\ -0.05 \text{ dB for lor(1)}} + 0.05 \text{ dB for lor(1)} \\ \frac{\text{Channel 2 during T1 and T2:}}{\text{+0.60 dB for all Cell 2 Ec/lor ratios}} + 0.70 \text{ dB for all Cell 5 and 6 Ec/lor ratios} \\ -0.70 \text{ dB for all Cell 5 and 6 Ec/lor ratios}} + 0.75 \text{ dB for lor(2)} \\ -0.05 \text{ dB for lor(2)}} + 0.05 \text{ dB for lor(5, 6)} \\ -1.60 \text{ dB for lor(2)}} + 0.05 \text{ dB for lor(2)}} + 0.05 \text{ dB for lor(2)}} + 0.05 \text{ dB for lor(5, 6)}} \\ \text{No change for loc(2)}} \\ \frac{0.3 \text{ dB for } \hat{I}_{or} / I_{oc}}{0.1 \text{ dB for CPICH_Ec/lor}} \\ 0.3 \text{ dB for loc/RXLEV}} $	
$\begin{array}{c} +0.05 \ dB \ for \ lor(1) \\ +0.05 \ dB \ for \ lor(3, 4) \\ \text{No change for loc(1)} \\ \hline \\ \frac{\text{Channel 1 during T2:}}{\text{-0.75 dB for lor(1)}} \\ +0.05 \ dB \ for \ lor(1) \\ -0.05 \ dB \ for \ lor(3, 4) \\ -1.60 \ dB \ for \ lor(3, 4) \\ -1.60 \ dB \ for \ loc(1) \\ \hline \\ \frac{\text{Channel 2 during T1 and T2:}}{\text{-0.60 dB for all Cell 2 Ec/lor ratios}} \\ -0.70 \ dB \ for \ all \ Cell 2 \ Ec/lor \ ratios \\ \hline \\ \frac{\text{Channel 2 during T1:}}{\text{-0.75 dB for lor(2)}} \\ +0.05 \ dB \ for \ lor(5, 6) \\ -1.60 \ dB \ for \ lor(5, 6) \\ -1.60 \ dB \ for \ lor(2) \\ \hline \\ \frac{\text{Channel 2 during T2:}}{\text{+0.05 dB for lor(2)}} \\ +0.05 \ dB \ for \ lor(2) \\ \hline \\ \frac{\text{-0.05 dB for lor(2)}}{\text{-0.05 dB for lor(2)}} \\ \hline \\ \frac{\text{-0.05 dB for lor(2)}}{\text{-0.05 dB for lor(2)}} \\ \hline \\ \frac{\text{-0.1 dB for } \widehat{P}_{or} / I_{oc}}{\text{-0.3 dB for } \widehat{CPICH Ec/lor}} \\ \hline \\ \frac{\text{-0.3 dB for loc/RXLEV}}{\text{-0.3 dB for loc/RXLEV}} \\ \hline \end{array}$	
$\begin{array}{c} +0.05 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(1) \\ +0.05 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(3, 4) \\ \mathrm{No} \ \mathrm{change} \ \mathrm{for} \ \mathrm{lor}(3, 4) \\ \mathrm{No} \ \mathrm{change} \ \mathrm{for} \ \mathrm{lor}(1) \\ \hline \\ \frac{\mathrm{Channel} \ 1 \ \mathrm{during} \ \mathrm{T2:}}{+0.75 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(3, 4)} \\ +0.05 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(3, 4) \\ -1.60 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(3, 4) \\ -1.60 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(1) \\ \hline \\ \frac{\mathrm{Channel} \ 2 \ \mathrm{during} \ \mathrm{T1} \ \mathrm{and} \ \mathrm{T2:}}{+0.60 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{all} \ \mathrm{Cell} \ 2 \ \mathrm{Ec/lor} \ \mathrm{ratios}} \\ -0.70 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(2) \ \mathrm{equation} \ \mathrm{T1:} \\ +0.75 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(2) \\ -0.05 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(5, 6) \\ -1.60 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(5, 6) \\ -1.60 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(5, 6) \\ \mathrm{equation} \ \mathrm{T2:} \\ +0.05 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(2) \\ +0.05 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(2) \\ +0.05 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(2) \\ \mathrm{equation} \ \mathrm{T2:} \\ +0.05 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(2) \\ \mathrm{equation} \ \mathrm{T2:} \\ +0.05 \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(2) \\ \mathrm{equation} \ \mathrm{dB} \ \mathrm{dB} \ \mathrm{dB} \ \mathrm{dB} \ \mathrm{for} \ \mathrm{lor}(2) \\ \mathrm{equation} \ \mathrm{dB} \$	
+0.05 dB for lor(3, 4) No change for loc(1) Channel 1 during T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.60 dB for loc(1) Channel 2 during T1 and T2: +0.60 dB for all Cell 2 Ec/lor ratios -0.70 dB for all Cell 5 and 6 Ec/lor ratios Channel 2 during T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.60 dB for loc(2) Channel 2 during T2: +0.05 dB for loc(2) Channel 2 during T2: +0.05 dB for loc(2) Channel 3 during T2: +0.05 dB for loc(2) Channel 5 during T2: -0.05 dB for loc(2) Channel 6 during T2: -0.05 dB for loc(2) Channel 7 during T2: -0.05 dB for loc(2) Channel 8 for loc(2) Channel 9 during T2: -0.05 dB for loc(2) -0.05 dB for loc(2) Channel 9 during T2: -0.05 dB for loc(2) -0.05 dB for loc(2) Channel 9 during T2: -0.05 dB for loc(2)	
No change for loc(1) $\frac{\text{Channel 1 during T2:}}{\text{Channel 1 during T2:}} + 0.75 \text{ dB for lor(1)} \\ -0.05 \text{ dB for lor(3, 4)} \\ -1.60 \text{ dB for loc(1)} \\ \frac{\text{Channel 2 during T1 and T2:}}{\text{Channel 2 during T1 and T2:}} + 0.60 \text{ dB for all Cell 2 Ec/lor ratios} \\ -0.70 \text{ dB for all Cell 5 and 6 Ec/lor ratios} \\ \frac{\text{Channel 2 during T1:}}{\text{Channel 2 during T1:}} + 0.75 \text{ dB for lor(2)} \\ -0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for lor(5, 6)} \\ \text{No change for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{Channel 2 during T2:}} + 0.05 \text{ dB for loc(2)} \\ \text{Channel 2 $	
$\frac{\text{Channel 1 during T2:}}{\text{+0.75 dB for lor(1)}} \\ +0.75 \text{ dB for lor(3, 4)} \\ +1.60 \text{ dB for loc(1)} \\ \frac{\text{Channel 2 during T1 and T2:}}{\text{+0.60 dB for all Cell 2 Ec/lor ratios}} \\ +0.60 \text{ dB for all Cell 5 and 6 Ec/lor ratios} \\ -0.70 \text{ dB for all Cell 5 and 6 Ec/lor ratios} \\ \frac{\text{Channel 2 during T1:}}{\text{+0.75 dB for lor(2)}} \\ +0.05 \text{ dB for lor(5, 6)} \\ -1.60 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{\text{+0.05 dB for lor(5, 6)}} \\ +0.05 \text{ dB for lor(5, 6)} \\ \text{No change for loc(2)} \\ \\ \frac{\text{8.3.5.3 Cell Re-selection to GSM}}{\text{0.3 dB for } \hat{I}_{or}/I_{oc}} \\ \frac{\text{0.1 dB for CPICH_Ec/lor}}{\text{0.3 dB for loc/RXLEV}}$	
$\begin{array}{c} +0.75~\mathrm{dB~for~lor}(1)\\ -0.05~\mathrm{dB~for~lor}(3,4)\\ -1.60~\mathrm{dB~for~loc}(1)\\ \hline \\ \frac{\mathrm{Channel~2~during~T1~and~T2:}}{\mathrm{Channel~2~during~T1~and~6~Ec/lor~ratios}}\\ -0.70~\mathrm{dB~for~all~Cell~5~and~6~Ec/lor~ratios}\\ \hline \\ \frac{\mathrm{Channel~2~during~T1:}}{\mathrm{Channel~2~during~T1:}}\\ +0.75~\mathrm{dB~for~lor}(2)\\ -0.05~\mathrm{dB~for~lor}(5,6)\\ -1.60~\mathrm{dB~for~loc}(2)\\ \hline \\ \frac{\mathrm{Channel~2~during~T2:}}{\mathrm{Channel~2~during~T2:}}\\ +0.05~\mathrm{dB~for~lor}(5,6)\\ \mathrm{No~change~for~loc}(2)\\ \hline \\ \frac{8.3.5.3~\mathrm{Cell~Re-selection~to~GSM}}{\mathrm{O.3~dB~for~CPICH_Ec/lor}}\\ \hline \\ \frac{0.3~\mathrm{dB~for~CPICH_Ec/lor}}{\mathrm{O.3~dB~for~loc/RXLEV}}\\ \hline \end{array}$	
$\begin{array}{c} +0.75~\mathrm{dB~for~lor}(1)\\ -0.05~\mathrm{dB~for~lor}(3,4)\\ -1.60~\mathrm{dB~for~loc}(1)\\ \hline \\ \frac{\mathrm{Channel~2~during~T1~and~T2:}}{\mathrm{Channel~2~during~T1~and~6~Ec/lor~ratios}}\\ -0.70~\mathrm{dB~for~all~Cell~5~and~6~Ec/lor~ratios}\\ \hline \\ \frac{\mathrm{Channel~2~during~T1:}}{\mathrm{Channel~2~during~T1:}}\\ +0.75~\mathrm{dB~for~lor}(2)\\ -0.05~\mathrm{dB~for~lor}(5,6)\\ -1.60~\mathrm{dB~for~loc}(2)\\ \hline \\ \frac{\mathrm{Channel~2~during~T2:}}{\mathrm{Channel~2~during~T2:}}\\ +0.05~\mathrm{dB~for~lor}(5,6)\\ \mathrm{No~change~for~loc}(2)\\ \hline \\ \frac{8.3.5.3~\mathrm{Cell~Re-selection~to~GSM}}{\mathrm{O.3~dB~for~CPICH_Ec/lor}}\\ \hline \\ \frac{0.3~\mathrm{dB~for~CPICH_Ec/lor}}{\mathrm{O.3~dB~for~loc/RXLEV}}\\ \hline \end{array}$	
$\begin{array}{c} -0.05 \text{ dB for lor}(3,4) \\ -1.60 \text{ dB for loc}(1) \\ \hline \\ \frac{\text{Channel 2 during T1 and T2:}}{\text{+0.60 dB for all Cell 2 Ec/lor ratios}} \\ -0.70 \text{ dB for all Cell 5 and 6 Ec/lor ratios} \\ \hline \\ \frac{\text{Channel 2 during T1:}}{\text{-0.75 dB for lor}(2)} \\ -0.05 \text{ dB for lor}(2) \\ -0.05 \text{ dB for loc}(2) \\ \hline \\ \frac{\text{Channel 2 during T2:}}{\text{-0.05 dB for lor}(2)} \\ +0.05 \text{ dB for lor}(5,6) \\ \text{No change for loc}(2) \\ \hline \\ \frac{\text{8.3.5.3 Cell Re-selection to GSM}}{\text{0.3 dB for } \hat{I}_{or}/I_{oc}} \\ \hline \\ \frac{0.1 \text{ dB for CPICH_Ec/lor}}{\text{0.3 dB for loc/RXLEV}} \end{array}$	
$-1.60~\mathrm{dB~for~loc(1)}$ $\frac{\mathrm{Channel~2~during~T1~and~T2:}}{+0.60~\mathrm{dB~for~all~Cell~2~Ec/lor~ratios}}$ $-0.70~\mathrm{dB~for~all~Cell~5~and~6~Ec/lor~ratios}$ $\frac{\mathrm{Channel~2~during~T1:}}{+0.75~\mathrm{dB~for~lor(2)}}$ $-0.05~\mathrm{dB~for~lor(5,~6)}$ $-1.60~\mathrm{dB~for~loc(2)}$ $\frac{\mathrm{Channel~2~during~T2:}}{+0.05~\mathrm{dB~for~lor(2)}}$ $+0.05~\mathrm{dB~for~lor(5,~6)}$ $\mathrm{No~change~for~loc(2)}$ $\frac{\mathrm{0.3~dB~for~}\hat{I}_{or}/I_{oc}}{0.1~\mathrm{dB~for~CPICH_Ec/lor}}$ $\frac{\mathrm{0.3~dB~for~CPICH_Ec/lor}}{0.3~\mathrm{dB~for~loc/RXLEV}}$	
$\frac{\text{Channel 2 during T1 and T2:}}{+0.60 \text{ dB for all Cell 2 Ec/lor ratios}} \\ -0.70 \text{ dB for all Cell 5 and 6 Ec/lor ratios} \\ \frac{\text{Channel 2 during T1:}}{+0.75 \text{ dB for lor(2)}} \\ -0.05 \text{ dB for lor(5, 6)} \\ -1.60 \text{ dB for loc(2)}} \\ \frac{\text{Channel 2 during T2:}}{+0.05 \text{ dB for lor(2)}} \\ +0.05 \text{ dB for lor(5, 6)}} \\ \text{No change for loc(2)}} \\ \frac{8.3.5.3 \text{ Cell Re-selection to GSM}}{0.3 \text{ dB for } \hat{I}_{or}/I_{oc}} \\ \frac{0.1 \text{ dB for CPICH_Ec/lor}}{0.3 \text{ dB for loc/RXLEV}} \\ }$	
$\begin{array}{c} +0.60~\mathrm{dB}~\mathrm{for}~\mathrm{all}~\mathrm{Cell}~\mathrm{2}~\mathrm{Ec/lor}~\mathrm{ratios}\\ -0.70~\mathrm{dB}~\mathrm{for}~\mathrm{all}~\mathrm{Cell}~\mathrm{5}~\mathrm{and}~\mathrm{6}~\mathrm{Ec/lor}~\mathrm{ratios}\\ \hline\\ \frac{\mathrm{Channel}~\mathrm{2}~\mathrm{during}~\mathrm{T1:}}{+0.75~\mathrm{dB}~\mathrm{for}~\mathrm{lor}(\mathrm{2})}\\ -0.05~\mathrm{dB}~\mathrm{for}~\mathrm{lor}(\mathrm{5,}~\mathrm{6})\\ -1.60~\mathrm{dB}~\mathrm{for}~\mathrm{loc}(\mathrm{2})\\ \hline\\ \frac{\mathrm{Channel}~\mathrm{2}~\mathrm{during}~\mathrm{T2:}}{+0.05~\mathrm{dB}~\mathrm{for}~\mathrm{lor}(\mathrm{2})}\\ +0.05~\mathrm{dB}~\mathrm{for}~\mathrm{lor}(\mathrm{5,}~\mathrm{6})\\ \mathrm{No}~\mathrm{change}~\mathrm{for}~\mathrm{loc}(\mathrm{2})\\ \hline\\ \frac{0.3~\mathrm{dB}~\mathrm{for}~\hat{I}_{oc}}{0.1~\mathrm{dB}~\mathrm{for}~\mathrm{CPICH}_{-}\mathrm{Ec/lor}}\\ \hline\\ \frac{0.3~\mathrm{dB}~\mathrm{for}~\mathrm{CPICH}_{-}\mathrm{Ec/lor}}{0.3~\mathrm{dB}~\mathrm{for}~\mathrm{loc/RXLEV}} \end{array}$	
$\begin{array}{c} +0.60~\mathrm{dB}~\mathrm{for}~\mathrm{all}~\mathrm{Cell}~\mathrm{2}~\mathrm{Ec/lor}~\mathrm{ratios}\\ -0.70~\mathrm{dB}~\mathrm{for}~\mathrm{all}~\mathrm{Cell}~\mathrm{5}~\mathrm{and}~\mathrm{6}~\mathrm{Ec/lor}~\mathrm{ratios}\\ \hline\\ \frac{\mathrm{Channel}~\mathrm{2}~\mathrm{during}~\mathrm{T1:}}{+0.75~\mathrm{dB}~\mathrm{for}~\mathrm{lor}(\mathrm{2})}\\ -0.05~\mathrm{dB}~\mathrm{for}~\mathrm{lor}(\mathrm{5,}~\mathrm{6})\\ -1.60~\mathrm{dB}~\mathrm{for}~\mathrm{loc}(\mathrm{2})\\ \hline\\ \frac{\mathrm{Channel}~\mathrm{2}~\mathrm{during}~\mathrm{T2:}}{+0.05~\mathrm{dB}~\mathrm{for}~\mathrm{lor}(\mathrm{2})}\\ +0.05~\mathrm{dB}~\mathrm{for}~\mathrm{lor}(\mathrm{5,}~\mathrm{6})\\ \mathrm{No}~\mathrm{change}~\mathrm{for}~\mathrm{loc}(\mathrm{2})\\ \hline\\ \frac{0.3~\mathrm{dB}~\mathrm{for}~\hat{I}_{oc}}{0.1~\mathrm{dB}~\mathrm{for}~\mathrm{CPICH}_{-}\mathrm{Ec/lor}}\\ \hline\\ \frac{0.3~\mathrm{dB}~\mathrm{for}~\mathrm{CPICH}_{-}\mathrm{Ec/lor}}{0.3~\mathrm{dB}~\mathrm{for}~\mathrm{loc/RXLEV}} \end{array}$	
$-0.70~\mathrm{dB~for~all~Cell~5~and~6~Ec/lor~ratios}$ $\frac{\mathrm{Channel~2~during~T1:}}{+0.75~\mathrm{dB~for~lor(2)}}$ $-0.05~\mathrm{dB~for~lor(5,~6)}$ $-1.60~\mathrm{dB~for~loc(2)}$ $\frac{\mathrm{Channel~2~during~T2:}}{+0.05~\mathrm{dB~for~lor(2)}}$ $+0.05~\mathrm{dB~for~lor(5,~6)}$ No change for loc(2) $\frac{0.3~\mathrm{dB~for~}\hat{I}_{or}/I_{oc}}{0.1~\mathrm{dB~for~CPlCH_Ec/lor}}$ $\frac{0.3~\mathrm{dB~for~CPlCH_Ec/lor}}{0.3~\mathrm{dB~for~loc/RXLEV}}$	
$\frac{\text{Channel 2 during T1:}}{+0.75 \text{ dB for lor(2)}} \\ -0.05 \text{ dB for lor(5, 6)} \\ -1.60 \text{ dB for loc(2)} \\ \frac{\text{Channel 2 during T2:}}{+0.05 \text{ dB for lor(2)}} \\ +0.05 \text{ dB for lor(5, 6)} \\ \text{No change for loc(2)} \\ \frac{0.3 \text{ dB for } \hat{I}_{or} / I_{oc}}{0.1 \text{ dB for CPICH_Ec/lor}} \\ \frac{0.3 \text{ dB for loc/RXLEV}}{0.3 \text{ dB for loc/RXLEV}}$	
$\begin{array}{c} +0.75 \text{ dB for lor(2)} \\ -0.05 \text{ dB for lor(5, 6)} \\ -1.60 \text{ dB for loc(2)} \\ \\ \hline \\ \frac{\text{Channel 2 during T2:}}{+0.05 \text{ dB for lor(2)}} \\ +0.05 \text{ dB for lor(5, 6)} \\ \text{No change for loc(2)} \\ \hline \\ \frac{8.3.5.3 \text{ Cell Re-selection to GSM}}{0.3 \text{ dB for } \hat{I}_{or}/I_{oc}} \\ \hline \\ \frac{0.1 \text{ dB for } \hat{CPICH_Ec/lor}}{0.3 \text{ dB for loc/RXLEV}} \end{array}$	
$\begin{array}{c} +0.75 \text{ dB for lor(2)} \\ -0.05 \text{ dB for lor(5, 6)} \\ -1.60 \text{ dB for loc(2)} \\ \\ \hline \\ \frac{\text{Channel 2 during T2:}}{+0.05 \text{ dB for lor(2)}} \\ +0.05 \text{ dB for lor(5, 6)} \\ \text{No change for loc(2)} \\ \hline \\ \frac{8.3.5.3 \text{ Cell Re-selection to GSM}}{0.3 \text{ dB for } \hat{I}_{or}/I_{oc}} \\ \hline \\ \frac{0.1 \text{ dB for } \hat{CPICH_Ec/lor}}{0.3 \text{ dB for loc/RXLEV}} \end{array}$	
$\begin{array}{c} -0.05 \text{ dB for lor(5, 6)} \\ -1.60 \text{ dB for loc(2)} \\ \hline \\ \frac{\text{Channel 2 during T2:}}{+0.05 \text{ dB for lor(2)}} \\ +0.05 \text{ dB for lor(5, 6)} \\ \text{No change for loc(2)} \\ \hline \\ \frac{8.3.5.3 \text{ Cell Re-selection to GSM}}{0.3 \text{ dB for } \hat{I}_{or}/\hat{I}_{oc}} \\ \hline \\ \frac{0.1 \text{ dB for } \hat{\text{CPICH_Ec/lor}}}{0.3 \text{ dB for loc/RXLEV}} \end{array}$	
$\begin{array}{c} -1.60~\mathrm{dB~for~loc(2)} \\ \hline \\ \frac{\mathrm{Channel~2~during~T2:}}{+0.05~\mathrm{dB~for~lor(2)}} \\ +0.05~\mathrm{dB~for~lor(5,~6)} \\ \mathrm{No~change~for~loc(2)} \\ \hline \\ \frac{8.3.5.3~\mathrm{Cell~Re-selection~to~GSM}}{} \\ \hline \\ \frac{0.3~\mathrm{dB~for~}\hat{I}_{or}/I_{oc}}{0.1~\mathrm{dB~for~CPICH_Ec/lor}} \\ \hline \\ \frac{0.3~\mathrm{dB~for~OPICH_Ec/lor~ode}}{0.3~\mathrm{dB~for~loc/RXLEV}} \end{array}$	
$\frac{\text{Channel 2 during T2:}}{+0.05 \text{ dB for lor(2)}} \\ +0.05 \text{ dB for lor(5, 6)} \\ \text{No change for loc(2)} \\ \\ \frac{0.3 \text{ dB for }}{0.1 \text{ dB for CPICH_Ec/lor}} \\ \frac{0.1 \text{ dB for loc/RXLEV}}{0.3 \text{ dB for loc/RXLEV}}$	
$ \begin{array}{c} +0.05 \text{ dB for lor(2)} \\ +0.05 \text{ dB for lor(5, 6)} \\ \text{No change for loc(2)} \\ \\ \underline{ 8.3.5.3 \text{ Cell Re-selection to GSM}} \\ \underline{ \begin{array}{c} 0.3 \text{ dB for } \\ \underline{\hat{I}_{or}}/I_{oc} \\ \underline{0.1 \text{ dB for CPICH_Ec/lor}} \\ \underline{0.3 \text{ dB for loc/RXLEV}} \\ \end{array} } \end{array} $	
$ \begin{array}{c} +0.05 \text{ dB for lor(2)} \\ +0.05 \text{ dB for lor(5, 6)} \\ \text{No change for loc(2)} \\ \\ \underline{ 8.3.5.3 \text{ Cell Re-selection to GSM}} \\ \underline{ \begin{array}{c} 0.3 \text{ dB for } \\ \underline{\hat{I}_{or}}/I_{oc} \\ \underline{0.1 \text{ dB for CPICH_Ec/lor}} \\ \underline{0.3 \text{ dB for loc/RXLEV}} \\ \end{array} } \end{array} $	
No change for loc(2) $ \frac{\text{8.3.5.3 Cell Re-selection to GSM}}{\underbrace{\begin{array}{c} 0.3 \text{ dB for } \hat{I}_{or} / I_{oc} \\ \underline{0.1 \text{ dB for CPICH_Ec/lor}} \\ \underline{0.3 \text{ dB for loc/RXLEV}} \end{array} } $	
0.3 dB for I_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor 0.3 dB for loc/RXLEV	
0.3 dB for I_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor 0.3 dB for loc/RXLEV	
0.1 dB for CPICH_Ec/lor 0.3 dB for loc/RXLEV	
0.3 dB for loc/RXLEV	
1836 CALL RA-CALACTION IN CELL DOM	
8.3.6.1 One frequency present in the Same as 8.2.2.1	
neighbour list	
8.3.6.2 Two frequencies present in the Same as 8.2.2.2	
neighbour list	
8.3.7 Cell Re-selection in URA_PCH	
8.3.7.1 One frequency present in the Same as 8.2.2.1	
neighbour list	
8.3.7.2 Two frequencies present in the Same as 8.2.2.2	
neighbour list	
8.4 RRC Connection Control 8.4.1 RRC Re-establishment delay TBD	
0.3 dB for \hat{I}_{or}/I_{oc}	
0.1 dB for AICH_Ec/lor	
Measurements:	
Power difference: ± 1dB	
Maximum Power: -1dB / +0.7dB	
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing TBD	
8.6 UE Measurements Procedures	
8.6.1 FDD intra frequency measurements	
8.6.1.1 Event triggered reporting in During T1/T3 and T2:	
AWGN propagation conditions +0.70 dB for all Cell 1 Ec/lor ratios	
During T1/T3 only:	
Already covered above	
During T2 only:	
+0.70 dB for all Cell 2 Ec/lor ratios	
8.6.1.2 Event triggered reporting of TBD	
multiple neighbours in AWGN	
propagation condition	

Clause	Test Tolerance
8.6.1.3 Event triggered reporting of two	TBD Test Tolerance
detectable neighbours in AWGN	IBU
propagation condition	
8.6.1.4 Correct reporting of neighbours in	TBD
fading propagation condition	
8.6.2 FDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in	TBD
AWGN propagation condition	
8.6.2.2 Correct reporting of neighbours in	TBD
Fading propagation condition	
8.6.3 TDD measurements	
8.6.3.1Correct reporting of TDD	TBD
neighbours in AWGN propagation	
condition	TDD
8.7 Measurements Performance	TBD
Requirements 8.7.1 CPICH RSCP	
8.7.2.1 Intra frequency measurements	^ /
accuracy	0.3 dB for \hat{I}_{or}/I_{oc}
accuracy	0.1 dB for CPICH_Ec/lor
	1.0 dB for loc
8.7.2.2 Inter frequency measurement	
accuracy	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
	0.3 dB for loc1/loc2
	1.0 dB for loc
8.7.2 CPICH Ec/lo	
8.7.1.1 Intra frequency measurements	0.3 dB for \hat{I}_{or}/I_{oc}
accuracy	0.1 dB for CPICH_Ec/lor
8.7.1.2 Inter frequency measurement	
accuracy	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.7.3A UTRA Carrier RSSI	0.3 dB for \hat{I}_{or}/I_{oc}
0.700.7	1.0 dB for loc
8.7.3B Transport channel BLER	TBD
8.7.3C UE Transmitted power	0.7 dB for mean power measurement by
8.7.4 SFN-CFN observed time difference	test system
6.7.4 SEN-CEN Observed time difference	0.3 dB for \hat{I}_{or}/I_{oc}
	1.0 dB for loc
	±0.5 chips for the actual SFN-CFN
	observed time difference
8.7.5.1 SFN-SFN observed time	0.3 dB for \hat{I}_{or}/I_{oc}
difference type 1	
	1.0 dB for loc
	+0.5 ching for the actual SEN SEN
	±0.5 chips for the actual SFN-SFN observed time difference type 1
8.7.6 UE Rx-Tx time difference	
on to de to the time difference	0.3 dB for \hat{I}_{or}/I_{oc}
	1.0 dB for loc
	[0.5 chip] for Rx-Tx Timing Accuracy
8.7.7 Observed time difference to GSM	TBD
cell	
8.7.8 P-CCPCH RSCP	TBD

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks		, ,	
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 and T2:	During T1 and T2:	During T1 and T2:
	Cells 1 and 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 3, 4, 5, 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB Ior(3, 4, 5, 6) = -69.73 dBm	-0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for lor(3,	Ec/lor ratio + TT
	101(3, 4, 3, 0) = -03.73 dBill	4, 5, 6)	101(3, 4, 3, 0) + 11
	During T1:	During T1:	During T1:
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	-0.27 dB for lor(1) +0.13 dB for lor(2)	lor(1) + TT lor(2) + TT
	During T2:	During T2:	During T2:
	lor(1) = -59.73 dBm lor(2) = -62.73 dBm	+0.13 dB for lor(1) -0.27 dB for lor(2)	lor(1) + TT lor(2) + TT
8.2.2.2 Scenario 2: Multi carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	-0.80 dB -0.80 dB -0.80 dB -0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 1 during T1: lor(1) = -73.39 dBm lor(3, 4) = -77.39 dBm loc(1) = -70.00 dBm	Channel 1 during T1: -0.01 dB for lor(1) -0.01 dB for lor(3,4) 0.00 dB for loc(1)	Channel 1 during T1: lor(1) + TT lor(3, 4) + TT loc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 1 during T2:	Channel 1 during	Channel 1 during T2:
	lor(1) = -67.75 dBm lor(3, 4) = -74.75 dBm loc(1) = -70.00 dBm	T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.80 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 5 and 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	-0.80 dB -0.80 dB -0.80 dB -0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 2 during T1:	Channel 2 during	Channel 2 during T1:
	lor(2) = -67.75 dBm lor(5, 6) = -74.75 dBm loc(2) = -70.00 dBm	T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.80 dB for loc(2)	lor(2) + TT lor(5, 6) + TT loc(2) + TT
	Channel 2 during T2:	Channel 2 during	Channel 2 during T2:
	lor(2) = -73.39 dBm lor(5, 6) = -77.39 dBm loc(2) = -70.00 dBm	T2: -0.01 dB for lor(2) -0.01 dB for lor(5,6) 0.00 dB for loc(2)	lor(2) + TT lor(5, 6) + TT loc(2) + TT
8.2.3 UTRAN to GSM	TBD		
Cell Re-Selection 8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$ $lor/loc = 0 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 0.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
	$\frac{CPICH _ E_c}{I_{or}} = -10 \text{ dB}$ $Ior/Ioc = -5 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio - TT}$ $\text{lor/loc} = \text{ratio - TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} - \text{TT}$ $\text{lor/loc} = -5.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}$:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$ $Ior/Ioc = 20 \text{ dB}$	0.1 dB for CPICH_E _c I _{or} 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 20.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$ $lor/loc = 20 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 20.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
8.2.4 FDD/TDD cell re- selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24]. During T1 and T2/T3/T4/T5/T6: Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT {-148+TT 148-TT} chips During T1: Already covered above During T2/T3/T4/T5/T6: Ec/lor ratio + TT
8.3.2 FDD/FDD Hard Handover			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121	
8.3.2.1 Handover to intra-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolera are complex, it is not possible to give a simple derivation of the Test Requirement in t document. The analysis is recorded in 3GPP TR 34 902 [24].			
	During T1 and T2 / T3:	During T1 / T2 / T3:	During T1 and T2 / T3:	
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT	
	During T1:	During T1:	During T1:	
	Already covered above	Covered above	Already covered above	
	During T2 / T3:	During T2 / T3:	During T2 / T3:	
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT	
8.3.2.2 Handover to inter-frequency cell		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].	
	Channel 1 during T1 and T2 / T3:	Channel 1 during T1 and T2 / T3:	Channel 1 during T1 and T2 / T3:	
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.80 dB +0.80 dB +0.80 dB +0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT	
	Channel 2 during T1:	Channel 2 during	Channel 2 during T1:	
	Not applicable	T1: Not applicable	Not applicable	
	Channel 2 during T2 / T3: Cell 2:	Channel 2 during T2 / T3:	Channel 2 during T2 / T3:	
	CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.80 dB +0.80 dB +0.80 dB +0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT	
8.3.3 FDD/TDD Handover	TBD			
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD			
8.3.5 Cell Re-selection in CELL_FACH				
8.3.5.1 One frequency present in the neighbour list		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].	

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	During T1 and T2:	During T1 and T2:	During T1 and T2:
	Cells 1 and 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 3, 4, 5, 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.50 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB	Ec/lor ratio + TT
	lor(3, 4, 5, 6) = -69.73 dBm	+0.03 dB for lor(3, 4, 5, 6)	lor(3, 4, 5, 6) + TT
	During T1:	During T1:	During T1:
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	-0.27 dB for lor(1) +0.13 dB for lor(2)	lor(1) + TT lor(2) + TT
	During T2:	During T2:	During T2:
	lor(1) = -59.73 dBm lor(2) = -62.73 dBm	+0.13 dB for lor(1) -0.27 dB for lor(2)	lor(1) + TT lor(2) + TT
8.3.5.2 Two frequencies present in the neighbour list		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].
	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Ec/lor ratio + TT
	Channel 1 during T1: lor(1) = -71.85 dBm lor(3, 4) = -76.85 dBm loc(1) = -70.00 dBm	Channel 1 during T1: +0.05 dB for lor(1) +0.05 dB for lor(3,4) 0.00 dB for loc(1)	Channel 1 during T1: lor(1) + TT lor(3, 4) + TT loc(1) + TT
	Channel 1 during T2: lor(1) = -67.75 dBm lor(3, 4) = -74.75 dBm loc(1) = -70.00 dBm	Channel 1 during T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.60 dB for loc(1)	Channel 1 during T2: lor(1) + TT lor(3, 4) + TT loc(1) + TT

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121
	TS 25.133 Channel 2 during T1 and	(TT)	Channel 2 during T1 and T2:
	T2:	Channel 2 during T1 and T2:	Chainer 2 during 11 and 12.
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 5 and 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Ec/lor ratio + TT
	Channel 2 during T1:	Channel 2 during	Channel 2 during T1:
	lor(2) = -67.75 dBm lor(5, 6) = -74.75 dBm loc(2) = -70.00 dBm	T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.60 dB for loc(2)	lor(2) + TT lor(5, 6) + TT loc(2) + TT
	Channel 2 during T2:	Channel 2 during	Channel 2 during T2:
	lor(2) = -71.85 dBm lor(5, 6) = -76.85 dBm loc(2) = -70.00 dBm	T2: +0.05 dB for lor(2) +0.05 dB for lor(5,6) 0.00 dB for loc(2)	lor(2) + TT lor(5, 6) + TT loc(2) + TT
8.3.5.3 Cell Reselection to GSM	$\frac{\text{During T1:}}{CPICH_E_c} = -10 \text{ dB}$ $\frac{I_{or}}{\text{lor/loc} = 0 \text{ dB}}$ $\frac{\text{loc/RXLEV} = 20}{\text{During T2:}}$	O.1 dB for CPICH_E _c I _{or} O.3 dB for lor/loc O.3 dB for loc/RXLEV	$\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\frac{ \text{or/loc} = \text{ratio} + \text{TT} }{ \text{loc/Rxlev} _{\text{test requirement}}} = \frac{ \text{loc/Rxlev} _{\text{minimum requirement}} + \text{TT}}{ \text{lor/loc} = 0.3 \text{ dB}}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB:}$ $\frac{ \text{loc/RXLEV} = 20.3}{ \text{loc/RXLEV} } = 20.3$
	During 12: $\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $\frac{I_{or}}{I_{or}}$ $\frac{ \text{Dor/loc} = -5 \text{ dB}}{I_{or}}$		$\frac{CPICH_{-}E_{c}}{I_{or}} = \text{ratio - TT}$ $\frac{\text{lor/loc} = \text{ratio - TT}}{}$
	loc/RXLEV = 5	0.3 dB for loc/RXLEV	(loc/Rxlev) _{test requirement} = (loc/Rxlev) _{minimum requirement} - TT
			$\frac{\text{CPICH}_{-}E_{c}}{I_{or}} = -10.1 \text{ dB:}$ $\frac{\text{loc/RXLEV} = 4.7}{I_{or}}$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.6 Cell Re-selection in CELL_PCH			
8.3.6.1 One frequency present in the	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 10.27 \text{ dB}$ $Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ loc unchanged $\text{lor/loc} = 10.57 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} \text{ -9.9 dB:}$
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2 $\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/loc = 2.2 \text{ dB}$ $Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1$	Same as 8.2.2.2 0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Same as 8.2.2.2 Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ loc unchanged $\text{loc ratio unchanged}$ $\text{lor/loc} = 2.5 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} \text{ -9.9 dB:}$
8.3.7 Cell Re-selection in URA_PCH 8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control 8.4.1 RRC Re-	TBD TBD		
establishment delay 8.4.2 Random Access	RACH power difference nominal 3dB ± 2dB UE setting uncertainty	Measurement TT:Power difference ± 1dBMaximum Power-1dB / +0.7dB	Test parameter settings unchanged.Power measurement:Upper limit +TT Lower limit -TT
8.5 Timing and Signalling Characteristics	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.5.1 UE Transmit Timing	TBD	, ,	
8.6 UE Measurements Procedures			
8.6.1 FDD intra			
frequency measurements			
8.6.1.1 Event triggered			uncertainties and the Test Tolerances
reporting in AWGN propagation conditions	document. The analysis is re		ation of the Test Requirement in this 902 [24].
	<u>During T1 / T2 / T3:</u>	<u>During T1 / T2 / T3:</u>	During T1 / T2 / T3:
	Cell 1:		
	CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB	+0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT
	SCH_Ec/lor = -12 dB	+0.70 dB	Ec/lor ratio + TT
	PICH_Ec/lor = -15 dB	+0.70 dB	Ec/lor ratio + TT
	During T1/T3 only:	During T1/T3 only:	During T1/T3 only:
	Already covered above	Covered above	Already covered above
	During T2 only:	During T2 only:	During T2 only:
	Cell 2:		
	CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB	+0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT
	SCH_Ec/lor = -12 dB	+0.70 dB	Ec/lor ratio + TT
	PICH_Ec/lor = -15 dB	+0.70 dB	Ec/lor ratio + TT
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD		
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD		
8.6.1.4 Correct	TBD		
reporting of neighbours in fading propagation condition			
8.6.2 FDD inter	TBD		
frequency measurements			
8.6.2.1 Correct	TBD		
reporting of neighbours in AWGN propagation			
condition 8.6.2.2 Correct	TBD		
reporting of neighbours in Fading propagation condition			
8.6.3 TDD measurements	TBD		
8.6.3.1Correct reporting of TDD	TBD		
neighbours in AWGN propagation condition			
8.7 Measurements Performance	TBD		
Requirements	TDD		
8.7.1 CPICH RSCP	TBD		

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121
	TS 25.133	(TT)	
8.7.1.1 Intra frequency	TBD		
measurements			
accuracy			
8.7.1.2 Inter frequency	TBD		
measurement accuracy			
8.7.2 CPICH Ec/lo			
8.7.1.1 Intra frequency measurements accuracy	see table 8.7.1.1.1.1 andtable 8.7.1.1.2	±1 dB for loc±0.3 dB for lor/loc±0.1dB forEc/lor	Any TT applied to the nominal setting shall fulfil:Test 1 (absolute and relative): lo shall not go below - 69dBm Test 2(absolute and relative): lo shall not go above -50 dBmTest 3 (absolute and relative): lo shall not go below -94 dBm lor/loc + TTTT on top of UE measurement accuracy:Absolute±1.0 dB for loc±0.3 dB for lor/loc ±0.1dB for CPICH_Ec/lor ∑ 1.4dBRelative±0.3 dB for lor/loc (cell1)±0.3 dB for lor/loc (cell2)±0.1dB for CPICH_Ec/lor (cell1)±0.1dB for CPICH_Ec/lor (cell2)∑ 0.8dB
8.7.1.2 Inter frequency measurement accuracy	See table 8.7.1.2.1.1 andtable 8.7.1.2.1.2	±1 dB for loc±0.3 dB for loc1/loc2±0.3 dB for lor/loc±0.1dB forEc/lor	Any TT applied to the nominal setting shall fulfil:Test 1: Io shall not go above -50 dBmTest 2: Io shall not go below -94 dBmIor/loc + TTTT on top of UE measurement accuracy:±0.3 dB for loc1/loc2±0.3 dB for lor/loc (cell1)±0.3 dB for lor/loc (cell2)±0.1dB for CPICH_Ec/lor (cell1)±0.1dB for CPICH_Ec/lor (cell2)∑ 1.1 dB
8.7.2 CPICH Ec/lo			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.1 Intra frequency measurements accuracy	table 8.7.2.1.1.1 and table 8.7.2.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc	Any TT applied to the nominal setting shall fulfil:
		±0.1dB forEc/lor	Test 1(absolute and relative): Io shall not go above -50 dBm
			Test 2 (absolute and relative): Io shall not go below -87dBm
			Test 3 (absolute and relative): Io shall not go below -94 dBm
			CPICH Ec/Io shall stay in the UE accuracy ranges
			Ior/Ioc + TT
			TT on top of UE measurement accuracy:
			Absolute
			±0.3 dB for Ior/Ioc
			±0.1dB for CPICH_Ec/Ior
			∑ 0.4dB
			Relative
			Ioc1=Ioc2
			±0.3 dB for Ior/Ioc (cell1)
			±0.3 dB for Ior/Ioc (cell2)
			±0.1dB for CPICH_Ec/Ior (cell1)
			±0.1dB for CPICH_Ec/Ior (cell2)
			∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.2 Inter frequency measurement accuracy			Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -87 dBm Test 3: Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Ioc1=Ioc2. ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1)
			$\pm 0.1 dB$ for CPICH_Ec/Ior (cell2)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3A UTRA Carrier RSSI	Table 8.7.3.1.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Îor/Ioc	Any TT applied to the nominal setting shall fulfil: Test 1 (absolute): Io shall not go above -50 dBm Test 2 (absolute): Io shall not go below -69 dBm Test 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute tests: Test 1: Max TT= Io _{max} - Io _{nominal} Io _{nominal} = -51.15 dBm
8.7.3B Transport	TBD		
channel BLER 8.7.3C UE Transmitted power	Accuracy upper limit Accuracy lower limit Depends on PUEMAX see table 8.7.3C.2.1	0.7 dB	Formula: Upper accuracy limit + TT Lower accuracy limit - TT Add and subtract TT to all the values in table 8.7.3C.2.1.
8.7.4 SFN-CFN	T able 8.7.4.1.2 and Table	±1.0 dB for loc	Intra and inter frequency case:
observed time difference	8.7.4.2.2	±0.3 dB for lor/loc ±0.5 chips for the actual SFN-CFN observed time difference	Test 1: Io shall not go above -50 dBm Test 2: No restrictions on Io value Test 3: Io shall not go below -94 dBm (Band 1), or below –92 dBm (Band II) or below –91 dBm (Band III) Îor/Ioc + TT
			TT on top of UE measurements accuracy: SFN-CFN observed time difference: 1.0 chips + TT
8.7.5.1 SFN-SFN	T able 8.7.5.1.2	±1.0 dB for loc	Test 1: lo shall not go above -50 dBm
observed time difference type 1		±0.3 dB for lor/loc	Test 2: No restrictions on lo value
		±0.5 chips for the actual SFN-SFN observed time difference	Test 3: lo shall not go below -94 dBm (Band 1), or below -92 dBm (Band II) or below -91 dBm (Band III) Îor/loc + TT
			TT on top of UE measurements accuracy: SFN-SFN observed time difference: 1.0 chips + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	Io -10.9 dB = Ioc, Test 1: Io = -94 dBm Test2: Io = -72dBm Test3: Io = -50dBm Timing Accuracy ± 1.5 chip	1 dB for loc 0.3 dB for lor/loc [0.5 chip for timing accuracy]	Test 1: Io = -92.7 dBm, Ioc = -103.6 dBm Formula: Ioc*(1-TT $_{loc}$ + (Ior/Ioc-TT $_{lor/Ioc}$)) \geq -94 Test 2: unchanged (no critical RF parameters) Test 3: Io = -51.3 dBm, Ioc = -62.2 dBm Formula: Ioc*(1+TT $_{loc}$ + (Ior/Ioc+TT $_{lor/Ioc}$)) \leq -50 Timing accuracy [\pm 2.0] chip Formulas: Upper limit +TT Lower limit -TT
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

Toronto, Canada, July 26"-30", 2004												
CHANGE REQUEST												
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For HELP on using this form, see bottom of this page or look at the pop-up text over the % symbols.												
Proposed change affects: UICC apps# ME X Radio Access Network Core Network												
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Title:	Co	Corrections to Annex F.2.4 and F.4.4										
Source:	Nokia, Anritsu											
Work item code: 第 Date: 第 2004-07-28												
Category: #	F							Release	e: #	REL-5		
	Use	one of F (cor		owing catego	ries:			Use <u>on</u> 2		e following rel SSM Phase 2)		
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				TR 21.900.				Rel- Rel-	5 (R	Release 5) Release 6)		
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Reason for change: # - Annex F.4.4 contains extra empty rows for CPICH RSCP and CPICH Ec/lo measurements.									c/lo			
		- Annex F.2.4 has wrong numbering for CPICH RSCP (8.7.1), CPICH (8.7.2), UTRA Carrier RSSI test case (8.7.3) and GSM Carrier RSSI 8.										
			Annex F.2.4 and F.4.4 contain extra square brackets for 8.7.6 UE Rx-Tx time difference									
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Summary of chang	<i>ge:</i> ж	- The empty rows for CPICH RSCP and CPICH Ec/lo have been removed from Annex F.4.4.										
		- Numbering for CPICH RSCP, CPICH Ec/lo, UTRA Carrier RSSI and GSM Carrrier RSSI has been corrected in Table F.2.4										
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Consequences if	¥	Annex	x F.2.4	and F.4.4 a	re unclear	and n	nav c	ause con	fusion			
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How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.2 Idle Mode Tasks	1001 101010100
8.2.2 Cell Re-Selection	
8.2.2.1 Scenario 1: Single carrier case	During T1 and T2: +0.60 dB for all Cell 1 and 2 Ec/lor ratios -0.50 dB for all Cell 3, 4 ,5, 6 Ec/lor ratios +0.03 dB for lor(3, 4, 5, 6)
	During T1: -0.27 dB for lor(1) +0.13 dB for lor(2)
	During T2: +0.13 dB for lor(1) -0.27 dB for lor(2)
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2: +0.70 dB for all Cell 1 Ec/lor ratios -0.80 dB for all Cell 3 and 4 Ec/lor ratios
	Channel 1 during T1: -0.01 dB for lor(1) -0.01 dB for lor(3, 4) No change for loc(1)
	Channel 1 during T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.80 dB for loc(1)
	Channel 2 during T1 and T2: +0.70 dB for all Cell 2 Ec/lor ratios -0.80 dB for all Cell 5 and 6 Ec/lor ratios
	Channel 2 during T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.80 dB for loc(2)
O O O LITTO AN 4 - COM O - II Da Calla di a	Channel 2 during T2: -0.01 dB for lor(2) -0.01 dB for lor(5, 6) No change for loc(2)
8.2.3 UTRAN to GSM Cell Re-Selection 8.2.3.1 Scenario 1: Both UTRA and GSM level changed	0.3 dB for \hat{I}_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor 0.3 dB for loc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level changed	0.3 dB for \hat{I}_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor
	0.3 dB for loc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor 0.3 dB for loc1/loc2
8.3 UTRAN Connected Mode Mobility	

Test Tolerance
During T1 and T2/T3/T4/T5/T6:
+0.70 dB for all Cell 1 Ec/lor ratios
Relative delay: {-147.5 +147.5} chips
During T1:
Already covered above
<u>During T2/T3/T4/T5/T6:</u>
+0.70 dB for all Cell 2 Ec/lor ratios
During T1 and T2 / T3:
+0.70 dB for all Cell 1 Ec/lor ratios
During T1:
Already covered above
During T2 / T3:
+0.70 dB for all Cell 2 Ec/lor ratios
Channel 1 during T1 and T2 / T3:
+0.80 dB for all Cell 1 Ec/lor ratios
0
Channel 2 during T1:
Not applicable
Object to a local control of the con
Channel 2 during T2 / T3: +0.80 dB for all Cell 2 Ec/lor ratios
TBD
TBD
עסו
-
During T1 and T2:
+0.60 dB for all Cell 1 and 2 Ec/lor ratios
-0.50 dB for all Cell 3, 4,5, 6 Ec/lor ratios
+0.03 dB for lor(3, 4, 5, 6)
+0.00 db for for (0, 4, 0, 0)
During T1:
-0.27 dB for lor(1)
+0.13 dB for lor(2)
(2)
During T2:
+0.13 dB for lor(1)
-0.27 dB for lor(2)
, ,

Clause	Test Tolerance
8.3.5.2 Two frequencies present in the	Channel 1 during T1 and T2:
neighbour list	+0.60 dB for all Cell 1 Ec/lor ratios
Thoigh both hot	-0.70 dB for all Cell 3 and 4 Ec/lor ratios
	Channel 1 during T1:
	+0.05 dB for lor(1)
	+0.05 dB for lor(3, 4)
	No change for loc(1)
	Channel 1 during T2:
	+0.75 dB for lor(1)
	-0.05 dB for lor(3, 4)
	-1.60 dB for loc(1)
	Channel 2 during T4 and T2
	Channel 2 during T1 and T2:
	+0.60 dB for all Cell 2 Ec/lor ratios
	-0.70 dB for all Cell 5 and 6 Ec/lor ratios
	Channel 2 during T1:
	Channel 2 during T1: +0.75 dB for lor(2)
	-0.05 dB for lor(5, 6)
	-1.60 dB for loc(2)
	1.00 ab for foo(2)
	Channel 2 during T2:
	+0.05 dB for lor(2)
	+0.05 dB for lor(5, 6)
	No change for loc(2)
	, ,
8.3.6 Cell Re-selection in CELL_PCH	
8.3.6.1 One frequency present in the	Same as 8.2.2.1
neighbour list	
8.3.6.2 Two frequencies present in the	Same as 8.2.2.2
neighbour list	
8.3.7 Cell Re-selection in URA_PCH	
8.3.7.1 One frequency present in the	Same as 8.2.2.1
neighbour list	0
8.3.7.2 Two frequencies present in the	Same as 8.2.2.2
neighbour list 8.4 RRC Connection Control	
8.4.1 RRC Re-establishment delay	TBD
8.4.2 Random Access	Settings:
0.4.2 Nandom Access	T
	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for AICH Ec/lor
	Measurements:
	Power difference: ± 1dB
	Maximum Power: -1dB / +0.7dB
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD intra frequency measurements	
8.6.1.1 Event triggered reporting in	During T1/T3 and T2:
AWGN propagation conditions	+0.70 dB for all Cell 1 Ec/lor ratios
	During T1/T2 only:
	During T1/T3 only: Already covered above
	Alleady Govered above
	During T2 only:
	+0.70 dB for all Cell 2 Ec/lor ratios
8.6.1.2 Event triggered reporting of	TBD
multiple neighbours in AWGN	
propagation condition	
8.6.1.3 Event triggered reporting of two	TBD
detectable neighbours in AWGN	
propagation condition	
8.6.1.4 Correct reporting of neighbours in	TBD
fading propagation condition	

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Clause	Test Tolerance
8.6.2 FDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD
8.6.3 TDD measurements	
8.6.3.1Correct reporting of TDD	TBD
neighbours in AWGN propagation condition	
8.7 Measurements Performance	TBD
Requirements	
8.7.1 CPICH RSCP	
8.7.12.1 Intra frequency measurements accuracy	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
	1.0 dB for loc
8.7.12.2 Inter frequency measurement	0.3 dB for \hat{I}_{or}/I_{oc}
accuracy	0.1 dB for CPICH_Ec/lor
	0.3 dB for loc1/loc2
	1.0 dB for loc
8.7.2 CPICH Ec/Io	
8.7.24.1 Intra frequency measurements	0.3 dB for \hat{I}_{or}/I_{oc}
accuracy	0.7 00
	0.1 dB for CPICH_Ec/lor
8.7.24.2 Inter frequency measurement accuracy	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.7.3A UTRA Carrier RSSI	0.3 dB for \hat{I}_{or}/I_{oc}
	1.0 dB for loc
8.7.3A GSM Carrier RSSI	<u>TBD</u>
8.7.3B Transport channel BLER	TBD
8.7.3C UE Transmitted power	0.7 dB for mean power measurement by test system
8.7.4 SFN-CFN observed time difference	0.3 dB for \hat{I}_{ar}/I_{ac}
	1.0 dB for loc
	±0.5 chips for the actual SFN-CFN observed time difference
8.7.5.1 SFN-SFN observed time	A /
difference type 1	0.3 dB for I_{or}/I_{oc}
	1.0 dB for loc
	±0.5 chips for the actual SFN-SFN observed time difference type 1
8.7.6 UE Rx-Tx time difference	0.3 dB for \hat{I}_{or}/I_{oc}
	1.0 dB for loc
	[0.5 chip] for Rx-Tx Timing Accuracy
8.7.7 Observed time difference to GSM cell	TBD
8.7.8 P-CCPCH RSCP	TBD
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Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks			
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 and T2:	During T1 and T2:	During T1 and T2:
	Cells 1 and 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 3, 4, 5, 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB Ior(3, 4, 5, 6) = -69.73 dBm	-0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for lor(3,	Ec/lor ratio + TT Ior(3, 4, 5, 6) + TT
		4, 5, 6)	
	During T1:	During T1:	During T1:
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	-0.27 dB for lor(1) +0.13 dB for lor(2)	lor(1) + TT lor(2) + TT
	During T2:	During T2:	During T2:
	lor(1) = -59.73 dBm lor(2) = -62.73 dBm	+0.13 dB for lor(1) -0.27 dB for lor(2)	lor(1) + TT lor(2) + TT
8.2.2.2 Scenario 2: Multi carrier case		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].
	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	-0.80 dB -0.80 dB -0.80 dB -0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 1 during T1: lor(1) = -73.39 dBm lor(3, 4) = -77.39 dBm loc(1) = -70.00 dBm	Channel 1 during T1: -0.01 dB for lor(1) -0.01 dB for lor(3,4) 0.00 dB for loc(1)	Channel 1 during T1: lor(1) + TT lor(3, 4) + TT loc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 1 during T2:	Channel 1 during	Channel 1 during T2:
	lor(1) = -67.75 dBm lor(3, 4) = -74.75 dBm loc(1) = -70.00 dBm	T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.80 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 5 and 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	-0.80 dB -0.80 dB -0.80 dB -0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 2 during T1:	Channel 2 during	Channel 2 during T1:
	lor(2) = -67.75 dBm lor(5, 6) = -74.75 dBm loc(2) = -70.00 dBm	T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.80 dB for loc(2)	lor(2) + TT lor(5, 6) + TT loc(2) + TT
	Channel 2 during T2:	Channel 2 during	Channel 2 during T2:
	lor(2) = -73.39 dBm lor(5, 6) = -77.39 dBm loc(2) = -70.00 dBm	T2: -0.01 dB for lor(2) -0.01 dB for lor(5,6) 0.00 dB for loc(2)	lor(2) + TT lor(5, 6) + TT loc(2) + TT
8.2.3 UTRAN to GSM Cell Re-Selection	TBD		
8.2.3.1 Scenario 1: Both UTRA and GSM	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$	0.1 dB for $\underline{CPICH}_{\underline{E}_{c}}$	Formulas:
level changed	lor/loc = 0 dB	I_{or} 0.3 dB for lor/loc	$\frac{CPICH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	101/10C = 0 dB		lor/loc = ratio + TT
		0.3 dB for loc/RXLEV	(loc/Rxlev) _{test requirement} = (loc/Rxlev) _{minimum requirement} + TT
			lor/loc = 0.3 dB
			$\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}:$
	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$	0.1 dB for $\underline{CPICH}_{\underline{E}_{c}}$	Formulas:
	lor/loc = - 5 dB	I_{or} 0.3 dB for lor/loc	$\frac{CPICH _E_c}{I_{or}} = \text{ratio - TT}$ $\text{lor/loc} = \text{ratio - TT}$
		0.3 dB for loc/RXLEV	(loc/Rxlev) _{test requirement} = (loc/Rxlev) _{minimum requirement} - TT
			lor/loc = -5.3 dB
			$rac{\mathit{CPICH}_E_c}{I_{\mathit{or}}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $Ior/loc = 20 \text{ dB}$	0.1 dB for $CPICH_E_c$ I_{or} 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 20.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $Ior/loc = 20 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $I_{or} = \text{ratio} + \text{TT}$ $(Ioc/Rxlev)_{\text{test requirement}} = (Ioc/Rxlev)_{\text{minimum requirement}} + \text{TT}$ $Ior/Ioc = 20.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
8.2.4 FDD/TDD cell re- selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover		to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24]. During T1 and T2/T3/T4/T5/T6:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB Relative delay of paths received from cell 2 with respect to cell 1 = {-148 148} chips	+0.70 dB +0.70 dB +0.70 dB +0.70 dB 0.5 chips	Ec/lor ratio + TT {-148+TT 148-TT} chips
	During T1:	During T1:	During T1:
	Already covered above	Covered above	Already covered above
	During T2/T3/T4/T5/T6: Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB	During T2/T3/T4/T5/T6: +0.70 dB +0.70 dB +0.70 dB	During T2/T3/T4/T5/T6: Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
8.3.2 FDD/FDD Hard Handover	PICH_Ec/lor = -15 dB	+0.70 dB	Ec/lor ratio + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.2.1 Handover to intra-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 and T2 / T3:	<u>During T1 / T2 / T3:</u>	During T1 and T2 / T3:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT
	During T1:	During T1:	During T1:
	Already covered above	Covered above	Already covered above
	During T2 / T3:	During T2 / T3:	During T2 / T3:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT
8.3.2.2 Handover to inter-frequency cell	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	Channel 1 during T1 and T2 / T3:	Channel 1 during T1 and T2 / T3:	Channel 1 during T1 and T2 / T3:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.80 dB +0.80 dB +0.80 dB +0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 2 during T1:	Channel 2 during T1:	Channel 2 during T1:
	Not applicable	Not applicable	Not applicable
	Channel 2 during T2 / T3:	Channel 2 during T2 / T3:	Channel 2 during T2 / T3:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.80 dB +0.80 dB +0.80 dB +0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
8.3.5 Cell Re-selection in CELL_FACH			
8.3.5.1 One frequency present in the neighbour list		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	During T1 and T2:	During T1 and T2:	During T1 and T2:
	Cells 1 and 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 3, 4, 5, 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.50 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB	Ec/lor ratio + TT
	lor(3, 4, 5, 6) = -69.73 dBm	+0.03 dB for lor(3, 4, 5, 6)	lor(3, 4, 5, 6) + TT
	During T1:	During T1:	During T1:
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	-0.27 dB for lor(1) +0.13 dB for lor(2)	lor(1) + TT lor(2) + TT
	During T2:	During T2:	During T2:
	lor(1) = -59.73 dBm lor(2) = -62.73 dBm	+0.13 dB for lor(1) -0.27 dB for lor(2)	lor(1) + TT lor(2) + TT
8.3.5.2 Two frequencies present in the neighbour list		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this
the heighbodi net	Channel 1 during T1 and	Channel 1 during	Channel 1 during T1 and T2:
	<u>T2:</u>	T1 and T2:	
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Ec/lor ratio + TT
	Channel 1 during T1:	Channel 1 during T1:	Channel 1 during T1:
	lor(1) = -71.85 dBm lor(3, 4) = -76.85 dBm loc(1) = -70.00 dBm	+0.05 dB for lor(1) +0.05 dB for lor(3,4) 0.00 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT
	Channel 1 during T2:	Channel 1 during T2:	Channel 1 during T2:
	lor(1) = -67.75 dBm lor(3, 4) = -74.75 dBm loc(1) = -70.00 dBm	+0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.60 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 5 and 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Ec/lor ratio + TT
	Channel 2 during T1: lor(2) = -67.75 dBm lor(5, 6) = -74.75 dBm loc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.60 dB for loc(2)	Channel 2 during T1: lor(2) + TT lor(5, 6) + TT loc(2) + TT
	Channel 2 during T2: lor(2) = -71.85 dBm lor(5, 6) = -76.85 dBm loc(2) = -70.00 dBm	Channel 2 during T2: +0.05 dB for lor(2) +0.05 dB for lor(5,6) 0.00 dB for loc(2)	Channel 2 during T2: lor(2) + TT lor(5, 6) + TT loc(2) + TT
8.3.6 Cell Re-selection in CELL_PCH			
8.3.6.1 One frequency present in the	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/loc = 10.27 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{Ior/loc} = \text{ratio} + \text{TT}$
	Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1		loc unchanged
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121
	TS 25.133 $CPICH_{-}E_{c} = -10 \text{ dB}$	(TT) 0.1 dB for	Formulas:
	· · · · · · · · · · · · · · · · · · ·	$CPICH_E_c$	1 officials.
	I_{or}	I_{or}	$\underline{CPICH}_{\underline{E}_{c}}$ = ratio + TT
	I - 70 dPm	0.3 dB for lor/loc	$\frac{I_{\text{or}}}{I_{\text{or}}}$
	I_{oc} = - 70 dBm	0.5 dB for for/foc	lor/loc = ratio + TT
	Ior/Ioc = 2.2 dB		loc unchanged
	Note: Parameters are valid for cell 1 at time T2 and cell		loc ratio unchanged
	2 at time T1		lor/loc = 2.5 dB
			$\frac{\mathit{CPICH}_E_c}{I_{\mathit{or}}}$ -9.9 dB:
8.3.7 Cell Re-selection			
in URA_PCH			
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control	TBD		
8.4.1 RRC Re- establishment delay	TBD		
8.4.2 Random Access	RACH power difference nominal 3dB ± 2dB UE setting uncertainty	Measurement TT:Power difference ± 1dBMaximum Power-1dB / +0.7dB	Test parameter settings unchanged.Power measurement:Upper limit +TT Lower limit -TT
8.5 Timing and	TBD		
Signalling Characteristics			
8.5.1 UE Transmit Timing	TBD		
8.6 UE Measurements			
Procedures 8.6.1 FDD intra			
frequency			
measurements			
8.6.1.1 Event triggered reporting in AWGN propagation conditions		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this
propagation conditions	During T1 / T2 / T3:	During T1 / T2 / T3:	902 [24]. During T1 / T2 / T3:
			
	Cell 1:	0.70 ID	
	CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB	+0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT
	SCH_Ec/lor = -12 dB	+0.70 dB +0.70 dB	Ec/lor ratio + 11
	PICH_Ec/lor = -15 dB	+0.70 dB	Ec/lor ratio + TT
	During T1/T3 only :	During T1/T3 only:	During T1/T3 only:
	Daining 1 1/10 only .	Daning 11/10 only.	Bailing 1 1/10 Offig.
	Already covered above	Covered above	Already covered above

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	During T2 only:	During T2 only:	During T2 only:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD		
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD		
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD		
8.6.2 FDD inter frequency measurements	TBD		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD		
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD		
8.6.3 TDD measurements	TBD		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD		
8.7 Measurements Performance Requirements	TBD		
8.7.1 CPICH RSCP	TBD		
8.7.1.1 Intra frequency measurements accuracy	TBD		
8.7.1.2 Inter frequency measurement accuracy 8.7.2 CPICH Ec/lo	TBD		
8.7.1.1 Intra frequency measurements accuracy	see table 8.7.1.1.1 andtable 8.7.1.1.2	±1 dB for loc±0.3 dB for lor/loc±0.1dB forEc/lor	Any TT applied to the nominal setting shall fulfil:Test 1 (absolute and relative): lo shall not go below - 69dBm Test 2(absolute and relative): lo shall not go above -50 dBmTest 3 (absolute and relative): lo shall not go below -94 dBm lor/loc + TTTT on top of UE measurement accuracy:Absolute±1.0 dB for loc±0.3 dB for lor/loc ±0.1dB for CPICH_Ec/lor ∑ 1.4dBRelative±0.3 dB for lor/loc (cell1)±0.3 dB for lor/loc (cell2)±0.1dB for CPICH_Ec/lor (cell1)±0.1dB for CPICH_Ec/lor (cell2)∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.2 Inter frequency measurement accuracy	See table 8.7.1.2.1.1 andtable 8.7.1.2.1.2	±1 dB for loc±0.3 dB for loc1/loc2±0.3 dB for lor/loc±0.1dB forEc/lor	Any TT applied to the nominal setting shall fulfil:Test 1: Io shall not go above -50 dBmTest 2: Io shall not go below -94 dBmIor/loc + TTTT on top of UE measurement accuracy:±0.3 dB for loc1/loc2±0.3 dB for lor/loc (cell1)±0.3 dB for lor/loc (cell2)±0.1dB for CPICH_Ec/lor (cell1)±0.1dB for CPICH_Ec/lor (cell2)∑ 1.1 dB
8.7.2 CPICH Ec/lo			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.1 Intra frequency measurements accuracy	table 8.7.2.1.1.1 and table 8.7.2.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc	Any TT applied to the nominal setting shall fulfil:
		±0.1dB forEc/lor	Test 1(absolute and relative): Io shall not go above -50 dBm
			Test 2 (absolute and relative): Io shall not go below -87dBm
			Test 3 (absolute and relative): Io shall not go below -94 dBm
			CPICH Ec/Io shall stay in the UE accuracy ranges
			Ior/Ioc + TT
			TT on top of UE measurement accuracy:
			Absolute
			±0.3 dB for Ior/Ioc
			±0.1dB for CPICH_Ec/Ior
			∑ 0.4dB
			Relative
			Ioc1=Ioc2
			±0.3 dB for Ior/Ioc (cell1)
			±0.3 dB for Ior/Ioc (cell2)
			±0.1dB for CPICH_Ec/Ior (cell1)
			±0.1dB for CPICH_Ec/Ior (cell2)
			∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.2 Inter frequency measurement accuracy	table 8.7.2.2.2.1 and table 8.7.2.2.2.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB forEc/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -87 dBm Test 3: Io shall not go below -94 dBm
			TT on top of UE measurement accuracy: Ioc1=Ioc2. ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8 dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3A UTRA Carrier RSSI	Table 8.7.3.1.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Îor/Ioc	Any TT applied to the nominal setting shall fulfil: Test 1 (absolute): Io shall not go above -50 dBm Test 2 (absolute): Io shall not go below -69 dBm Test 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute tests: Test 1: Max TT= Io _{max} - Io _{nominal} Io _{nominal} = -51.15 dBm
8.7.3B Transport	TBD		
channel BLER 8.7.3C UE Transmitted power	Accuracy upper limit Accuracy lower limit Depends on PUEMAX see table 8.7.3C.2.1	0.7 dB	Formula: Upper accuracy limit + TT Lower accuracy limit – TT Add and subtract TT to all the values in table 8.7.3C.2.1.
8.7.4 SFN-CFN observed time	T able 8.7.4.1.2 and Table	±1.0 dB for loc	Intra and inter frequency case:
difference	8.7.4.2.2	±0.3 dB for lor/loc	Test 1: lo shall not go above -50 dBm
0.7.5.4. OEN CEN	Table 0.754.2	±0.5 chips for the actual SFN-CFN observed time difference	Test 2: No restrictions on lo value Test 3: lo shall not go below -94 dBm (Band 1), or below -92 dBm (Band II) or below -91 dBm (Band III) Îor/loc + TT TT on top of UE measurements accuracy: SFN-CFN observed time difference: 1.0 chips + TT
8.7.5.1 SFN-SFN observed time	T able 8.7.5.1.2	±1.0 dB for loc	Test 1: lo shall not go above -50 dBm
difference type 1		±0.3 dB for lor/loc ±0.5 chips for the actual SFN-SFN observed time difference	Test 2: No restrictions on lo value Test 3: Io shall not go below -94 dBm (Band 1), or below -92 dBm (Band II) or below -91 dBm (Band III) Îor/loc + TT TT on top of UE measurements accuracy: SFN-SFN observed time difference: 1.0 chips + TT

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121
	TS 25.133	(TT)	
8.7.6 UE Rx-Tx time difference	Io -10.9 dB = Ioc, Test 1: Io = -94 dBm Test2 : Io = -72dBm	1 dB for loc 0.3 dB for lor/loc	Test 1: lo = -92.7 dBm, loc = -103.6 dBm
	Test3 : Io = -50dBm Timing Accuracy ± 1.5 chip	[0.5 chip for timing accuracy]	Formula: loc*(1-TT _{loc} + (lor/loc-TT _{lor/loc})) ≥ -94
			Test 2: unchanged (no critical RF parameters)
			Test 3: lo = -51.3 dBm, loc = -62.2 dBm
			Formula: loc*(1+TT _{loc} + (lor/loc+TT _{lor/loc})) ≤ -50
			Timing accuracy [±2.0] chip
			Formulas:
			Upper limit +TT
			Lower limit –TT
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

3GPP TSG-T WG1 Meeting #24 Toronto, Canada, July 26th-30th, 2004

	CHANGE REQUEST			
*	34.121 CR ⁴¹¹ # rev - #	Current version: 5.4.0		
For <u>HELP</u> on us	sing this form, see bottom of this page or look at the	e pop-up text over the ૠ symbols.		
Proposed change a	nffects: UICC apps第 <mark> ME</mark>	ccess Network Core Network		
Title: ₩	Corrections to UTRA Carrier RSSI test case			
Source: #	Nokia			
Work item code: ₩		<i>Date:</i>		
	F Use one of the following categories: F (correction) A (corresponds to a correction in an earlier release B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Release: # REL-5 Use one of the following releases: 2 (GSM Phase 2) e) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)		
Reason for change:	: # - Annex F.4.4 of approved CR 372 of TP-040 been misimplemented into TS 34.121 v5.4.0.	113 from TP-24 (T1-040825) has		
Summary of change	e: # - Missing text from CR 372 have been added - Test number has been changed for UTRA C 8.7.3) - A new row for GSM Carrier RSSI 8.7.3A has the content is TBD	Carrier RSSI in Table F.4.4 (8.7.3A ->		
Consequences if not approved:	# UTRA Carrier RSSI test case is incomplete			
Clauses affected:	策 Annex F.4.4			
Other specs Affected:	Y N X Other core specifications X Test specifications O&M Specifications			
Other comments:	# This CR is applicable for UE's supporting Rethis CR "normal" view should be used so that added.			

How to create CRs using this form: Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked \(\mathcal{H} \) contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks			
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case	Because the relationships between the Test system uncertainties and the Test Tolerand are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].		
	During T1 and T2:	During T1 and T2:	During T1 and T2:
	Cells 1 and 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 3, 4, 5, 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB Ior(3, 4, 5, 6) = -69.73 dBm	-0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for lor(3,	Ec/lor ratio + TT Ior(3, 4, 5, 6) + TT
		4, 5, 6)	
	During T1:	During T1:	During T1:
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	-0.27 dB for lor(1) +0.13 dB for lor(2)	lor(1) + TT lor(2) + TT
	During T2:	During T2:	During T2:
	lor(1) = -59.73 dBm lor(2) = -62.73 dBm	+0.13 dB for lor(1) -0.27 dB for lor(2)	lor(1) + TT lor(2) + TT
8.2.2.2 Scenario 2: Multi carrier case		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].
	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	-0.80 dB -0.80 dB -0.80 dB -0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 1 during T1: lor(1) = -73.39 dBm lor(3, 4) = -77.39 dBm loc(1) = -70.00 dBm	Channel 1 during T1: -0.01 dB for lor(1) -0.01 dB for lor(3,4) 0.00 dB for loc(1)	Channel 1 during T1: lor(1) + TT lor(3, 4) + TT loc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 1 during T2:	Channel 1 during	Channel 1 during T2:
	lor(1) = -67.75 dBm lor(3, 4) = -74.75 dBm loc(1) = -70.00 dBm	T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.80 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 5 and 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	-0.80 dB -0.80 dB -0.80 dB -0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 2 during T1:	Channel 2 during	Channel 2 during T1:
	lor(2) = -67.75 dBm lor(5, 6) = -74.75 dBm loc(2) = -70.00 dBm	T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.80 dB for loc(2)	lor(2) + TT lor(5, 6) + TT loc(2) + TT
	Channel 2 during T2:	Channel 2 during	Channel 2 during T2:
	lor(2) = -73.39 dBm lor(5, 6) = -77.39 dBm loc(2) = -70.00 dBm	T2: -0.01 dB for lor(2) -0.01 dB for lor(5,6) 0.00 dB for loc(2)	lor(2) + TT lor(5, 6) + TT loc(2) + TT
8.2.3 UTRAN to GSM Cell Re-Selection	TBD		
8.2.3.1 Scenario 1: Both UTRA and GSM	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$	0.1 dB for $\underline{CPICH}_{\underline{E}_{c}}$	Formulas:
level changed	lor/loc = 0 dB	I_{or} 0.3 dB for lor/loc	$\frac{CPICH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	101/10C = 0 dB		lor/loc = ratio + TT
		0.3 dB for loc/RXLEV	(loc/Rxlev) _{test requirement} = (loc/Rxlev) _{minimum requirement} + TT
			lor/loc = 0.3 dB
			$\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}:$
	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$	0.1 dB for $\underline{CPICH}_{\underline{E}_{c}}$	Formulas:
	lor/loc = - 5 dB	I_{or} 0.3 dB for lor/loc	$\frac{CPICH _E_c}{I_{or}} = \text{ratio - TT}$ $\text{lor/loc} = \text{ratio - TT}$
		0.3 dB for loc/RXLEV	(loc/Rxlev) _{test requirement} = (loc/Rxlev) _{minimum requirement} - TT
			lor/loc = -5.3 dB
			$rac{\mathit{CPICH}_E_c}{I_{\mathit{or}}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $Ior/loc = 20 \text{ dB}$	0.1 dB for $CPICH_E_c$ I_{or} 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 20.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $Ior/loc = 20 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $I_{or} = \text{ratio} + \text{TT}$ $(Ioc/Rxlev)_{\text{test requirement}} = (Ioc/Rxlev)_{\text{minimum requirement}} + \text{TT}$ $Ior/Ioc = 20.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
8.2.4 FDD/TDD cell re- selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover		to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24]. During T1 and T2/T3/T4/T5/T6:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB Relative delay of paths received from cell 2 with respect to cell 1 = {-148 148} chips	+0.70 dB +0.70 dB +0.70 dB +0.70 dB 0.5 chips	Ec/lor ratio + TT {-148+TT 148-TT} chips
	During T1:	During T1:	During T1:
	Already covered above	Covered above	Already covered above
	During T2/T3/T4/T5/T6: Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB	During T2/T3/T4/T5/T6: +0.70 dB +0.70 dB +0.70 dB	During T2/T3/T4/T5/T6: Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
8.3.2 FDD/FDD Hard Handover	PICH_Ec/lor = -15 dB	+0.70 dB	Ec/lor ratio + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.2.1 Handover to intra-frequency cell	Because the relationships be	tween the Test system to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].
	During T1 and T2 / T3:	<u>During T1 / T2 / T3:</u>	During T1 and T2 / T3:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT
	During T1:	During T1:	During T1:
	Already covered above	Covered above	Already covered above
	During T2 / T3:	During T2 / T3:	During T2 / T3:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT
8.3.2.2 Handover to inter-frequency cell	· · · · · · · · · · · · · · · · · · ·		
	Channel 1 during T1 and T2 / T3:	Channel 1 during T1 and T2 / T3:	Channel 1 during T1 and T2 / T3:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.80 dB +0.80 dB +0.80 dB +0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 2 during T1:	Channel 2 during T1:	Channel 2 during T1:
	Not applicable	Not applicable	Not applicable
	Channel 2 during T2 / T3:	Channel 2 during T2 / T3:	Channel 2 during T2 / T3:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.80 dB +0.80 dB +0.80 dB +0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
8.3.5 Cell Re-selection in CELL_FACH			
8.3.5.1 One frequency present in the neighbour list		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	During T1 and T2:	During T1 and T2:	During T1 and T2:
	Cells 1 and 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 3, 4, 5, 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.50 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB	Ec/lor ratio + TT
	lor(3, 4, 5, 6) = -69.73 dBm	+0.03 dB for lor(3, 4, 5, 6)	lor(3, 4, 5, 6) + TT
	During T1:	During T1:	During T1:
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	-0.27 dB for lor(1) +0.13 dB for lor(2)	lor(1) + TT lor(2) + TT
	During T2:	During T2:	During T2:
	lor(1) = -59.73 dBm lor(2) = -62.73 dBm	+0.13 dB for lor(1) -0.27 dB for lor(2)	lor(1) + TT lor(2) + TT
8.3.5.2 Two frequencies present in the neighbour list		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this
the heighbodi net	Channel 1 during T1 and	Channel 1 during	Channel 1 during T1 and T2:
	<u>T2:</u>	T1 and T2:	
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Ec/lor ratio + TT
	Channel 1 during T1:	Channel 1 during T1:	Channel 1 during T1:
	lor(1) = -71.85 dBm lor(3, 4) = -76.85 dBm loc(1) = -70.00 dBm	+0.05 dB for lor(1) +0.05 dB for lor(3,4) 0.00 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT
	Channel 1 during T2:	Channel 1 during T2:	Channel 1 during T2:
	lor(1) = -67.75 dBm lor(3, 4) = -74.75 dBm loc(1) = -70.00 dBm	+0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.60 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 5 and 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Ec/lor ratio + TT
	Channel 2 during T1: lor(2) = -67.75 dBm lor(5, 6) = -74.75 dBm loc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.60 dB for loc(2)	Channel 2 during T1: lor(2) + TT lor(5, 6) + TT loc(2) + TT
	Channel 2 during T2: lor(2) = -71.85 dBm lor(5, 6) = -76.85 dBm loc(2) = -70.00 dBm	Channel 2 during T2: +0.05 dB for lor(2) +0.05 dB for lor(5,6) 0.00 dB for loc(2)	Channel 2 during T2: lor(2) + TT lor(5, 6) + TT loc(2) + TT
8.3.6 Cell Re-selection in CELL_PCH			
8.3.6.1 One frequency present in the	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/loc = 10.27 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{Ior/loc} = \text{ratio} + \text{TT}$
	Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1		loc unchanged
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$CPICH_{-}E_{c} = -10 \text{ dB}$	0.1 dB for	Formulas:
	$\frac{I_{or}}{I_{or}} = -10 \text{ dB}$	$CPICH_E_c$	
	Of Control	I_{or}	$\frac{CPICH_{-}E_{c}}{}$ = ratio + TT
	I_{oc} = - 70 dBm	0.3 dB for lor/loc	I_{or} lor/loc = ratio + TT
	lor/loc = 2.2 dB		loc unchanged
	Note: Parameters are valid for cell 1 at time T2 and cell		loc ratio unchanged
	2 at time T1		lor/loc = 2.5 dB
			$rac{\mathit{CPICH}_{-}E_{c}}{I_{\mathit{or}}}$ -9.9 dB:
8.3.7 Cell Re-selection			
in URA_PCH 8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control	TBD		
8.4.1 RRC Re- establishment delay	TBD		
8.4.2 Random Access	RACH power difference nominal 3dB ± 2dB UE setting uncertainty	Measurement TT:Power difference ± 1dBMaximum Power-1dB / +0.7dB	Test parameter settings unchanged.Power measurement:Upper limit +TT Lower limit -TT
8.5 Timing and Signalling	TBD		
Characteristics 8.5.1 UE Transmit	TBD		
Timing			
8.6 UE Measurements Procedures			
8.6.1 FDD intra			
frequency			
measurements 8.6.1.1 Event triggered	Because the relationships he	tween the Test system	uncertainties and the Test Tolerances
reporting in AWGN propagation conditions		e to give a simple deriva	ation of the Test Requirement in this 902 [24].
	<u>During T1 / T2 / T3:</u>	<u>During T1 / T2 / T3:</u>	During T1 / T2 / T3:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	During T1/T3 only :	During T1/T3 only:	During T1/T3 only:
	Already covered above	Covered above	Already covered above

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	During T2 only:	During T2 only:	During T2 only:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD		
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD		
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD		
8.6.2 FDD inter frequency measurements	TBD		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD		
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD		
8.6.3 TDD measurements	TBD		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD		
8.7 Measurements Performance Requirements	TBD		
8.7.1 CPICH RSCP	TBD		
8.7.1.1 Intra frequency measurements accuracy	TBD		
8.7.1.2 Inter frequency measurement accuracy 8.7.2 CPICH Ec/lo	TBD		
8.7.1.1 Intra frequency measurements accuracy	see table 8.7.1.1.1 andtable 8.7.1.1.2	±1 dB for loc±0.3 dB for lor/loc±0.1dB forEc/lor	Any TT applied to the nominal setting shall fulfil:Test 1 (absolute and relative): lo shall not go below - 69dBm Test 2(absolute and relative): lo shall not go above -50 dBmTest 3 (absolute and relative): lo shall not go below -94 dBm lor/loc + TTTT on top of UE measurement accuracy:Absolute±1.0 dB for loc±0.3 dB for lor/loc ±0.1dB for CPICH_Ec/lor ∑ 1.4dBRelative±0.3 dB for lor/loc (cell1)±0.3 dB for lor/loc (cell2)±0.1dB for CPICH_Ec/lor (cell1)±0.1dB for CPICH_Ec/lor (cell2)∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance	Test Requirement in TS 34.121
8.7.1.2 Inter frequency measurement accuracy	See table 8.7.1.2.1.1 andtable 8.7.1.2.1.2	±1 dB for loc±0.3 dB for loc1/loc2±0.3 dB for lor/loc±0.1dB forEc/lor	Any TT applied to the nominal setting shall fulfil:Test 1: Io shall not go above -50 dBmTest 2: Io shall not go below -94 dBmlor/loc + TTTT on top of UE measurement accuracy:±0.3 dB for loc1/loc2±0.3 dB for lor/loc (cell1)±0.3 dB for lor/loc (cell2)±0.1dB for CPICH_Ec/lor (cell1)±0.1dB for CPICH_Ec/lor (cell2)∑ 1.1 dB
8.7.2 CPICH Ec/lo			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.1 Intra frequency measurements accuracy	table 8.7.2.1.1.1 and table 8.7.2.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc	Any TT applied to the nominal setting shall fulfil:
		±0.1dB forEc/lor	Test 1(absolute and relative): Io shall not go above -50 dBm
			Test 2 (absolute and relative): Io shall not go below -87dBm
			Test 3 (absolute and relative): Io shall not go below -94 dBm
			CPICH Ec/Io shall stay in the UE accuracy ranges
			Ior/Ioc + TT
			TT on top of UE measurement accuracy:
			Absolute
			±0.3 dB for Ior/Ioc
			±0.1dB for CPICH_Ec/Ior
			∑ 0.4dB
			Relative
			Ioc1=Ioc2
			±0.3 dB for Ior/Ioc (cell1)
			±0.3 dB for Ior/Ioc (cell2)
			±0.1dB for CPICH_Ec/Ior (cell1)
			±0.1dB for CPICH_Ec/Ior (cell2)
			∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2.2 Inter frequency measurement accuracy	TS 25.133 table 8.7.2.2.2.1 and table 8.7.2.2.2.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB forEc/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -87 dBm Test 3: Io shall not go below -94 dBm
			Ior/Ioc + TT
			TT on top of UE measurement accuracy: Ioc1=Ioc2. ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3A UTRA Carrier RSSI	Test Parameters in TS 25.133 Table 8.7.3.1.2	Test Tolerance (TT) ±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Îor/Ioc	Any TT applied to the nominal setting shall fulfil: Test 1 (absolute): Io shall not go above -50 dBm Test 2 (absolute): Io shall not go below -69 dBm Test 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute tests: Test 1:
			$\begin{aligned} \text{Max TT} &= \text{Io}_{\text{max}} - \text{Io}_{\text{nominal}} \\ \text{Io}_{\text{nominal}} &= -51.15 \text{ dBm} \end{aligned}$
			$ \frac{Io_{max} = Ioc_{max} + Ior_{max} = (-53.5 \text{ dBm} + 1\text{dB}) + (-52.5 \text{ dBm} - 1.45 \text{ dB} + 0.3 \text{ dB}) = -50.0 \text{ dBm}}{50.0 \text{ dBm}} $ $ => Max TT = 1.15 \text{ dB} $ $ \underline{Min TT} = Io_{min} - Io $
			$ \underline{Io_{min} = Ioc_{min} + Ior_{min} = (-53.5)} $ $ \underline{dBm - 1 dB} + (-54.5 dBm - 1.45 dB - 0.3 dB) = -52.3 $ $ \underline{dBm} $
			=> Min TT = -1.15 dB Test 2:
			$\frac{\text{Max TT} = \text{Io}_{\text{max}} - \text{Io}_{\text{nominal}}}{\text{Io}_{\text{nominal}} = -67.9 \text{ dBm}}$ $\frac{\text{Io}_{\text{max}} = \text{Ioc}_{\text{max}} + \text{Ior}_{\text{max}} = (-69.27 \text{ dBm} + 1 \text{dB}) + (-68.27 \text{ dBm} - 4.4 \text{ dB} + 0.3 \text{ dB}) = -66.8 \text{ dBm}}$
			=> Max TT = 1.1 dB
			$\begin{aligned} \underline{Min\ TT} &= \underline{Io_{min}} - \underline{Io} \\ \underline{Io_{min}} &= \underline{Ioc_{min}} + \underline{Ior_{min}} = (-\\ 69.27\ dBm - 1\ dB) + (-70.27\\ \underline{dBm} - 4.4\ dB - 0.3\ dB) = -\\ \underline{69.0\ dBm} \end{aligned}$
			=> Min TT = -1.1 dB
			Test 3 (Band I):
			$\underline{\text{Max TT} = \text{Io}_{\text{max}} - \text{Io}_{\text{nominal}}}$
		2000	$ \underline{Io_{\text{max}} = Ioc_{\text{max}} + Ior_{\text{max}} + No = } $ $ \underline{Io_{\text{max}} = Ioc_{\text{max}} + Ior_{\text{max}} + No = } $ $ \underline{(-93.46 \text{ dBm} + 1 \text{ dB}) + (-92.46 \text{ dBm} - 9.24 \text{ dB} + 0.3)} $ $ \underline{dB}) + -99 \underline{dBm} = -91.2 $ $ \longrightarrow Mov TT = 1.8 \underline{dP} $
		3GPP	\Rightarrow Max TT = 1.8 dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.3A GSM Carrier RSSI	TBD		
8.7.3B Transport channel BLER	TBD		
8.7.3C UE Transmitted power	Accuracy upper limit Accuracy lower limit Depends on PUEMAX see table 8.7.3C.2.1	0.7 dB	Formula: Upper accuracy limit + TT Lower accuracy limit - TT Add and subtract TT to all the values in table 8.7.3C.2.1.
8.7.4 SFN-CFN observed time	T able 8.7.4.1.2 and Table 8.7.4.2.2	±1.0 dB for loc	Intra and inter frequency case:
difference		±0.3 dB for lor/loc	Test 1: lo shall not go above -50 dBm
		±0.5 chips for the actual SFN-CFN	Test 2: No restrictions on lo value
		observed time difference	Test 3: Io shall not go below -94 dBm (Band 1), or below -92 dBm (Band II) or below -91 dBm (Band III)
			Îor/loc + TT
			TT on top of UE measurements accuracy: SFN-CFN observed time difference: 1.0 chips + TT
8.7.5.1 SFN-SFN observed time	T able 8.7.5.1.2	±1.0 dB for loc	Test 1: lo shall not go above -50 dBm
difference type 1		±0.3 dB for lor/loc	Test 2: No restrictions on lo value
		±0.5 chips for the actual SFN-SFN observed time difference	Test 3: lo shall not go below -94 dBm (Band 1), or below -92 dBm (Band II) or below -91 dBm (Band III) Îor/loc + TT
			TT on top of UE measurements accuracy: SFN-SFN observed time difference: 1.0 chips + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	Io -10.9 dB = loc, Test 1: lo = -94 dBm Test2: lo = -72dBm Test3: lo = -50dBm Timing Accuracy ± 1.5 chip	1 dB for loc 0.3 dB for lor/loc [0.5 chip for timing accuracy]	Test 1: lo = -92.7 dBm, loc = -103.6 dBm Formula: loc*(1-TT $_{loc}$ + (lor/loc-TT $_{lor/loc}$)) \geq -94 Test 2: unchanged (no critical RF parameters) Test 3: lo = -51.3 dBm, loc = -62.2 dBm Formula: loc*(1+TT $_{loc}$ + (lor/loc+TT $_{lor/loc}$)) \leq -50 Timing accuracy [\pm 2.0] chip Formulas: Upper limit +TT
			Lower limit –TT
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

3GPP TSG-T1 Meeting #24

Tdoc **#** *T1-041326*

Toronto, Canada, 26 - 30 July 2004

CHANGE REQUEST			
*	34.121 CR ⁴¹²	urrent version: 5.4.0	
For <u>HELP</u> on	using this form, see bottom of this page or look at the p	op-up text over the % symbols.	
Proposed change	e affects: UICC apps第 <mark> ME X</mark> Radio Acce	ess Network Core Network	
Title:	策 Resolution of downlink code conflict between OCNS DPC	H and S-CCPCH	
Source:	₩ NEC		
Work item code:	ж <mark>ты</mark>	Date: 第 27/07/2004	
Category:		Release: # Rel-5 Use one of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)	
Reason for chang	 ge: # - Resolution of downlink code conflict between RF testing. - Only the system configuration defined in TS 3 RF testing. - The WCDMA interfere is on another carrier. 		
Summary of chai	- The S-CCPCH is moved from code 1 to code - Removed information about system configura 6.1.1, 6.1.2 and 6.1.3 Removed information abiout the WCDMA inte	tions from TS 34.108 sections	
Consequences if not approved:	B Downlink code collision can fail good UE.		
Clauses affected	∷		
Other specs affected:	Y N X Other core specifications	108	
Other comments	: # This CR is applicable for UE's supporting R'99	or later.	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked \(\mathcal{H} \) contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

E.6 Downlink Physical Channels Code Allocation (This clause is informative)

Table E.6.1 shows the downlink code allocation. The numbers in the code columns indicate the code number with the respective spreading factor (SF). The Note column refers to specifications where the code allocation is defined. Only the system configuration according to TS 34.108 section 6.10b is used for RF testing. The codes used for the WCDMA interferer as defined in Table E.4.1 are not included in the table below because the WCDMA interferer is on another carrier. The S-CCPCH has been moved from code 1 to code 2 (SF=64) in order to resolve the code conflict with OCNS DPCH.

Note: There is a code collision between S CCPCH on SF=64 using code 1 and OCNS DPCH on SF=128 using code 2 which needs to be resolved.

Table E.6.1: Downlink Physical Channels Code Allocation for RF testing

Code with	Code with	Code with	Note
SF=256	SF=128	SF=64	T0 05 040 T0 04400 044 04404 540
0: P-CPICH	0: -		TS 25.213; TS 34.108: 6.1.4; 34.121: E.4.2
1: P-CCPCH		0: -	TS 25.213 ; 34.121: E.4.2
2: PICH	- 1: -		TS 34.108: 6.1.0b , 6.1.1, 6.1.2, 6.1.3 (SIB5)
3: AICH			TS 34.108: 6.1.0b , 6.1.1, 6.1.2, 6.1.3 (SIB5)
4: - 5: -	2: OCNS DPCH		OCNS: TS34.121: <u>Table</u> E.3.6 S-CCPCH: TS 34.108: 6.1.0b, 6.1.1, 6.1.2, 6.1.3
6: -		1: S-CCPCH -	, , ,
7: -	3: -		
8: -	4. C CCDCU		S-CCPCH for RF testing TS 34.108: 7.3 (SIB5)
9: -	4: - S-CCPCH	2: S-CCPCH	4: TS 34.108: 6.1.1, 6.1.2 (PCH)
10: -	5: S-CCPCH -	2. S-CCPCH	2: TS 34.108: 6.1.3 (FACH)
11: -	5. 3-66F6П _		5: TS 34.108: 6.1.2 (CTCH)
12: -	6: S-CCPCH-		TS 34.108: 6.1.3 (PCH)
13: -	0. 0 001 011	3: -	10 0 1.100. 0.1.0 (1 011)
14: -	7: -	0.	
15: -	•		
16: PICH			WCDMA interferer: TS 34.121: E.4.2
interf.	8: -		
17: -		4: -	
18: -	9: -		
19: -			
20: -	10: -		
22: -		5: -	
23: -	11: OCNS DPCH		OCNS: TS 34.121: E.3.6
24-31: -	12-15: -	6-7: -	
32: -		0 1.	
33: -	16: -		
34: -	47. 00N0 BB0H	8: -	0000 7004404 500
35: -	17: OCNS DPCH		OCNS: TS 34.121: E.3.6
36-43: -	18-21: -	9-10: -	
44: -	22: -		
45: -	7 22	11: -	
46: -	23: OCNS DPCH] '''	OCNS: TS 34.121: E.3.6
47: -	23. OONS DECH		OONO. 10 04.121. E.J.0
48-59: -	24-29: -	12-14: -	
60: -	30: -		
61: -	00.	15: -	
62: -	31: OCNS DPCH		OCNS: TS 34.121: E.3.6
63: -		1.2.12	
64-75: -	32-37: -	16-18: -	
76: - 77: -	38: OCNS DPCH	19: -	OCNS: TS 34.121: E.3.6
78: -	39: -	1	
, 0.	55.	1	

Code with SF=256	Code with SF=128	Code with SF=64	Note
79: -			
80-91: -	40-45: -	20-22: -	
92: -	46: -		
93: -	10.	23: -	
94: -	47: OCNS DPCH		OCNS: TS 34.121: E.3.6
95: -		04.00	
96-107: -	48-53: -	24-26: -	
108: - 109: -	54: -		
110: -		27: -	
111: -	55: OCNS DPCH		OCNS: TS 34.121: E.3.6
112-123: -	56-61: -	28-30: -	
124: -			OONO: TO 04 404: F 0.0
125: -	62: OCNS DPCH	31: -	OCNS: TS 34.121: E.3.6
126: -	63: -	31	
127: -			
128-135: -	64-67: -	32-33: -	
136: -	68: -		
137: -		34: -	
138: -	69: OCNS DPCH		OCNS: TS 34.121: E.3.6
139: - 140-155: -	70-77: -	35-38: -	
156: -	70-77	30-30	
157: -	78: OCNS DPCH		OCNS: TS 34.121: E.3.6
158: -		39: -	
159: -	79: -		
160-167: -	80-83: -	40-41: -	
168: -	84: -		
169: -	84: -	42: -	
170: -	85: OCNS DPCH	42	OCNS: TS 34.121: E.3.6
171: -			00110. 10 04.121. E.0.0
172-187: -	86-93: -	43-46: -	
188: -	94: OCNS DPCH		OCNS: TS 34.121: E.3.6
189: -		47: -	
190: -	95: -		
191: - 192: DCH SRB			
193: -	96: DCH 12.2		TS 34.108: 9.2.1 (DCH SRB and 12.2);
194: -		48: -	DCH 64: SF32-Code24,
195: -	97: -		DCH 144: SF16-Code12, DCH 384: SF8-Code6
196-223: -	98-111: -	49-55: -	- DOLL 304. 3F0-00060
224: -	112: -		
225: -	114	56: -	
226: -	113: OCNS DPCH	30.	OCNS: TS 34.121: E.3.6
227: -		=====	
228-235: -	114-117: -	57-58: -	
236: -	118: -		
237: - 238: -		59: -	
239: -	119: OCNS DPCH		OCNS: TS 34.121: E.3.6
240-59: -	120-123: -	60-61: -	
248: -			
249: -	124: -	63.	
250: -	125: OCNS DPCH	62: -	OCNS: TS 34.121: E.3.6
251: -			OONO. 10 04.121. E.J.U
252-255: -	126-127: -	63: -	

3GPP TSG-T1 Meeting #24 Toront ,Canada, 26 July – 30 July

Tdoc **#** *T1-041328*

			C	HAN	GE	REQ	UE	ST					•	CR-Form-v7
*	34	.121	CR 4	113	3	∉ rev	-	¥	Currer	nt vers	sion:	5.4.	0	ж
For <u>HELP</u> on	using	this for	m, see	bottom c	of this p	page or	look	at the	э рор-и	ıp text	t over	the ₩ s	sym	bols.
Proposed change	e affec	<i>ts:</i> (JICC ap	ps#]	MEX	<mark>(</mark> Rad	dio A	ccess N	Netwo	rk	Core	Net	work
Title:	¥ Add	ition of	the info	rmation	eleme	nt for m	nonito	r cell	s in An	nex I				
Source:	∺ Anri	tsu												
Work item code:	¥								Dá	ate: ೫	27/	07/2004	1	
Category:	Deta	F (corr A (corr B (add C (fund D (edit ailed exp	rection) responds dition of f ctional m torial mo blanation	ving cates s to a correction of the a correction of the a correction.	rection in the second s	ature)			2 R R R R R R	<u>one</u> of	the for (GSN) (Relea (Relea (Relea (Relea (Relea	I-5 Illowing I A Phase Pase 199 Pase 199 Pase 4) Pase 5) Pase 6)	2) 6) 7) 8)	ases:
Reason for chang	ge: Ж		ion of th	as prese ne requir										
Summary of chan	nge: ૠ	1) The 2) The	e monito e except	r cell inf	ormati system	on is lin	nked t	o An	nex I.			panded	mo	nitor list
Consequences if not approved:	*			of the revill not be					rmation	is rei	maine	d ambi	guo	us, and
Clauses affected:	: ¥	8.3.4,8	8.4.1.1,	8.4.1.2,8	3.6.1.1,	8.6.1.2	,8.6.1	.3,8.	6.1.4,8	.6.2.1	,8.6.2	.2, Ann	ex l	
Other specs affected:	ж	Y N X X	Test s	core spe pecificati Specifica	ions	ons	¥							
Other comments:	.	This	CR app	lies for F	Rel-99	and late	er rel	eases	3.					

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked % contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.4 Inter-system Handover from UTRAN FDD to GSM

8.3.4.1 Definition and applicability

The UTRAN to GSM cell handover delay is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to the combined FDD and GSM UE.

8.3.4.2 Minimum requirement

The hard handover delay shall be less than indicated in Table 8.3.4.1. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of 95 %.

The hard handover delay as listed in table 8.3.4.1 equals the RRC procedure delay plus the interruption time listed in table 8.3.4.2.

Table 8.3.4.1: FDD/GSM handover - handover delay

UE synchronisation status	handover delay [ms]
The UE has synchronised to the GSM cell before the	90
HANDOVER FROM UTRAN COMMAND is received	
The UE has not synchronised to the GSM cell before	190
the HANDOVER FROM UTRAN COMMAND is received	

Table 8.3.4.2: FDD/GSM handover - interruption time

Interruption time [ms]
40
140

The normative reference for this requirement is TS 25.133 [2] clauses 5.4.2 and A.5.4.

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

[Editor's Note: Annex G.2 must be specified also for GSM; for instance as a reference to TS 51.010-1 clause A1.2]

The test parameters are given in table 8.3.4.3, 8.3.4.4 and 8.3.4.5 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used.. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

The UTRAN shall send a HANDOVER FROM UTRAN COMMAND with activation time "now". In the GSM Handover command contained in that message, the IE starting time shall not be included. The RRC HANDOVER

FROM UTRAN COMMAND message shall be sent to the UE. The start of T3 is defined as the end of the last TTI, containing the HO command.

The requirements are also applicable for a UE not requiring compressed mode, in which case no compressed mode pattern should be sent for the parameters specified in table 8.3.4.3.

Table 8.3.4.3: General test parameters for Correct reporting of GSM neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 34.121 clause C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns			Only applicable for UE requiring compressed mode patterns
- GSM carrier RSSI measurement		DL Compressed mode reference pattern 2 in Set 2	As specified in TS 34.121 [1] clause C.5, table C.5.2
- GSM Initial BSIC identification		Pattern 2	As specified in clause TS 25.133 [2] 8.1.2.5.2.1 table 8.7.
- GSM BSIC re- confirmation		Pattern 2	As specified in clause TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
Active cell		Cell 1	
Inter-RAT		GSM Carrier RSSI	
measurement			
quantity	1	Demined	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	NOTE: See Annex I for cell information Measurement control. The-information is sent before the compressed mode patterns starts.
N Identify abort		66	Taken from TS 25.133 [2] 8.1.2.5.2.1 table 8.7.
T Reconfirm abort		5.5	Taken from TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
T1	S	20	
T2	s	5	
T3	S	5	

Table 8.3.4.4: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)
		T1, T2, T3
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DCH_Ec/lor	dB	Note 1
OCNS_Ec/lor	dB	Note 2
\hat{I}_{or}/I_{oc}	dB	0
I_{oc}	dBm/3. 84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.

Table 8.3.4.5: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)			
Parameter	Ollit	T1	T2, T3		
Absolute RF Channel Number		AR	FCN 1		
RXLEV	dBm	-85	-75		

8.3.4.4.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1.
- 2) The UE is switched on
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 and compressed mode parameters are configured as in the table 8.3.4.3. The compressed mode shall remain inactive.
- 4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel
- 5) The start of T1 is TTI aligned
- 6) The SS shall transmit a MEASUREMENT CONTROL message to cell 1
- 7) At the T1-T2 transition, the SS shall switch the power of cell 2
- 8) The UE shall transmit a MEASUREMENT REPORT message triggered by event 3C
- 9) The SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time "now" and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell. The start of T3 is defined as the end of the last TTI, containing the HO command.
- 10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 90 ms from the beginning of time period T3, then the number of successful tests is increased by one.

[Editor's note: TS 34.108, 7.3.4 shall specify the messages HANDOVER ACCESS, PHYSICAL INFORMATION, SABM, UA and HANDOVER COMPLETE]

- 11) At the end of T3 the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 12) Repeat step 1-11 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	Valuoyitomant
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	'
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate	
(10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within
	virtual active set or of the other RAT
-Maximum number of reported cells	2
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	1
-Inter-RAT event identity (10.3.7.24)	Event 3C Not Present
-Threshold own system -W	Not Present
-vv -Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 dB 0 ms
-Reporting cell status (10.3.7.61)	V III3
-CHOICE reported cell	Report cells within active set or within
Onoto Liepotted cell	virtual active set or of the other RAT
-Maximum number of reported cells	2
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Active (for all three patterns specified in
2. 3.1 33.11p.03034 11040 0.4440 1110 (10.0.0.01)	table 8.3.4.3)

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Activation time	"now"
RB information elements	
-RAB information list	1
-RAB Info	Not present
Other information elements	
-CHOICE System type	GSM
-Frequency Band	GSM/DCS 1800 Band
-GSM message	
-Single GSM message	[TBD]
-GSM message List	GSM HANDOVER COMMAND formatted
	as BIT STRING(1512). The contents of
	the HANDOVER COMMAND see next
	table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of TS 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3

MEASUREMENT REPORT message for Inter-RAT test cases

This message is common for all inter RAT-frequency test cases in clause 8.7 and is described in Annex I.

8.3.4.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95 %.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

{Unchanged Sections are clipped here}

8.4 RRC Connection Control

8.4.1 RRC Re-establishment delay

8.4.1.1 Test 1

8.4.1.1.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{\text{UE-RE-ESTABLISH-REQ}}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send preambles on the PRACH.

 $T_{\text{UE-RE-ESTABLISH-REQ}}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.1.2 Minimum requirement

The Re-establishment delay $T_{\text{RE-ESTABLISH}}$ to a known cell shall be less than 1.9 s.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

 $T_{RE-ESTABLISH} = T_{RRC-RE-ESTABLISH} + T_{UE-RE-ESTABLISH-REQ-KNOWN}$

where

 $T_{RRC-RE-ESTABLISH} = 160ms + (N_{313}-1)*10ms + T_{313}$

 $T_{UE-RE-ESTABLISH_REQ-KNOWN} = 50ms + T_{search} + T_{SI} + T_{RA}$

 $N_{313} = 20$

 $T_{313} = 0s$

 $T_{search} = 100ms$

 T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

T_{SI} is the time required for receiving all the relevant system information data according to the

reception procedure and the RRC procedure delay of system information blocks defined in 25.331

for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 1820ms, allow 1.9s in the test case.

8.4.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.1.4 Method of test

8.4.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.1, table 8.4.1.2, and table 8.4.1.3 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consist of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.1 General test parameters for RRC re-establishment delay, Test 1

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference	As specified in clause C.3.1 and C.2.1
		measurement channel	
		12.2 kbps	
Power Control		On	
Active cell, Initial		Cell 1	
condition			
Active cell, Final		Cell 2	
condition			
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall only include intra frequency
			neighbours. NOTE: See Annex I for cell information.
Cell 2			Included in the monitored set
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

Table 8.4.1.2 Cell specific parameters for RRC re-establishment delay test, Test 1

Parameter	Unit	Cell 1	Cell 2	
		T0	T0	
Cell Frequency	ChNr	1	1	
CPICH_Ec/lor	dB	-10	-10	
PCCPCH_Ec/lor	dB	-12	-12	
SCH_Ec/lor	dB	-12	-12	
PICH_Ec/lor	dB	-15	-15	
DCH_Ec/lor	dB	-17	-infinity	
OCNS_Ec/lor	dB	-1.049	-0.941	
\hat{I}_{or}/I_{oc}	dB	2.39	-infinity	
I_{oc}	dBm/ 3.84 MHz	-	70	
CPICH_Ec/lo	dB	-12	-infinty	
Propagation Condition		AV	VGN	

Table 8.4.1.3 Cell specific parameters for RRC re-establishment delay test, Test 1

Parameter	Unit	Се	ell 1	Ce	II 2
		T1	T2	T1	T2
Cell Frequency	ChNr	,	1	1	
CPICH_Ec/lor	dB	-1	10	-1	0
PCCPCH_Ec/lor	dB	-1	12	-1	2
SCH_Ec/lor	dB	-1	12	-12	
PICH_Ec/lor	dB	-15		-15	
DCH_Ec/lor	dB	-17	-Infinity	Not app	olicable
OCNS_Ec/lor	dB	-1.049	-0.941	-0.9	941
\hat{I}_{or}/I_{oc}	dB	2,39	-Infinity	4,39	0,02
I_{oc}	dBm/ 3.84 MHz		-7	0	
CPICH_Ec/lo	dB	-15 -Infinity -13		3	
Propagation Condition		AWGN			

8.4.1.1.4.2 Procedure

- 1) The RF parameters are set up according to T0.
- 2) The UE is switched on.

- 9
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters.
- 4) The RF parameters are setup according to T1.
- 5) 10 s after step4 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 2.0 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T0.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 1920ms(Minimum requirement + 100ms), allow 2s in the test case.

8.4.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Note:

If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1.2 Test 2

8.4.1.2.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{\text{UE-E-ESTABLISH-REQ}}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send preambles on the PRACH.

 $T_{\text{UE-RE-ESTABLISH-REQ}}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.2.2 Minimum requirement

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

 $T_{RE-ESTABLISH} = T_{RRC-RE-ESTABLISH} + T_{UE-RE-ESTABLISH-REQ-UNKNOWN}$

where

 $T_{RRC-RE-ESTABLISH} = 160ms + (N_{313}-1)*10ms + T_{313}$

 $T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}UNKNOWN} \!\!=\!\! 50ms \!\!+\! T_{search} \!^*\! NF + T_{SI} + T_{RA},$

 N_{313} = 20 T_{313} = 0s T_{search} = 800ms

NF is the number of different frequencies in the monitored set. 3 frequencies are assumed in this test

case.

 T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

 T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331

for a UTRAN cell (ms).1280 ms is assumed in this test case.

This gives a total of 4120ms, allow 4.2s in the test case.

8.4.1.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.2.4 Method of test

8.4.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.3 and table 8.4.1.4 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.3 General test parameters for RRC re-establishment delay, Test 2

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference measurement channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control		On	
Active cell, initial condition		Cell 1	
Active cell, final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall include 2 additional frequencies. NOTE: See Annex I for cell information.
Cell 2			Cell 2 is not included in the monitored set. Cell 2 is located on one of the 2 additional frequencies of the monitored set.
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

Parameter Unit Cell 1 Cell 2 T1 T2 T1 **T2** ChNr Cell Frequency CPICH_Ec/lor dB -10 -10 PCCPCH_Ec/lor dB -12 -12 SCH_Ec/lor dΒ -12 -12 PICH_Ec/lor dB -15 -15 DCH_Ec/lor -17 Not applicable dB -Infinity -0.941 OCNS_Ec/lor -1.049 -0.941 dΒ -Infinity dB -3,35 -Infinity 0.02 I_{or}/I_{oc} dBm/ 3.84 -70 I_{oc} MHz CPICH Ec/lo -Infinity dB -15 -Infinity -13 **Propagation Condition AWGN**

Table 8.4.1.4 Cell specific parameters for RRC re-establishment delay test, Test 2

8.4.1.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters.
- 4) The SS waits for random access requests from the UE on cell 2.
- 5) 10 s after step3 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 4.3 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds the RF parameters are set up according to T1.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 4220ms(Minimum requirement + 100ms), allow 4.3s in the test case.

8.4.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

12

8.4.2 Random Access

8.4.2.1 Correct behaviour when receiving an ACK

8.4.2.1.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in clause 6 of TS 25.214 [5] and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.1.2 Minimum Requirements

The UE shall have capability to calculate initial power according to the open loop algorithm and apply this power level at the first preamble and increase the power on additional preambles. The absolute power applied to the first preamble shall have an accuracy as specified in table 6.3 of TS 25.101 [1]. The relative power applied to additional preambles shall have an accuracy as specified in clause 6.5.2.1 of 25.101 [1].

The absolute power applied to the first preamble shall be -30 dBm with an accuracy as specified in clause 6.4.1.1 of TS 25.101 [1]. The accuracy is \pm 9dB in the case of normal condition or \pm 12dB in the case of extreme condition.

There are two relative powers, one is the power difference for preamble ramping and another is the power difference between last preamble part and message part. From the test parameter in the table 8.4.2.1.2, the test requirement of the power difference for all preamble ramping is 3dB (Power offset P0). The accuracy is ± 2 dB as specified in clause 6.5.2.1 of 25.101 [1]. The test requirement of the power difference between 10^{th} preamble PRACH and message part is 3 dB (note). The accuracy is ± 2 dB as specified in clause 6.5.2.1 of 25.101 [1].

NOTE: In order to calculate the power difference between 10^{th} preamble PRACH and message part by using Power offset P _{p-m} in the table 8.4.2.1.2, the gain factors of PRACH message part are needed. The gain factor β_d is set to 15. The temporary gain factor β_c is set to 15.

The UE shall stop transmitting preambles upon a ACK on the AICH has been received and then transmit a message. The UE shall transmit 10 preambles and 1 message.

The normative reference for this requirements is TS 25.133 [2] clauses 6.3.2 and A.6.2.2.1.

8.4.2.1.3 Test purpose

The purpose of this test is to verify that the behaviour of the random access procedure is according to the requirements and that the PRACH power settings are within specified limits.

8.4.2.1.4 Method of test

8.4.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.1 in the case of the PRACH power measurement. And in the case of the function test of the random access procedure, connect the SS to the UE antenna connector as shown in figure A.8. A spectrum analyzer is set to 0 span mode.

See TS 34.108 [3] for details regarding generic call setup procedure.

Table 8.4.2.1.1: RF Parameters for Random Access test

Parameter	Unit	Cell 1
UTRA RF Channel Number		Channel 1
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
Number of other transmitted Acquisition Indicators	-	0
AICH_Ec/lor	dB	-10
PICH_Ec/lor	dB	-15
OCNS_Ec/lor when an AI is not transmitted	dB	-0,941
OCNS_Ec/lor when an AI is transmitted	dB	-1,516
\hat{I}_{or}/I_{oc}	dB	0
I_{oc}	dBm/3. 84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

The test parameters "System Information Block (SIB) type 5 (ASC #0)" defined in clause 6.1 of TS 34.108 [3], shall be used in all random access tests (see note). Crucial parameters for the test requirements are repeated in tables 8.4.2.1.2 and A.8.4.3.1.3 and these overrule the parameters defined in SIB type 5.

NOTE: A parameter of AC-to-ASC mapping(AC0-9) in SIB5 of clause 6.1 of TS 34.108 [3] shall be set to 0 in the case of all random access tests. The EFACC of Type A, which is specified in clause 8.3.2.15 of TS 34.108 [3], shall be selected.

Table 8.4.2.1.2: UE parameters for Random Access test

Parameter	Unit	Value
Access Service Class		
(ASC#0)		
	01	1
- Persistence value		
Maximum number of preamble		2
ramping cycles (M _{max}).		
Maximum number of		12
preambles in one preamble		
ramping cycle		
(Preamble Retrans Max)		
The backoff time T_{B01}	ms	N/A
N _{B01min=} N _{B01max}	#TTI	10
Power step when no	dB	3
acquisition indicator is		
received		
(Power offset P0)		
Power offset between the last	dB	0
transmitted preamble and the		
control part of the message		
(Power offset P p-m)		
Maximum allowed UL TX	DBm	21
power		

Table 8.4.2.1.3: SS parameters for Random Access test

Parameter	Unit	Value
Primary CPICH DL TX power	dBm	-8
UL interference	dBm	-92
SIR in open loop power	dB	-10
control (Constant value)		
AICH Power Offset	dB	0

8.4.2.1.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an ACK on the AICH shall be transmitted after 10 preambles have been received by the SS
- 2) Measure the first PRACH preamble output power, the each power difference for preamble ramping and the power difference between 10th preamble PRACH and message part of the UE according to annex B.
- 3) Measure the number of the preamble part and the message part by using a spectrum analyzer.

8.4.2.1.5 Test requirements

The accuracy of the first preamble as specified in clause 6.4.1.1 of TS 25.101 [1] shall not be verified in this test. It is verified under the section 5.4.1, Open loop power control.

There are two relative powers, one is the power difference for preamble ramping and another is the power difference between last preamble part and message part. From the test parameter in the table 8.4.2.1.2, the test requirement of the power difference for all preamble ramping is 3dB (Power offset P0). The accuracy is ± 3 dB. The test requirement of the power difference between 10th preamble PRACH and message part (control + data) is 3 dB (note). The accuracy is ± 3 dB

Table 8.4.2.1.4:
Test requirement for power difference

	Power difference preambles	ence for all		etween 10th preamble ge part (control+data)
Test requirement	3dB	±3 dB	3dB	±3 dB

NOTE: In order to calculate the power difference between 10th preamble PRACH and message part by using Power offset P $_{p\text{-m}}$ in the table 8.4.2.1.2, the gain factors of PRACH message part are needed. The gain factor β_d is set to 15. The temporary gain factor β_c is set to 15.

The UE shall stop transmitting preambles upon a ACK on the AICH has been received and then transmit a message. The UE shall transmit 10 preambles and 1 message.

Table 8.4.2.1.5: RF Parameters for Random Access test

Parameter	Unit	Cell 1
UTRA RF Channel Number		Channel 1
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
Number of other transmitted Acquisition Indicators	-	0
AICH_Ec/lor	dB	-10
PICH_Ec/lor	dB	-15
OCNS_Ec/lor when an AI is not transmitted	dB	-0,941
OCNS_Ec/lor when an AI is transmitted	dB	-1,516
\hat{I}_{or}/I_{oc}	dB	0
I_{oc}	dBm/3. 84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.2.2 Correct behaviour when receiving an NACK

8.4.2.2.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in clause 6 of TS 25.214 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.2.2 Minimum Requirements

The UE shall stop transmitting preambles upon a NACK on the AICH has been received and then repeat the ramping procedure when the back off timer T_{B01} expires.

The UE shall transmit 10 preambles in the first ramping cycle and no transmission shall be done by the UE within 100 ms after the NACK has been transmitted by the SS. Then the UE shall start the second preamble ramping cycle.

The normative reference for this requirements is TS 25.133 [2] clauses 6.3.2 and A.6.2.2.2.

8.4.2.2.3 Test purpose

The purpose of this test is to verify that the behaviour of the random access procedure is according to the requirements.

8.4.2.2.4 Method of test

8.4.2.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.8. A spectrum analyzer is set to 0 span mode.

See TS 34.108 [3] for details regarding generic call setup procedure.

8.4.2.2.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an NACK on the AICH shall be transmitted after 10 preambles have been received by the SS
- 2) Measure the number of the preamble part and the time delay between 10th preamble in the first ramping cycle and first preamble in the second ramping cycle by using a spectrum analyzer.

8.4.2.2.5 Test requirements

The UE shall stop transmitting preambles upon a NACK on the AICH has been received and then repeat the ramping procedure when the back off timer T_{B01} expires.

The UE shall transmit 10 preambles in the first ramping cycle and no transmission shall be done by the UE within 100 ms after the NACK has been transmitted by the SS. Then the UE shall start the second preamble ramping cycle.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.2.3 Correct behaviour at Time-out

8.4.2.3.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in clause 6 of TS 25.214 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.3.2 Minimum Requirements

The UE shall stop transmit preambles when reaching the maximum number of preambles allowed in a cycle. The UE shall then repeat the ramping procedure until the maximum number of preamble ramping cycles are reached. No ACK/NACK shall be sent by SS during this test.

The UE shall transmit 2 preambles cycles, consisting of 12 preambles in each preamble cycle.

The normative reference for this requirements is TS 25.133 [2] clauses 6.3.2 and A.6.2.2.3.

8.4.2.3.3 Test purpose

The purpose of this test is to verify that the behaviour of the random access procedure is according to the requirements.

8.4.2.3.4 Method of test

8.4.2.3.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.8. A spectrum analyzer is set to 0 span mode.

See TS 34.108 [3] for details regarding generic call setup procedure.

8.4.2.3.4.2 Procedure

1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2, and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no AICH.

2) Measure the number of the preamble part by using a spectrum analyzer.

8.4.2.3.5 Test requirements

The UE shall stop transmit preambles when reaching the maximum number of preambles allowed in a cycle. The UE shall then repeat the ramping procedure until the maximum number of preamble ramping cycles are reached. No ACK/NACK shall be sent by SS during this test.

The UE shall transmit 2 preambles cycles, consisting of 12 preambles in each preamble cycle.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.2.4 Correct behaviour when reaching maximum transmit power

8.4.2.4.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in clause 6 of TS 25.214 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.4.2 Minimum Requirements

The UE shall not exceed the maximum allowed UL TX power configured by the SS. No ACK/NACK shall be sent by SS during this test.

The absolute power of any preambles belonging to the first or second preamble cycle shall not exceed 0 dBm with more than specified in section 6.5 of TS 25.133.

The normative reference for this requirements is TS 25.133 [2] clauses 6.3.2 and A.6.2.2.4.

8.4.2.4.3 Test purpose

The purpose of this test is to verify that the PRACH power settings are within specified limits.

8.4.2.4.4 Method of test

8.4.2.4.4.1 Initial condition

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS to the UE antenna connector as shown in figure A.1.

See TS 34.108 [3] for details regarding generic call setup procedure.

Table 8.4.2.1.6: UE parameters for correct behaviour when reaching maximum transmit power

Parameter	Unit	Value
Access Service Class		
(ASC#0)		
	01	1
- Persistence value		
Maximum number of preamble		2
ramping cycles (M _{max}).		
Maximum number of		12
preambles in one preamble		
ramping cycle		
(Preamble Retrans Max)		
The backoff time T_{B01}	ms	N/A
$N_{B01min}=N_{B01max}$	#TTI	10
Device stop when he	4D	2
Power step when no	dB	3
acquisition indicator is received		
(Power offset P0)		
Power offset between the last	dB	0
transmitted preamble and the	uБ	U
control part of the message		
(Power offset P p-m)		
Maximum allowed UL TX	dBm	0
power	uDill	· ·
power		

8.4.2.4.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no AICH.
- 2) Set the TX output level of the SS to obtain \hat{I}_{or} at the UE antenna connector. \hat{I}_{or} shall be according to table 8.4.2.1.4.
- 3) Measure the all PRACH preamble output power of the UE according to annex B.

8.4.2.4.5 Test requirements

The UE shall not exceed the maximum allowed UL TX power configured by the SS. No ACK/NACK shall be sent by SS during this test.

The absolute power of any preambles belonging to the first or second preamble cycle shall not exceed 0 dBm with more than the tolerance specified in section 6.5 of TS 25.133.

Table 8.4.2.4:
Test requirement for maximum preamble power

	Maximum preamble power	
Test requirement	0dBm	+2.7, -3 dB

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.3 Transport format combination selection in UE

8.4.3.1 Interactive or Background, PS, UL: 64 kbps

8.4.3.1.1 Definition and applicability

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format set, according to the functionality specified in section 11.4 in TS25.321 [13]. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321 [13].

The requirements and this test apply to all types of UTRA for the FDD UE for Release 99, Release 4, Release 5 and later releases.

8.4.3.1.2 Minimum requirements

The UE shall continuously evaluate based on the *Elimination, Recovery* and *Blocking* criteria defined below, how TFCs on an uplink DPDCH can be used for the purpose of TFC selection. The evaluation shall be performed for every TFC in the TFCS using the estimated UE transmit power of a given TFC. The UE transmit power estimation for a given TFC shall be made using the UE transmitted power measured over the measurement period, defined in 9.1.6.1 of TS 25.133 [2] as one slot, and the gain factors of the corresponding TFC.

The UE shall consider the *Elimination* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC is greater than the Maximum UE transmitter power for at least X out of the last Y successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bit rate for each logical channel to upper layers within T_{notify} from the moment the *Elimination* criterion was detected.

The UE shall consider the *Recovery* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for the last Z successive measurement periods immediately preceding evaluation. The MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Recovery* criterion was detected.

The evaluation of the *Elimination* criterion and the *Recovery* criterion shall be performed at least once per radio frame.

The definitions of the parameters X,Y and Z which shall be used when evaluating the *Elimination* and the *Recovery* criteria when no compressed mode patterns are activated are given in Table 8.4.3.1.1.

Table 8.4.3.1.1: X, Y, Z parameters for TFC selection

X	Υ	Z
15	30	30

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of:

$$(T_{notify} + T_{modify} + T_{L1 proc})$$

where:

T_{notify} equals 15 ms

 $T_{modify} \ equals \ MAX(T_{adapt_max}, T_{TTI})$

 $T_{L1 proc}$ equals 15 ms

 T_{adapt_max} equals MAX(T_{adapt_1} , T_{adapt_2} , ..., T_{adapt_N})

N equals the number of logical channels that need to change rate

For Release 99 and Release 4, T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. Table 8.4.3.1.2 defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms.

Table 8.4.3.1.2: Tadapt

Service	T _{adapt} [ms]
UMTS AMR	40
UMTS AMR2	60

For Release 5 and later releases T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms. For services where either UMTS_AMR2 or UMTS_AMR_WB is used, Tadapt shall be considered to be equal to the time required to switch from the current codec mode to a new supported codec mode. In that case Tadapt equals 20 ms + 40 ms per codec mode switch. E.g. Tadapt equals 60ms if one codec mode switch is necessary and Tadapt equals 140ms if 3 codec mode switches are necessary.

 T_{TTI} equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

Maximum UE transmitter power = MIN(Maximum allowed UL TX Power, UE maximum transmit power)

where

Maximum allowed UL TX Power is set by SS and defined in TS 25.331 [8], and

UE maximum transmit power is defined by the UE power class, and specified in TS 25.101 [1].

The normative reference for these requirements is TS 25.133 [2] clauses 6.4.2 and A.6.4.1.

8.4.3.1.3 Test purpose

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. The test will verify the general requirement on TFC selection in section 8.4.3.1.2 for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108 [3].

8.4.3.1.4 Method of test

8.4.3.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.4.3.1.3, 8.4.3.1.4 and Table 8.4.3.1.5 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

Details on the UL reference RAB in table 8.4.3.1.3 and 8.4.3.1.4 can be found in TS 34.108 [3] section "Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH".

Table 8.4.3.1.3: UL reference RAB, Interactive or Background

	TFI	64 kbps RAB (20ms TTI)	DCCH 3.4kbps (40ms TTI)
TFS	TF0, bits	0x336	0x148
	TF1, bits	1x336	1x148
	TF2, bits	2x336	N/A
	TF3, bits	3x336	N/A
	TF4. bits	4x336	N/A

Table 8.4.3.1.4: UL TFCI

TFCI	(64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF0, TF1)
UL_TFC2	(TF1, TF0)
UL_TFC3	(TF1, TF1)
UL_TFC4	(TF2, TF0)
UL_TFC5	(TF2, TF1)
UL_TFC6	(TF3, TF0)
UL_TFC7	(TF3, TF1)
UL_TFC8	(TF4, TF0)
UL_TFC9	(TF4, TF1)

Table 8.4.3.1.5: General test parameters

Parameter	Unit	Value	Comment
TFCS size		10	
TFCS		UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC8, UL_TFC9	
Power Control		On	
Active cell		Cell 1	
Maximum allowed UL TX power	dBm	21	
T1	S	30	
T2	S	10	
Propagation condition		AWGN	

The radio conditions in the test shall be sufficient, so that decoding of the TPC commands can be made without errors.

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL_TFC8 or UL_TFC9) during the entire test and it shall be ensured that the UE is using UL_TFC8 or UL_TFC9 at the end of T1.

8.4.3.1.4.2 Procedure

- 1) The UE is switched on.
- 2) The SS shall signal to the UE the allowed TFCS according to table 8.4.3.1.5.
- 3) For T1=30 secs the SS shall command the UE output power to be between 14 and 15 dB below the UE Maximum allowed UL Tx power (table 8.4.3.1.5).
- 4) The SS shall start sending continuously TPC_cmd=1 to the UE for T2=10 secs (see NOTE).
- 5) The time from the beginning of T2 until the UE blocks (stops using) UL_TFC8 and UL_TFC9 shall be measured by the SS. The UE shall stop using UL_TFC8 and UL_TFC9 within 140 ms from beginning of time period T2. A success is counted, if the UE stops within 140 ms. An error is counted otherwise.
- 6) Repeat steps 3-5 until the confidence level according to annex F.6.2 is achieved.

NOTE: This will emulate that UL_TFC8 to UL_TFC9 can not be supported because the UE reaches the maximum UL Tx power and still SS is sending power-up commands.

8.4.3.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.5 Timing and Signalling Characteristics

8.5.1 UE Transmit Timing

8.5.1.1 Definition and applicability

The UE transmit timing is defined as the timing of the uplink DPCCH/DPDCH frame relative to the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame from the reference cell. The reference point is the antenna connector of the UE.

The requirements and this test apply to all types of UTRA of the FDD UE.

8.5.1.2 Minimum requirements

The UE transmission timing error shall be less than or equal to ± 1.5 chips. The reference point for the UE initial transmit timing control requirement shall be the time when the first detected path (in time) of the corresponding downlink DPCCH/DPDCH frame is received from the reference cell plus T_0 chips. T_0 is defined in TS25.211 [19].

When the UE is not in soft handover, the reference cell shall be the one the UE has in the active set. The cell, which is selected as a reference cell, shall remain as a reference cell even if other cells are added to the active set. In case that the reference cell is removed from the active set the UE shall start adjusting its transmit timing no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account.

The UE shall be capable of changing the transmission timing according the received downlink DPCCH/DPDCH frame. The maximum amount of the timing change in one adjustment shall be ¼ chip.

The minimum adjustment rate shall be 233ns per second. The maximum adjustment rate shall be $\frac{1}{4}$ chip per 200 ms. In particular, within any given 800*d ms period, the UE transmit timing shall not change in excess of $\pm d$ chip from the timing at the beginning of this 800*d ms period, where $0 \le d \le 1/4$.

The normative reference for this requirement is TS 25.133 [2] clause 7.1.2.

8.5.1.3 Test purpose

The purpose of this test is to verify that the UE initial transmit timing accuracy, maximum amount of timing change in one adjustment, minimum and maximum adjustment rate are within the limits specified in 8.5.1.2.

8.5.1.4 Method of test

8.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

For this test, two cells on the same frequency are used.

- 1) Connect the test system to the UE antenna connector as shown in figure A.1.
- 2) A call is set up with Cell 1 according to the Generic call setup procedure. The test parameters are set up according to table 8.5.1.1.

Parameter Unit Level DPCH_Ec/ lor, Cell 1 and Cell 2 dB -17 CPICH Ec/ Ior, Cell 1 and Cell 2 dB -10 PCCPH Ec/ Ior, Cell 1 and Cell 2 dB -12 SCH_Ec/ Ior, Cell 1 and Cell 2 dB -12 PICH_Ec/ Ior, Cell 1 and Cell 2 dB -15 OCNS_Ec/ lor, Cell 1 and Cell 2 dB -1.05Î_{or,} Cell 1 dBm/3.84 MHz -96 dBm/3.84 MHz -99 Îor, Cell 2 12.2 Information data rate kbps Relative delay of path received from cell +/-2 μs 2 with respect to cell 1 Propagation condition **AWGN**

Table 8.5.1.1: Test parameters for UE Transmit Timing requirements

8.5.1.4.2 Procedure

- a) After a connection is set up with cell 1, the test system shall verify that the UE transmit timing offset is within T_0 \pm 1.5 chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- b) Test system introduces cell 2 into the test system at delay +2 µs from cell 1. UE transmits Measurement report message, and Test system transmits ACTIVESET UPDATE message (Radio link addition information).
- c) Test system transmits Measurement Control message, and it verifies that cell 2 is added to the active set.
- d) Test system shall verify that the UE transmit timing offset is still within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- e) Test system switches Tx timing of cell 2 to a delay of $-2 \mu s$ with respect to cell 1.
- f) Test system verifies cell 2 remains in the active set.
- g) Test system shall verify that the UE transmit timing offset is still within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- h) Test system stops sending cell 1 signals.
- i) Void
- j) UE transmitsMeasurement report message, and Test system transmits ACTIVESET UPDATE message (Radio link removal information). Test system verifies that UE transmit timing adjustment starts no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account. The adjustment step size and the adjustment rate shall be according to the requirements in clause 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
- k) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
- 1) Test system starts sending cell 1 signal again with its original timing. UE transmits Measurement report message, and Test system transmits ACTIVESET UPDATE message (Radio link addition information).
- m) Test system transmits Measurement Control message, and it verifies that cell 1 is added to the active set.
- n) Test system verifies that the UE transmit timing is still within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
- o) Test system stops sending cell 2 signals.
- p) Void.

- q) Test system verifies that UE transmit timing adjustment starts no later than the time when the whole active set update message is available at the UE taking the RRC procedure delay into account. The adjustment step size and the adjustment rate shall be according to the requirements in clause 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- r) Test system shall verify that the UE transmit timing offset stays within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.

MEASUREMENT CONTROL message

Information Element	Value/Remark
Message Type	
LIE information plansants	
UE information elements	0
-RRC transaction identifier	0 Not Present
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	N CB
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	0
-Filter coefficient	FDD
-CHOICE mode	CPICH RSCP
-Measurement quantity	
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	
-Cell synchronisation information reporting	
indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	FALSE
-CPICH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

ACTIVESET UPDATE message (Radio link addition information)

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
- RRC transaction identifier	0
- Integrity check info	Not Present
- Activation time	"now".
- New U-RNTI	Not Present
CN information elements	
- CN Information info	Not Present
Phy CH information elements	
Uplink radio resources	
- Maximum allowed UL TX power	33 dBm
Downlink radio resources	
- Radio link addition information	1
- Radio link addition information	
- Primary CPICH info	Adding Cell
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
 Primary CPICH usage for channel estimation 	Primary CPICH may be used
- DPCH frame offset	This should be refrlected by the IE" Cell synchronisation
	information" in received MEASUREMENT REPORT
	message
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	Not Present
- Spreading factor	128
- Code number	96
- Scrambling code change	No code change
- TPC combination index	0
- SSDT Cell Identity	Not Present
 Closed loop timing adjustment mode 	Not Present
- TFCI combining indicator	FALSE
- SCCPCH Information for FACH	Not Present
- Radio link removal information	Not Present
- TX Diversity Mode	Not Present
- SSDT information	Not Present

ACTIVESET UPDATE message (Radio link removal information)

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
- RRC transaction identifier	0
- Integrity check info	Not Present
- Activation time	"now".
- New U-RNTI	Not Present
CN information elements	
- CN Information info	Not Present
Phy CH information elements	
Uplink radio resources	
- Maximum allowed UL TX power	33 dBm
Downlink radio resources	
- Radio link addition information	Not Present
- Radio link removal information	1
- Primary CPICH info	Removing Cell
- TX Diversity Mode	Not Present
- SSDT information	Not Present

8.5.1.5 Test requirements

- 1) In step a), d) and g), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- 2) In step j), the adjustment step size and the adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
- 3) In step k) and n), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
- 4) In step q), the adjustment step size and the adjustment rate shall meet the requirements specified in 8.5.1.2 until the UE transmit timing offset is within T₀ ± 1.5 chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- 5) In step r), UE transmit timing offset shall be within $T_0 \pm 1.5$ chips with respect to the first detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- NOTE 1: The above Test Requirement differs from the Test Requirement of TS 25.133 [2] clause A7.1.2, from which the requirements for the test system are subtracted to give the above Test Requirement.
- NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6 UE Measurements Procedures

8.6.1 FDD intra frequency measurements

8.6.1.1 Event triggered reporting in AWGN propagation conditions

8.6.1.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.1.1.2 Minimum requirements

The UE shall be able to identify and decode the SFN of a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify FDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io \geq -20 dB, SCH_Ec/Io \geq -20 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

In the CELL_DCH state the measurement period for intra frequency measurements is 200 ms. When no transmission gap pattern sequence is activated, the UE shall be capable of performing CPICH measurements for 8 identified intra-frequency cells of the monitored set and/or the active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When one or more transmission gap pattern sequences are activated, the UE shall be capable of performing CPICH measurements for at least $Y_{\text{measurement intra}}$ cells,

where $Y_{measurement\ intra}$ is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the sub-clause 9.1.1 and 9.1.2 of TS 25.133 [2]. If the UE has identified more than $Y_{measurement\ intra}$ cells, the UE shall perform measurements of all identified cells but the reporting rate of CPICH measurements of cells from UE physical layer to higher layers may be decreased.

$$\mathbf{Y}_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement FDD}} \cdot \frac{\mathbf{T}_{\text{Intra}}}{\mathbf{T}_{\text{Measurement Period, Intra}}} \right\} \text{ cells}$$

where

 $X_{\text{basic measurement FDD}} = 8 \text{ (cells)}$

T_{Measurement Period Intra} = 200 ms. The measurement period for Intra frequency CPICH measurements.

 T_{Intra} : This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

T_{basic_identify_FDD, intra} = 800 ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined T _{identify intra} defined above.

If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement period, becomes undetectable for a period < 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $T_{Measurement_Period\ Intra}$ ms provided the timing to that cell has not changed more than +/-32 chips, the UE CPICH measurement capabilities defined above are valid and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{identify_intra}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement_Period\ Intra}$ when the L3 filter has not been used and the UE CPICH measurement capabilities defined above are valid.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.1.

8.6.1.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.1.4 Method of test

8.6.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.6.1.1.1 to 8.6.1.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

Table 8.6.1.1.1: General test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference	As specified in C.3.1 and C.2.1
		Measurement Channel 12.2 kbps	
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation		0	Applicable for event 1A
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24	NOTE: See Annex I for cell information.
T1	S	5	
T2	s	5	
T3	S	5	

Table 8.6.1.1.2: Cell specific test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/lor	dB		-10		-10		
PCCPCH_Ec/lor	dB		-12			-12	
SCH_Ec/lor	dB		-12			-12	
PICH_Ec/lor	dB		-15			-15	
DPCH_Ec/lor	dB		-17		N/A		
OCNS_Ec/lor	dB		-1.049			-0.941	
\hat{I}_{or}/I_{oc}	dB	0	6.97	0	-Infinity	5.97	-Infinity
$\hat{I}_{or(Note1)}$	dBm	-70	-63.03	-70	-Infinity	-64.03	-Infinity
I_{oc}	dBm/3.84 MHz	-70					
CPICH_Ec/lo	dB	-13	-13	-13	-Infinity	-14	-Infinity
Propagation Condition		AWGN					

Note 1: The nominal Îor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.6.1.1.4.2 Procedure

- 1. The RF parameters are set up according to T1 in table 8.6.1.1.3.
- 2. The UE is switched on.
- 3. A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4. SS shall transmit a MEASUREMENT CONTROL message.
- 5. After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.1.3.
- 6. UE shall transmit a MEASUREMENT REPORT message triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7. After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3 in table 8.6.1.1.3.

- 8. UE shall transmit a MEASUREMENT REPORT message triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9. After 5 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 10. Repeat steps 1-9 according to Annex F.6.2 Table 6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41) -Reporting quantities for active set cells (10.3.7.5)	
-Reporting quantities for active set cells (10.3.7.3) -Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode -CPICH Ec/N0 reporting indicator	FDD TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2 -Reporting Range Constant	Monitored set cells 3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not present
-Reporting interval -Reporting cell status	0 ms (Note 2) Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger -Amount of reporting	0 ms Not Present
-Amount of reporting -Reporting interval	0 ms (note 2)
1 Reporting interval	1 0 1110 (11010 2)

	Information Element/Group name	Value/Remark		
-Reporting cell status		Not Present		
Physical	channel information elements			
-DPCH co	ompressed mode status info (10.3.6.34)	Not Present		
Note 1:	e 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained			
	in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331,			
8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information				
reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in				
MEASUREMENT CONTROL.				
Note 2:	2: Reporting interval = 0 ms means no periodical reporting			

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

Table 8.6.1.1.3: Test requirements for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Cell 1			Cell 2			
		T1	T2	T3	T1	T2	T3	
CPICH_Ec/lor	dB		-9.3	•		-9.3		
PCCPCH_Ec/lor	dB		-11.3			-11.3		
SCH_Ec/lor	dB		-11.3			-11.3		
PICH_Ec/lor	dB		-14.3			-14.3		
DPCH_Ec/lor	dB		-16.3			N/A		
OCNS			-1.26			-1.13		
$\hat{I}_{or}/I_{oc\ (Note\ 1)}$	dB	0	7.0	0	-Infinity	6.0	-Infinity	
\hat{I}_{or}	dBm	-70	-63.0	-70	-Infinity	-64.0	-Infinity	
I_{oc}	dBm/3.84 MHz				-70			
CPICH_Ec/lo	dB	-12.3	-12.3	-12.3	-Infinity	-13.3	-Infinity	
(Note 1)								
Propagation		AWGN						
Condition								
Note 1: These pa	arameters are	not directly	settable, but a	re derived by	calculation from	the settable pa	arameters	

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition

8.6.1.2.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.1.2.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.2.

8.6.1.2.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.2.4 Method of test

8.6.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.1.2.1.

Table 8.6.1.2.1: Cell specific initial test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/lor	dB	-10	-10	-10
PCCPCH_Ec/lor	dB	-12	-12	-12
SCH_Ec/lor	dB	-12	-12	-12
PICH_Ec/lor	dB	-15	-15	-15
DPCH_Ec/lor	dB	-17	N/A	N/A
OCNS_Ec/lor	dB	-1.049	-0.941	-0.941
\hat{I}_{or}/I_{oc}	dB	0	-Inf	-Inf
I_{oc}	dBm/ 3.84 MHz		-85	
CPICH_Ec/lo	dB	-13	-Inf	-Inf
Propagation Condition		AWGN		

The test parameters are given in table 8.6.1.2.2 and 8.6.1.2.3. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A, 1C and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table 8.6.1.2.2: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Replacement activation threshold		0	Applicable for event 1C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		32	NOTE: See Annex I for cell information.
T1	S	10	
T2	S	10	
T3	S	5	
T4	S	10	

Table 8.6.1.2.3: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2				Cell3			
		T1	T2	T3	T4	T1	T2	Т3	T4	T1	T2	T3	T4
CPICH_Ec/lor	dB	-10				-10				-10			
PCCPCH_Ec/ lor	dB	-12				-12				-12			
SCH_Ec/lor	dB	-12				-12				-12			
PICH_Ec/lor	dB	-15				-15				-15			
DPCH_Ec/lor	dB	-17				N/A				N/A			
OCNS_Ec/lor	dB	-1.049				-0.941				-0.941			
\hat{I}_{or}/I_{oc}	dB	6.97	6.93	5.97	6.12	-Inf	9.43	6.97	7.62	5.97	6.93	-Inf	5.62
I_{oc}	dBm/ 3.84	-85											
	MHz	Z											
CPICH_Ec/lo	dB	-13	-16	-14	-15.5	-Inf	-13.5	-13	-14	-14	-16	-Inf	-16
Propagation Condition	AWGN												

8.6.1.2.4.2 Procedure

- 1) The RF parameters are set up according to T0.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) 5 seconds after step4 has completed, the SS shall switch the power settings for T0 to T1.
- 6) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T1 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.

- 7) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 8) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 9) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 10) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 11) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 12) After 10 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 13) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 14) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 15) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.
- 16) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 17) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 18)UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 19) After 10 seconds from the beginning of T4, the UE is switched off.
- 20) Repeat steps 1-19 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49)	Modify
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	TRUE (Note 1)
-Cell synchronisation information reporting indicator -Cell Identity reporting indicator	TRUE (Note 1) TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
Oriolog report entend	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	S.N.S.N.S.
-Parameters required for each event	3
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency -Reporting deactivation threshold	Not Present 0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency -Reporting deactivation threshold	Not Present Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
1 2 2 2	1 1

Information Element/Group name	Value/Remark
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1C
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	Not present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not present
-Replacement activation threshold	0
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.

NOTE 2: Reporting interval = 0 ms means no periodical reporting.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition

8.6.1.3.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.1.3.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.3.

8.6.1.3.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.3.4 Method of test

8.6.1.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.6.1.3.1 and 8.6.1.3.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table 8.6.1.3.1: General test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		32	NOTE: See Annex I for cell information.
T1	S	10	
T2	S	10	
T3	S	10	
T4	S	10	

Table 8.6.1.3.2: Cell specific test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1			Cell 2		Cell3						
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/lor	dB		-1	10				10		-10			
PCCPCH_Ec/ lor	dB	-12		-12		-12							
SCH_Ec/lor	dB		-1	12			-1	12		-12			
PICH_Ec/lor	dB	-15				-1	15		-15				
DPCH_Ec/lor	dB	-17			N/A		N/A						
OCNS_Ec/lor	dB		-1.0	049		-0.941		-0.941					
\hat{I}_{or}/I_{oc}	dB	14.5 5	28.5 1	14.4 5	28.5 1	-Inf	27.5 1	13.9 5	21.5 1	8.05	21.5 1	13.9 5	27.5 1
I_{oc}	dBm/ 3.84 MHz	-85											
CPICH_Ec/lo	dB	-11	-13	-14.5	-13	-Inf	-14.0	-15	-20	-17.5	-20	-15	-14
Propagation Condition		AWGN											

8.6.1.3.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.

- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 10 seconds from the beginning T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) After 10 seconds from the beginning T2, the SS shall switch the power settings from T2 to T3.
- 8) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 9) After 10 seconds from the beginning T3, the SS shall switch the power settings from T3 to T4.
- 10) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1B. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 11) After 10 seconds, the UE is switched off.
- 12) Repeat steps 1-11 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	value/i\eiiiai K
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AMPLO
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	Event trigger Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	mad modulos moded official
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE (Note 1)
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator	TRUE TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event -Intra-frequency event identity	2 Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting -Reporting interval	Not present 0 ms (Note 2)
-Reporting interval -Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold -Time to trigger	Not Present 0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
	1

Information Element/Group name	Value/Remark				
-Reporting cell status	Not Present				
Physical channel information elements					
-DPCH compressed mode status info (10.3.6.34)	Not Present				
NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained					
in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331,					
8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information					
reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in					
MEASUREMENT CONTROL.					
NOTE 2: Reporting interval = 0 ms means no periodical rep	porting.				

40

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.3.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.1.4 Correct reporting of neighbours in fading propagation condition

8.6.1.4.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.1.4.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.4.

8.6.1.4.3 Test purpose

To verify that the UE meets the minimum requirements and also verify that the UE performs sufficient layer 1 filtering of the measurements. The test is performed in fading propagation conditions.

8.6.1.4.4 Method of test

Initial conditions 8.6.1.4.4.1

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.6.1.4.1 and 8.6.1.4.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and Event 1B shall be used. The test consists of two successive time periods, each with time duration of T1 and T2 respectively.

The TTI of the uplink DCCH shall be 20ms.

Table 8.6.1.4.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	0	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	120	
Filter coefficient		0	
Monitored cell list size		24	Signalled before time T1. NOTE: See Annex I for cell information.
T1	S	200	
T2	S	201	

Table 8.6.1.4.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1			Cell 2	
		T1	T2	T1	T2	
CPICH_Ec/lor	dB	-10		-10		
PCCPCH_Ec/lor	dB	-12		-12		
SCH_Ec/lor	dB	-12		-12		
PICH_Ec/lor	dB	-15		-15	-15	
DPCH_Ec/lor	dB	-17		N/A	N/A	
OCNS_Ec/lor	dB	-1.049		-0.941		
\hat{I}_{or}/I_{oc}	dB	7.29	3.29	3.29	7.29	
I_{oc}	dBm/3.84 MHz	-70				
CPICH_Ec/lo	dB	-12	-16	-16	-12	
Propagation Condition	Case 5 as specified in table D.2.2.1					

8.6.1.4.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up in AWGN conditions, according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) 5 seconds after step4 has completed, the fading simulator is switched on, configured with the settings described in the tables above at the beginning of T1.
- 6) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1A.
- 7) SS shall count the reports. The number of received event 1A reports shall be less than 60. If the SS fails to receive less than 60 event 1A reports, then then a failure is recorded. If the SS receives number of event 1A reports within the required limit, the number of successfull tests is increased by one.
- 8) After 200 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 9) UE shall start transmitting MEASUREMENT REPORT messages triggered by event 1B.
- 10) During the first 1s of time period T2 no event reports shall be counted.

- 11) After the first 1s SS shall start counting the reports. The number of received event 1B reports shall be less than 60. If the SS receives number of event 1B reports within the required limit, the number of successfull tests is increased by one.
- 12) After 201 seconds from the beginning of T2, the UE is switched off.
- 13) Repeat steps 1-12 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark		
Message Type (10.2.17)	value/i\eiiiai K		
UE information elements			
-RRC transaction identifier	0		
-Integrity check info	Not Present		
Measurement Information elements			
-Measurement Identity	1		
-Measurement Command (10.3.7.46)	Modify		
-Measurement Reporting Mode (10.3.7.49)	AMPLO		
-Measurement Report Transfer Mode	AM RLC		
-Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	Event trigger Not Present		
-CHOICE Measurement type	Intra-frequency measurement		
-Intra-frequency measurement (10.3.7.36)	mad modulos moded official		
-Intra-frequency measurement objects list (10.3.7.33)	Not Present		
-Intra-frequency measurement quantity (10.3.7.38)			
-Filter coefficient (10.3.7.9)	0		
-CHOICE mode	FDD		
-Measurement quantity	CPICH_Ec/N0		
-Intra-frequency reporting quantity (10.3.7.41)			
-Reporting quantities for active set cells (10.3.7.5) -Cell synchronisation information reporting indicator	TRUE (Note 1)		
-Cell Identity reporting indicator	TRUE (Note 1)		
-CHOICE mode	FDD		
-CPICH Ec/N0 reporting indicator	TRUE		
-CPICH RSCP reporting indicator	TRUE		
-Pathloss reporting indicator	FALSE		
-Reporting quantities for monitored set cells (10.3.7.5)			
-Cell synchronisation information reporting indicator	TRUE (Note 1)		
-Cell Identity reporting indicator	TRUE		
-CHOICE mode	FDD		
-CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator	TRUE TRUE		
-Pathloss reporting indicator	FALSE		
-Reporting quantities for detected set cells (10.3.7.5)	Not Present		
-Reporting cell status (10.3.7.61)	Not Present		
-Measurement validity (10.3.7.51)	Not Present		
-CHOICE report criteria	Intra-frequency measurement reporting		
	criteria		
-Intra-frequency measurement reporting criteria (10.3.7.39)			
-Parameters required for each event	2 Event 1A		
-Intra-frequency event identity -Triggering condition 2	Active set cells and monitored set cells		
-Reporting Condition 2 -Reporting Range Constant	0 dB		
-Cells forbidden to affect Reporting Range	Not Present		
-W	1.0		
-Hysteresis	0 dB		
-Threshold used frequency	Not Present		
-Reporting deactivation threshold	0		
-Replacement activation threshold	Not Present		
-Time to trigger	120 ms		
-Amount of reporting -Reporting interval	Not present 0 ms (Note 2)		
-Reporting interval -Reporting cell status	Not Present		
-Intra-frequency event identity	Event 1B		
-Triggering condition 1	Active set cells and monitored set cells		
-Reporting Range Constant	0 dB		
-Cells forbidden to affect Reporting Range	Not Present		
-W	1.0		
-Hysteresis	0 dB		
-Threshold used frequency	Not Present		
-Reporting deactivation threshold	Not Present		
-Replacement activation threshold -Time to trigger	Not Present 120 ms		
-Amount of reporting	Not Present		
-Reporting interval	0 ms (Note 2)		
	1		

	Information Element/Group name	Value/Remark					
-Repo	rting cell status	Not Present					
Physical	channel information elements						
-DPCH c	ompressed mode status info (10.3.6.34)	Not Present					
Note 1:	Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained						
	in the IE "Cell synchronisation information ", TS 25.33	31, clause 10.3.7.6. According to TS 25.331,					
	8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information						
reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in							
	MEASUREMENT CONTROL.						
Note 2:	Note 2: Reporting interval = 0 ms means no periodical reporting						

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.4.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check every time first if the number of the event 1A events is within the required limit, and then, check if the number of the event 1B events is within the required limit.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.2 FDD inter frequency measurements

8.6.2.1 Correct reporting of neighbours in AWGN propagation condition

8.6.2.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit the measurement report over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.2.1.2 Minimum requirements

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify inter}} = Max \left\{ 5000, T_{\text{basic identify FDD,inter}} \cdot \frac{T_{\text{Measurement Period, Inter}}}{T_{\text{Inter}}} \cdot N_{\text{Freq}} \right\} ms$$

A cell shall be considered detectable when CPICH $Ec/Io \ge -20$ dB, $SCH_Ec/Io \ge -17$ dB for at least one channel tap and SCH_Ec/Io is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

When transmission gaps are scheduled for FDD inter frequency measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.1 and 9.1.2 of 25.133 with measurement period given by

$$T_{\text{measurement inter}} = Max \left\{ T_{\text{Measurement_Period Inter}}, T_{\text{basic measurement FDD inter}} \cdot \frac{T_{\text{Measurement_Period Inter}}}{T_{\text{Inter}}} \cdot N_{\textit{Freq}} \right\} ms$$

If the UE does not need compressed mode to perform inter-frequency measurements, the measurement period for inter frequency measurements is 480 ms.

The UE shall be capable of performing CPICH measurements for $X_{basic\ measurement\ FDD\ inter}$ inter-frequency cells per FDD frequency of the monitored set or the virtual active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{Measurement_Inter.}$

 $X_{\text{basic measurement FDDinter}} = 6$

 $T_{Measurement_Period\ Inter} = 480\ ms.$ The period used for calculating the measurement period $T_{measurement_inter}$ for interfrequency CPICH measurements.

 $T_{Inter:}$ This is the minimum time that is available for inter frequency measurements, during the period $T_{Measurement_Period\ inter}$ with an arbitrarily chosen timing. The minimum time per transmission gap is calculated by using the actual idle length within the transmission gap as given in the table 11 of Annex B in TS 25.212 and by assuming 2*0.5 ms for implementation margin and after that taking only full slots into account in the calculation.

 $T_{basic_identify_FDD,inter} = 800$ ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

 $T_{basic_measurement_FDD\ inter} = 50$ ms. This is the time period used in the equation for defining the measurement period for inter frequency CPICH measurements.

 N_{Freq} : Number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than T $_{identify\ inter}$ defined in Clause 8.1.2.3.1 of 25.133 When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{identify_inter}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement_Period\ Inter}$ provided the timing to that cell has not changed more than +/-32 chips while transmission gap has not been available and the L3 filter has not been used.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.1.

8.6.2.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.2.1.4 Method of test

8.6.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.2.1.1

Table 8.6.2.1.1: Cell specific initial test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2	Cell3	
		T0	T0	T0	
CPICH_Ec/lor	dB	-10	-10	-10	
PCCPCH_Ec/lor	dB	-12	-12	-12	
SCH_Ec/lor	dB	-12	-12	-12	
PICH_Ec/lor	dB	-15	-15	-15	
DPCH_Ec/lor	dB	-17	N/A	N/A	
OCNS_Ec/lor	dB	-1.049	-0.941	-0.941	
\hat{I}_{or}/I_{oc}	dB	0	-Inf	-Inf	
I_{oc}	dBm/3 .84 MHz		-70		
CPICH_Ec/lo	dB	-13	-Inf	-Inf	
Propagation Condition		AWGN			

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables 8.6.2.1.2 and 8.6.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Table 8.6.2.1.2: General test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Compressed mode		C.5.2 set 1	As specified in C.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	NOTE: See Annex I for cell information. Measurement control-The information is sent before the compressed mode pattern starts.
T1	S	10	
T2	S	5	

Table 8.6.2.1.3: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Cha	nnel 1	Chan	nel 1	Cha	nnel 2
CPICH_Ec/lor	dB	-10		-10		-10	
PCCPCH_Ec/lor	dB	-12		-12		-12	
SCH_Ec/lor	dB	-12		-12		-12	
PICH_Ec/lor	dB	-15		-15		-15	
DPCH_Ec/lor	dB	-17		N/A		N/A	
OCNS_Ec/lor	dB	-1.049		-0.941		-0.941	
\hat{I}_{or}/I_{oc}	dB	0	5.42	-Infinity	3.92	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/lo	dB	-13	-13	-Infinity	-14.5	-14	-14
Propagation Condition	AWGN						

8.6.2.1.4.2 Procedure

- 1) The RF parameters are set up according to T0.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message (inter frequency).
- 5) SS shall transmit a MEASUREMENT CONTROL message (intra frequency).
- 6) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 7) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 8) 5 seconds after step7 has completed, the SS shall switch the power settings from T0 to T1.
- 9) UE shall transmit a MEASUREMENT REPORT message (inter frequency) triggered by event 2C. The measurement reporting delay from the beginning of T1 shall be less than 9.08 seconds. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 10) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 11) UE shall transmit a MEASUREMENT REPORT message (intra frequency) triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 1040 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 12) After 5 seconds from the beginning of T2, the UE is switched off.
- 13) Repeat steps 1-12 until the confidence level according to annex F.6.2 is achieved.

NOTE: The measurement reporting delay is 956.2 ms plus 80 ms delay uncertainty (twice the TTI). This gives a total of 1036.2 ms and rounded off to 1040 ms.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement:

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	N. D.
-CN Information info	Not Present
UTRAN mobility information elements	N (B)
-URA identity	Not Present
RB information elements	Not Propert
-Downlink counter synchronisation info	Not Present
PhyCH information elements -Frequency info	Not Present
Uplink radio resources	HOLLIGOUR
-Maximum allowed UL TX power	Not Present
Downlink radio resources	THOSE I TOOGIN
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Not present
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	UNDEFINED
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	B
-DeltaSIR1 -DeltaSIRafter1	3.0
-DeltaSiRatieri	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
- Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100
-PDSCH with SHO DCH Info	Not Present

-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as
	currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	96
-Scrambling code change	No code change
-TPC combination index	0
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

MEASUREMENT CONTROL message (inter frequency):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	<u> </u>
UE information elements -RRC transaction identifier	
	0 Not Present
-Integrity check info Measurement Information elements	Not Flesent
	2
-Measurement Identity	
-Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49)	Setup
-Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	_
-Ferrodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	Event trigger Not Present
CHOICE Measurement type	
-Inter-frequency measurement (10.3.7.16)	Inter-frequency measurement
-Inter-frequency measurement objects list (10.3.7.13)	
	Not Present
- CHOICE Inter-frequency cell removal	Not Present
- New Inter frequency cells	0
- Inter frequency cell id	0
- Frequency info	FDD
- CHOICE mode	FDD Not Proport
- UARFON uplink(Nu)	Not Present
- UARFCN downlink(Nd)	Same frequency as "Channel2" in Table
Call info	8.6.2.1.3
- Cell info	Not Propert
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	0
- Primary scrambling code	Set to Primary scrambling code of Cell3
- Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell3
	described in Table 8.6.2.1.3
- Tx Diversity Indicator	FALSE
- Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-Intra-frequency reporting criteria	
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Inter-frequency reporting criteria	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/N0
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
•	criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity	Event 2C
-Threshold used frequency	Not present
-W used frequency	Not present
-Hysteresis	0 dB
-Time to trigger	0 ms

Value/Remark
Report cells within monitored set on non-
used frequency
3
-18 dB
1
Not Present

NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.

MEASUREMENT CONTROL message (intra frequency):

Information Element/Group name	Value/Remark		
Message Type (10.2.17)	Valac/Remark		
UE information elements			
-RRC transaction identifier	0		
-Integrity check info	Not Present		
Measurement Information elements			
-Measurement Identity	1		
-Measurement Command (10.3.7.46)	Modify		
-Measurement Reporting Mode (10.3.7.49)			
-Measurement Report Transfer Mode	AM RLC		
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger		
-Additional measurements list (10.3.7.1)	Not Present		
-CHOICE Measurement type	Intra-frequency measurement		
-Intra-frequency measurement (10.3.7.36)	Not Droppet		
-Intra-frequency measurement objects list (10.3.7.33)	Not Present		
-Intra-frequency measurement quantity (10.3.7.38)			
-Filter coefficient (10.3.7.9) -CHOICE mode	0 FDD		
-Measurement quantity -Intra-frequency reporting quantity (10.3.7.41)	CPICH_Ec/N0		
-Reporting quantities for active set cells (10.3.7.5)			
-Reporting quantities for active set cells (10.3.7.3) -Cell synchronisation information reporting indicator	TRUE (Note 1)		
-Cell Identity reporting indicator	TRUE		
-CHOICE mode	FDD		
-CPICH Ec/N0 reporting indicator	TRUE		
-CPICH RSCP reporting indicator	TRUE		
-Pathloss reporting indicator	FALSE		
-Reporting quantities for monitored set cells (10.3.7.5)	1 ALGE		
-Cell synchronisation information reporting indicator	TRUE (Note 1)		
-Cell Identity reporting indicator	TRUE		
-CHOICE mode	FDD		
-CPICH Ec/N0 reporting indicator	TRUE		
-CPICH RSCP reporting indicator	TRUE		
-Pathloss reporting indicator	FALSE		
-Reporting quantities for detected set cells (10.3.7.5)	Not Present		
-Reporting cell status (10.3.7.61)	Not Present		
-Measurement validity (10.3.7.51)	Not Present		
-CHOICE report criteria	Intra-frequency measurement reporting		
criteria			
-Intra-frequency measurement reporting criteria (10.3.7.39)			
-Parameters required for each event	1		
-Intra-frequency event identity	Event 1A		
-Triggering condition 2	Monitored set cells		
-Reporting Range Constant	4 dB		
-Cells forbidden to affect Reporting Range	Not Present		
-CHOICE mode	FDD		
-Primary CPICH info (10.3.6.60)	4.0		
-W	1.0		
-Hysteresis	0 dB		
-Threshold used frequency -Reporting deactivation threshold	Not Present		
-Replacement activation threshold	0 Not Present		
-Replacement activation theshold -Time to trigger	0 ms		
-Amount of reporting	Not Present		
-Amount of reporting -Reporting interval	0 ms (Note 2)		
-Reporting interval -Reporting cell status	Not Present		
Physical channel information elements			
-DPCH compressed mode status info (10.3.6.34)	Not Present		
Note 1: The SFN-CFN observed time difference is calculated			
in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331,			
8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information			
reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in			

Note 2: Reporting interval = 0 ms means no periodical reporting

MEASUREMENT REPORT message for Inter frequency test cases

MEASUREMENT REPORT message for Intra frequency test cases

These messages are common for all inter and intra frequency test cases and are described in Annex I.

8.6.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.2.2 Correct reporting of neighbours in fading propagation condition

8.6.2.2.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit the measurement report over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH. The requirements and this test apply to the FDD UE.

The requirements and this test apply to all types of UTRA for the FDD UE for Release 5 and later releases.

8.6.2.2.2 Minimum requirements

The requirements are the same as in sub clause 8.6.2.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.2.

8.6.2.2.3 Test purpose

To verify that the UE meets the minimum requirements. The test is performed in fading propagation conditions.

8.6.2.2.4 Method of test

8.6.2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mod range; see clause G.2.4.

The test parameters are given in table 8.6.2.2.4.1 and 8.6.2.2.4.2. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used. The test consists of two successive time periods, each with time duration of T1 and T2 respectively.

Table 8.6.2.2.4.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		A.22 set 2 (TGPL1=12)	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold (Ec/N0) for Event 2C	dB	-18	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 8 on frequency Channel 2	NOTE: See Annex I for cell information. Measurement control-The information is sent before the compressed mode pattern starts.
Propagation Condition		Case 5	As specified in Annex B of TS 25.101.
Frequency offset	ppm	+/- 0.1	Frequency offset between Cell 1 and Cell 2.
T1	S	2	
T2	S	40	

Table 8.6.2.2.4.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Ce	II 1	Ce	II 2	
		T1	T2	T1	T2	
UTRA RF Channel Number		Chan	nel 1	Chan	nel 2	
CPICH_Ec/lor	dB	-1	-10		-10	
PCCPCH_Ec/lor	dB	-1	2	-12		
SCH_Ec/lor	dB	-12		-12		
PICH_Ec/lor	dB	-15		-15		
DPCH_Ec/lor	dB	Note 1 N/A		/A		
OCNS_Ec/lor	dB	No	te 2	-0.9	941	
\hat{I}_{or}/I_{oc}	dB	()	-Infinity	-1.8	
I_{oc}	dBm/3.84 MHz	-70 -70		0		
CPICH_Ec/lo	dB	-13 -Infinity		-Infinity	-14	
Propagation Condition	Case 5 as specified in Annex B of TS25.101					

Note 1: The DPCH level is controlled by the power control loop

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.

8.6.2.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up in AWGN conditions, according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After 2 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C. The measurement reporting delay from the beginning of T2 shall be less than 36.4 s. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

- 7) After 40 seconds from the beginning of T2, the UE is switched off.
- 8) Repeat steps 1-7 according to Annex F.6.2 Table 6.2.8

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17) UE information elements	
-RRC transaction identifier	0 Not Brosont
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode	
-Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	Event trigger Not Present
-Additional measurements list (10.5.7.1) -CHOICE Measurement type	
-Inter-frequency measurement (10.3.7.16)	Inter-frequency measurement
-Inter-frequency measurement objects list (10.3.7.13)	
- CHOICE Inter-frequency cell removal	Not Present
	Not Present
- New Inter frequency cells	
- Inter frequency cell id	0
- Frequency info - CHOICE mode	FDD
- UARFCN uplink(Nu)	Not Present
- UARFCN downlink(Nd)	Same frequency as "Channel2" in Table 8.6.2.1.3
Call infa	8.0.2.1.3
- Cell info - Cell individual offset	Not Present
Reference time difference to cell	Not Present
- Read SFN indicator	TRUE
- CHOICE mode	FDD
- Primary CPICH info	
- Primary Scrambling code	Set to Primary scrambling code of Cell3
- Primary CPICH Tx Power	Set to Primary Scrambling code of Cells Set to Primary CPICH Tx Power of Cells
- Filliary CFICH 1X Fower	described in Table 8.6.2.1.3
Ty Diversity Indicator	FALSE
 Tx Diversity Indicator Cell Selection and Re-selection info 	Set to Cell Selection and Re-selection info
- Cell Selection and Re-Selection into	of Cell3
- Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	Not Flesent
-Intra-frequency reporting criteria	
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-Inter-frequency reporting criteria	CI ICIT_EC/NO
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/N0
-Inter-frequency reporting quantity (10.3.7.21)	O TOTI_EC/NO
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	I ALGE
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Inter-frequency measurement reporting
On Orolla Topon Uniona	criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	Ontolia
-Parameters required for each event	1
-Inter-frequency event identity	Event 2C
-Threshold used frequency	Not present
- meshola asea mequency	
-W used frequency	Not present

Value/Remark
0 ms
Report all active set cells + cells within monitored set on used frequency
3
-18 dB
1
Not Present

NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.

MEASUREMENT REPORT message for Inter frequency test cases

These messages are common for all inter frequency test cases and are described in Annex I.

8.6.2.2.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95% According to annex F.6.2. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

{Unchanged Sections are clipped here}

Annex I (normative): Default Message Contents

This Annex contains the default values of common messages, other than those described in TS 34.108. The messages are primarily concerning the RRM test cases in clause 8 and unless indicated otherwise in specific test cases, shall be transmitted and checked by the system simulator. The necessary messages are listed in alphabetical order.

In this Annex, decimal values are normally used. However, sometimes, a hexadecimal value, indicated by an "H", or a binary value, indicated by a "B" is used.

Contents of MEASUREMENT REPORT message for Intra frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
 Intra-frequency measured results list 	
- Cell measured results	
- Cell Identity	Not present
- SFN-SFN observed time difference - Cell synchronisation information	Checked that this IE is present
- Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- CPICH Ec/N0	Checked that this IE is present
- CPICH RSCP	Checked that this IE is present
- Pathloss	Checked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of MEASUREMENT REPORT message for Inter frequency test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements
	in TS 34.123-2. If integrity protection is indicated to be
	active, this IE shall be present with the values of the sub
	IEs as stated below. Else, this IE and the sub-IEs shall be
	absent.
- Message authentication code	This IE is checked to see if it is present. The value is
	compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is
	used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
 Inter-frequency measured results list 	
- UTRA Carrier RSSI	If reporting of "CPICH Ec/N0" measurement is configured
	then checkChecked that this IE is present
- Inter-frequency cell measurement results	
- Cell measured results	
- Cell Identity	Not present
- Cell synchronisation information	0
-Tm	Checked that this IE is present
- OFF	Checked that this IE is present
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code - CPICH Ec/N0	150
- CPICH EC/NU	If reporting of "CPICH Ec/N0" measurement is configured
- CPICH RSCP	then checkChecked that this IE is present
- CPICH RSCP	If reporting of "CPICH Ec/N0" measurement is configured
Dethlose	then checkChecked that this IE is present
- Pathloss	If reporting of "CPICH Ec/N0" measurement is configured
Measured results on RACH	then checkChecked that this IE is present Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent
EVEIIL IESUIIS	Checked that this ie is absent

Contents of MEASUREMENT REPORT message for inter – RAT test cases

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.
Measurement identity	1
Measured Results	
 Inter-RAT measured results list 	
- CHOICE system - GSM	GSM
- Measured GSM cells	Checked that this IE is present
- GSM carrier RSSI	If reporting of "GSM carrier RSSI" measurement is configured then checkChecked that this IE is present
- CHOICE BSIC	Non verified BSIC
- Non verified BSIC	
- BCCH ARFCN	Checked that this IE is present
- Observed time difference to GSM cell	If reporting of "Observed time difference to GSM cell" measurement configured then checkChecked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

Contents of Master Information Block PLMN type is the case of GSM-MAP

<u>The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.4.1.1, 8.4.1.2, 8.6.1.1, 8.6.1.2, 8.6.1.3, 8.6.1.4, 8.6.2.1 test cases.</u>

Information Element	<u>Value/Remark</u>
- SIB POS	1
- SIB_POS offset info	Not Present
- SIB and SB type	Scheduling Block 1
- SIB REP	<u>128</u>
- SIB_POS	11
- SIB_POS offset info	Not Presen
- SIB and SB type	System Information Type 1
- SIB_REP	128
- SIB_POS	<u>11</u>
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 2
- SIB_REP	<u>128</u>
- SIB_POS	<u>10</u>
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 3
- SIB_REP	<u>128</u>
- SIB_POS	<u>26</u>
- SIB_POS offset info	Not Present
- SIB and SB type	System Information Type 4
- SIB REP	<u>128</u>
- SIB_POS	128 19 3
- SIB_POS offset info	<u>3</u>
- SIB and SB type	System Information Type 5

Contents of Scheduling Block 1 (FDD) size

The following information element is exception of TS34.108 based on monitorlist size for 8.4.1.1,8.4.1.2,8.6.1.1,8.6.1.4 test cases.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	<u>128</u>
- SIB_POS	128 3 3
- SIB_POS offset info	<u>3</u>
- SIB type SIBs only	System Information Type 6
- SIB_POS	2
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	4
- SIB_REP	<u>128</u>
- SIB_POS	128 27 3 4
- SIB_POS offset info	<u>3</u>
- SIB_OFF	<u>4</u>
- SIB type SIBs only	System Information Type 11
- SIB_REP	<u>128</u>
- SIB_POS	128 13 2
- SIB_POS offset info	<u>2</u>
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1
- SIB_REP	128 18
- SIB_POS	
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.4.1.1, 8.4.1.2, 8.6.1.1, 8.6.1.4

Information Element	Value/Remark
- Intra-frequency measurement system	
<u>information</u>	
- New intra-frequency cells	<u>24</u>
- Intra-frequency cell id	9+n (n=0 to 18)
- Cell info	Same content as specified for Intra-frequency cell id=2
	with the exception that value for Primary scrambling
	code shall not be overlaped values.
 Inter-frequency measurement system 	Not Present
<u>information</u>	
 Inter-RAT measurement system information 	Not Present

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4, 8.6.1.2,8.6.1.3.

Information Element	Value/Remark
- References to other system information blocks	
- SIB_REP	<u>128</u>
- SIB POS	3
- SIB_POS offset info	$\frac{3}{3}$
- SIB type SIBs only	System Information Type 6
- SIB POS	2
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	<u>5</u>
- SIB_REP	
- SIB_POS	<u>27</u>
- SIB_POS offset info	128 27 4 4 2 2 2 8
- SIB_OFF	$\frac{4}{}$
- SIB_OFF	<u>2</u>
- SIB_OFF	2
- SIB_OFF	<u>8</u>
- SIB type SIBs only	System Information Type 11
- SIB_REP	<u>128</u>
- SIB POS	128 13
- SIB POS offset info	<u>2</u>
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- SIB_REP	128 18
- SIB_POS	<u>18</u>
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.3.4.

Information Element	Value/Remark
- Intra-frequency measurement system	
information	
- New intra-frequency cells	<u>24</u>
- Intra-frequency cell id	9+n (n=0 to 18)
- Cell info	Same content as specified for Intra-frequency cell id=2
	with the exception that value for Primary scrambling
	code shall not be overlaped values.
- Inter-frequency measurement system	Not present
information	
- Inter-RAT measurement system information	
- Inter-RAT cell info list	
- Inter-RAT cell id	11+n (n=0 to 3)
- CHOICE Radio Access Technology	<u>GSM</u>
GSM	
- Cell individual offset	<u>0</u>
 Cell selection and re-selection info 	Not Present
- BSIC	
- Base transceiver Station Identity Code	Note: Any values depend on UEs.
(BSIC)	
- Band indicator	According to PICS/PIXIT
- BCCH ARFCN	Note: Any values that depend on UEs.

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.1.2,8.6.1.3.

Information Element	<u>Value/Remark</u>
- Intra-frequency measurement system	
information	
- New intra-frequency cells	<u>32</u>
- Intra-frequency cell id	9+n(n=0 to 22)
- Cell info	Same content as specified for Intra-frequency cell id=2
	with the exception that value for Primary scrambling
	code shall not be overlaped values.
- Intra-frequency cell id	0
- Cell info	Same content as specified for Intra-frequency cell id=2
	with the exception that value for Primary scrambling
	code shall not be overlaped values.
- Inter-frequency measurement system	Not Present
information	
- Inter-RAT measurement system information	Not Present

Contents of Scheduling Block 1 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.1 test case.

Information Element	<u>Value/Remark</u>
- References to other system information blocks	
- SIB_REP	<u>128</u>
- SIB_POS	$\frac{3}{3}$
- SIB_POS offset info	$\frac{3}{3}$
- SIB type SIBs only	System Information Type 6
- SIB POS	2
- SIB type SIBs only	System Information Type 7
- SEG_COUNT	<u>6</u>
- SIB_REP	<u>128</u>
- SIB_POS	<u>27</u>
- SIB_POS offset info	6 128 27 5 4 2 2 2 8 4
- SIB_OFF	<u>4</u>
- SIB_OFF	<u>2</u>
- SIB_OFF	<u>2</u>
- SIB_OFF	<u>8</u>
- SIB_OFF	<u>4</u>
- SIB type SIBs only	System Information Type 11
- SIB_REP	<u>128</u>
- SIB_POS	<u>13</u>
- SIB POS offset info	<u>5</u>
- SIB_OFF	<u>2</u>
- SIB_OFF	<u>8</u>
- SIB_OFF	<u>4</u>
- SIB_OFF	128 13 5 2 8 4 2 2
- SIB_OFF	
- SIB type SIBs only	System Information Type 12
- CHOICE Value tag	Cell Value tag
- Cell Value tag	1 1
- SEG_COUNT	$\left \frac{1}{2}\right $
- SIB_REP	128 18
- SIB_POS	
- SIB type SIBs only	System Information Type 18

Contents of System Information Block type 11 (FDD)

The following information element is exception of TS34.108 based on monitorlist size for 8.6.2.1.

Information Element	<u>Value/Remark</u>
- New intra-frequency cells	<u>24</u>
- Intra-frequency cell id	9+n(n=0 to18)
- Cell info	Same content as specified for Intra-frequency cell id=2
	with the exception that value for Primary scrambling
	code shall not be overlaped values.
- Inter-frequency measurement system	
information	
- New inter-frequency cells	<u>16</u>
- Inter frequency cell id	7+n (n = 0 to 12)
- Frequency info	Not Present
	Absence of this IE is equivalent to value of the
	previous "frequency info" in the list.
- Cell info	Same content as specified for Inter-frequency cell id=4
	with the exception that value for Primary scrambling
	code shall not be overlaped values.
 Inter-RAT measurement system information 	Not Present

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					t requirer									ncer	tainties.
Summary	ences if	уе: Ж	b) A c) A char d) A e) A f) A c g) C of W h) D i) Int test. j) R e k) R m) F	dd new dd new nge the dd new dd Acti dd new change / to 0, i refine s troducti evision Revision he test	cH Ec/lo time per time per value of time per ve Set U and revis triggering triggering the mea eparate to ion of tables of Annex of Annex impleme	riods 7 riods a W to W to riods f pdate se exis g conc asurer est 8.6.1 8.6.1 8.6.1 8.6.2 to Ex F.2 to extraitio	F5 and Tevis O. For R99 for commasting timent co 6.1.2A f 6.1.2.4, E2.1, 8.65 table F able F2. table F4.	rest in rest in nds for e perior Rel nor Rel 8.6.1.	table table reference the the	Methons for let 8.6.7 let 8.6.7 let cel age fond late giving let cel e Test to de let requirement let require let requirement let require let requirement let require let requ	d of tes R99 tes 1.2.3. in proc 99 test i lls" only or R99 ter. correct rect RF est Sys Tolerar	eduren producest. RF concept tem Lences.	1.2.4. able 8.6. e 8.6.1.2 cedure 8 change ondtions dtions fo Jncertain	1.2 2.4.2 3.6. the	.2, and 2. 1.2.4.2. value r R99 99 test.
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affected:	✓ Test specifications
Other comments:	## The R99 test is revised to align with the changes to 25.133 defined in R4-040377. The change of W from "1" to "0", although not in R4-040377, is required for the test to work as intended, and so is the addition / removal of Cell 3 (instead of Cell 2) from the active set. It is assumed that 25.133 will be changed to align. The "Rel-4 and later" test does not yet include Test Tolerances.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6 UE Measurements Procedures

8.6.1 FDD intra frequency measurements

8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)

8.6.1.2.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the Release 99 FDD UE.

8.6.1.2.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.2.

8.6.1.2.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.2.4 Method of test

8.6.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.1.2.41.

Table 8.6.1.2.1: Cell specific initial test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Cell 1	Cell 2	Cell3					
		T0	T0	T0					
CPICH_Ec/lor	dB	-10	-10	-10					
PCCPCH_Ec/lor	dB	-12	-12	-12					
SCH_Ec/lor	dB	-12	-12	-12					
PICH_Ec/lor	dB	-15	-15	-15					
DPCH_Ec/lor	dB	-17	N/A	N/A					
OCNS_Ec/lor	dB	-1.049	-0.941	-0.941					
\hat{I}_{or}/I_{oc}	dB	0	-Inf	-Inf					
$\hat{\underline{I}}_{or\ (Note\ 1)}$	<u>dBm</u>	<u>-85</u>	<u>-Inf</u>	<u>-Inf</u>					
I_{oc}	dBm/ 3.84 MHz		-85						
CPICH_Ec/lo	dB	-13	-Inf	-Inf					
Propagation Condition		AWGN							

Note 1: The nominal lor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

The test parameters are given in table 8.6.1.2.2 and 8.6.1.2.5. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A, 1C and 1B shall be used and the periodical reporting of the events is not applied. The CPICH Ec/Io and SFN-CFN observed time difference shall be reported together with Event 1A. The test consists of foursix successive time periods, with a time duration of T1, T2, T3, and T6 respectively. In the initial condition before the time T1, defined as T0, only Cell_1 is active.

Table 8.6.1.2.2: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		<u>0</u> 4	Applicable for event 1A and 1B
Replacement activation threshold		0	Applicable for event 1C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		32	
T1	s S	10	
T2	<u>s</u> S	110	
T3	sS	10 5	
T4	<u>s</u> S	<u>510</u>	
<u>T5</u>	<u>s</u>	1	
<u>T6</u>	<u>s</u>	10	

Table 8.6.1.2.3: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit		Ce	 1			Ce	II 2			Ce	113		
		T1	T2	T3	T4	T1 T2 T3 T4			T1	T2	T3	T4		
CPICH_Ec/lor	d₿		-4	Ю		-10				-10				
PCCPCH_Ec/	d₿		-12				-12				-12			
SCH_Ec/lor	d₿		-4	 2			-4	2			-4	2		
PICH_Ec/lor	d₿		-4	15			-4	15			-4	5		
DPCH_Ec/lor	d₿		-4	 7			Ŋ,	/A			N/A			
OCNS_Ec/lor	d₿		-1.(949		-0.941				-0.941				
$\frac{\hat{I}_{or}/I_{oc}}{I_{oc}}$	dB	6.97	6.93	5.97	6.12	-Inf	9.43	6.97	7.62	5.97	6.93	-Inf	5.62	
I_{oc}	dBm/ 3.84 MHz						-8	3 5						
CPICH_Ec/lo	d₿	-13	-16	-14	-15.5	-Inf	-13.5	-13	-14	-14	-16	-Inf	-16	
Propagation Condition			AWGN											

<u>Parameter</u>	<u>Unit</u>	Cell 1					Cell 2					Cell3					
		<u>T1</u> <u>T2</u>	<u>T3</u>	<u>T</u> <u>T5</u>	<u>T6</u>	<u>T1</u> <u>T2</u> <u>T3</u> <u>T</u> 4				<u>T5</u>	<u>T6</u>	<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T5</u>	<u>T6</u>
CPICH_Ec	<u>dB</u>		=	<u>10</u>			<u>-10</u>					<u>-10</u>					
PCCPCH_ Ec/lor	<u>dB</u>		Ξ	<u>12</u>				<u>-12</u>	2					<u>=</u>	<u>12</u>		
SCH_Ec/lo	<u>dB</u>		=	<u>12</u>				<u>-12</u>	2					<u>=</u>	<u>12</u>		
PICH_Ec/I or	<u>dB</u>		=	<u>15</u>				<u>-15</u>	<u> </u>					≟	<u>15</u>		
DPCH_Ec/ lor	<u>dB</u>		<u>No</u>	<u>te 1</u>				<u>N/A</u>	<u>A</u>			N/A		Note 1	L	<u>N</u>	<u>′A</u>
OC NS Ec/I or	<u>dB</u>		Note 2			<u>-0.941</u>					<u>-</u> 0.94 <u>1</u>		Note 2	2	<u>-0.9</u>	<u>941</u>	
\hat{I}_{or}/I_{oc}	<u>dB</u>	6.97	6.9 3	<u>5.97</u>	6.1 2	<u>-1</u>	<u>nf</u>	9.4 3	6.9	97	7.6 2	<u>5.9</u>	97	6.9 3	<u>-1</u>	<u>nf</u>	<u>5.62</u>
$\hat{I}_{or\ (Note\ 3)}$	<u>dBm</u>	<u>-78.03</u>	<u>-</u> <u>78.</u> <u>07</u>	<u>-79.03</u>	<u>-</u> <u>78.</u> <u>88</u>	-Inf 7578.03 77. 57 38				-79.03 78. 07			<u>-1</u>	<u>nf</u>	79.3 8		
I_{oc}	<u>dBm/ 3.84 MHz</u>		<u>-85</u>														
CPICH_Ec	<u>dB</u>	<u>-13</u>	<u>-16</u>	<u>-14</u>	1 <u>5.</u> <u>5</u>	<u>-1</u>	<u>nf</u>	13. 5	<u>-1</u> :	<u>3</u>	<u>-14</u>	<u>-1</u>	4	<u>-16</u>	<u>-l</u> ı	<u>nf</u>	<u>-16</u>
Propagation Condition		<u>AWGN</u>															

Note 1: The DPCH level is controlled by the power control loop

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}

Note 3: The nominal lor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.6.1.2.4.2 Procedure

- 1) The RF parameters are set up according to T0 in table 8.6.1.2.4.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) 5 seconds after step4 has completed, the SS shall switch the power settings for T0 to T1 in table 8.6.1.2.5.
- 6) 6)-UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T1 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) During the time period T1, the SS shall after the Event 1A triggered measurement is reported send an Active Set Update command with activation time "start of T2" adding cell 32 to the active set. The Active Set Update message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T2.
- <u>87</u>)UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 98) After 1140 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T32 in table 8.6.1.2.5.
- 109) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. The measurement reporting delay from the beginning of T32 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.

- 1140) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T32 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 1211) VoidUE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 1342) After 10 seconds from the beginning of T32, the SS shall switch the power settings from T32 to T43 in table 8.6.1.2.5.
- 14)13) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1B. The measurement reporting delay from the beginning of T43 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 15) During the time period T4, SS shall after the Event 1B triggered measurement is reported send an Active Set

 Update command with activation time "start of T5" removing cell 32 from the active set. The Active Set

 Update message shall be sent to the UE so that the whole message is available at the UE the RRC procedure delay prior to the beginning of T5.
- 1614) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 1745) After 65 seconds from the beginning of T43, the SS shall switch the power settings from T53 to T64 in table 8.6.1.2.5.
- 1816) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T64 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 1947) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 2018) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 2119) After 10 seconds from the beginning of T64, the UE is switched off.
- 2220) Repeat steps 1-2119 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	Variation
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	AM RLC
-Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	I mad noquency modeurement
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	TDUE (No. 4)
-Cell synchronisation information reporting indicator	TRUE (Note 1) TRUE
-Cell Identity reporting indicator -CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -Measurement validity (10.3.7.51)	Not Present Not Present
	Intra-frequency measurement reporting
-Oriolog report citteria	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	ontona
-Parameters required for each event	3
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	<u>0</u> 1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present 0
-Reporting deactivation threshold -Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	<u>01.0</u>
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present 0 ms
-Time to trigger -Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
1	1 0 (1.10.10 =)

Information Element/Group name	Value/Remark
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1C
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	Not present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not present
-Replacement activation threshold	0
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
NOTE 4 THEORN OF NEW CONTROL OF THE	, ,, OFF 1.T

NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.

NOTE 2: Reporting interval = 0 ms means no periodical reporting.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

<u>Table 8.6.1.2.4: Initial test requirements for Event triggered reporting of multiple neighbours in AWGN propagation conditions</u>

Parameter	<u>Unit</u>	Cell 1	Cell 2	Cell3						
		<u>T0</u>	<u>T0</u>	<u>T0</u>						
CPICH_Ec/lor	<u>dB</u>	<u>-9.3</u>	<u>-9.3</u>	<u>-9.3</u>						
PCCPCH_Ec/lor	<u>dB</u>	<u>-11.3</u>								
SCH_Ec/lor	<u>dB</u>	<u>-11.3</u>	<u>-11.3</u>	<u>-11.3</u>						
PICH_Ec/lor	<u>dB</u>	<u>-14.3</u>	<u>-14.3</u>	<u>-14.3</u>						
DPCH_Ec/lor	<u>dB</u>	<u>-16.3</u>	N/A	<u>N/A</u>						
OCNS_Ec/lor	<u>dB</u>	<u>-1.26</u>	<u>-1.13</u>	<u>-1.13</u>						
\hat{I}_{or}/I_{oc} (Note 1)	<u>dB</u>	<u>0</u>	<u>-Inf</u>	<u>-Inf</u>						
$\hat{\underline{I}}_{or)}$	<u>dBm</u>	<u>-85</u>	<u>-Inf</u>	<u>-Inf</u>						
I_{oc}	dBm/ 3.84 MHz		<u>-85</u>							
CPICH Ec/lo(Note 1)	<u>dB</u>	<u>-12.3</u>	<u>-Inf</u>	<u>-Inf</u>						
Propagation Condition	AVV(3N									
Note 1: These parameters are not directly settable, but are derived by calculation from the settable parameters.										

<u>Table 8.6.1.2.5: Test requirements for Event triggered reporting of multiple neighbours in AWGN propagation condition</u>

<u>Parameter</u>	<u>Unit</u>		<u>Ce</u>	<u>ll 1</u>			Cell 2					Cell3						
		<u> </u>	<u>T3</u>	<u>T</u>	<u>T5</u>	<u>T6</u>	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$				<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T5</u>	<u>T6</u>		
CPICH_Ec	<u>dB</u>	1	<u>-9</u>	9.3	,		<u>-9.3</u>					<u>-9.3</u>						
PCCPCH_ Ec/lor	<u>dB</u>		<u>-1</u>	<u>1.3</u>					<u>-11.</u>	.3					<u>-1</u>	<u>1.3</u>		
SCH_Ec/lo	<u>dB</u>		<u>-1</u>	<u>1.3</u>					<u>-11.</u>	.3					<u>-1</u>	<u>1.3</u>		
PICH_Ec/I or	<u>dB</u>		<u>-1</u>	<u>4.3</u>					<u>-14.</u>	.3					<u>-1</u>	<u>4.3</u>		
DPCH_Ec/ lor	<u>dB</u>		<u>No</u>	<u>te 1</u>					<u>N/A</u>	<u> </u>			N/A		Note 1	1	<u>N</u>	<u>/A</u>
OC NS Ec/I or	<u>dB</u>		<u>No</u>	ite 2			<u>-1.13</u>				1.13 Note 2			2	<u>-1.13</u>			
$\frac{\hat{I}_{or}/I_{oc}}{\frac{Note \ 3)}}$	<u>dB</u>	<u>7.0</u>	<u>6.9</u>	<u>6.0</u>	<u>)</u>	<u>6.1</u>	<u>-lr</u>	<u>nf</u>	<u>9.4</u>	7	. <u>.0</u>	<u>7.6</u>	<u>6.</u>	<u>0</u>	<u>6.9</u>	<u>-1</u>	<u>nf</u>	<u>5.6</u>
$\hat{\underline{I}}_{or}$	<u>dBm</u>	<u>-78.0</u>	78. 1	<u>-79.</u>	<u>.0</u>	<u>-</u> <u>78.</u> <u>9</u>	<u>-Ir</u>	<u>nf</u>	75. 6	<u>-7</u>	<u>8.0</u>	<u>77.</u> <u>4</u>	<u>-79</u>	<u>).0</u>	<u>78.</u> <u>1</u>	<u>-1</u>	<u>nf</u>	<u>-</u> <u>79.4</u>
I_{oc}	<u>dBm/ 3.84 MHz</u>								<u>-8</u>	<u>35</u>								
CPICH_Ec /lo(Note 3)	<u>dB</u>	<u>-12.3</u>	15. 3	<u>-13.</u>	.3	<u>-</u> <u>14.</u> <u>8</u>	<u>-lr</u>	<u>nf</u>	12. 8	<u>-1</u>	<u>2.3</u>	13. 3	<u>-13</u>	3.3	<u>-</u> 15. <u>3</u>	<u>-1</u>	<u>nf</u>	<u>15.3</u>
Propagation Condition		AWGN PCH level is controlled by the power control loop																

Note 1: The DPCH level is controlled by the power control loop

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)

8.6.1.2A.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the Rel-4 and later FDD UE.

8.6.1.2A.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1A.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.2.

8.6.1.2A.3 Test purpose

To verify that the UE meets the minimum requirements.

Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I or

Note 3: These parameters are not directly settable, but are derived by calculation from the settable parameters.

8.6.1.2A.4 Method of test

8.6.1.2A.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.1.2A.1.

<u>Table 8.6.1.2A.1: Cell specific initial test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions</u>

<u>Parameter</u>	<u>Unit</u>	Cell 1	Cell 2	Cell3
		<u>T0</u>	<u>T0</u>	<u>T0</u>
CPICH_Ec/lor	<u>dB</u>	<u>-10</u>	<u>-10</u>	<u>-10</u>
PCCPCH_Ec/lor	<u>dB</u>	<u>-12</u>	<u>-12</u>	<u>-12</u>
SCH_Ec/lor	<u>dB</u>	<u>-12</u>	<u>-12</u>	<u>-12</u>
PICH_Ec/lor	<u>dB</u>	<u>-15</u>	<u>-15</u>	<u>-15</u>
DPCH_Ec/lor	<u>dB</u>	<u>-17</u>	N/A	N/A
OCNS Ec/lor	<u>dB</u>	<u>-1.049</u>	<u>-0.941</u>	<u>-0.941</u>
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>0</u>	<u>-Inf</u>	<u>-Inf</u>
	<u>dBm/</u> 3.84 <u>MHz</u>		<u>-85</u>	
CPICH Ec/lo	<u>dB</u>	<u>-13</u>	<u>-Inf</u>	<u>-Inf</u>
Propagation Condition			<u>AWGN</u>	

The test parameters are given in table 8.6.1.2A.2 and 8.6.1.2A.3. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A, 1C and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

<u>Table 8.6.1.A2.2: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions</u>

<u>Parameter</u>	<u>Unit</u>	<u>Value</u>	Comment
DCH parameters		DL and UL Reference Measurement	As specified in C.3.1 and C.2.1
		<u>Channel 12.2 kbps</u>	
Power Control		<u>On</u>	
Active cell		Cell 1	
Reporting range	<u>dB</u>	<u>3</u>	Applicable for event 1A and 1B
<u>Hysteresis</u>	<u>dB</u>	<u>0</u>	
W		<u>1</u>	Applicable for event 1A and 1B
Replacement		<u>0</u>	Applicable for event 1C
activation threshold			
Reporting		<u>0</u>	Applicable for event 1A
<u>deactivation</u>			
<u>threshold</u>			
Time to Trigger	<u>ms</u>	<u>0</u>	
Filter coefficient		<u>0</u>	
Monitored cell list		<u>32</u>	
<u>size</u>			
<u>T1</u>	<u>S</u>	<u>10</u>	
<u>T2</u>	<u>S</u>	<u>10</u>	
<u>T3</u>	<u>S</u>	<u>5</u>	
<u>T4</u>	<u>S</u>	<u>10</u>	

<u>Table 8.6.1.2A.3: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition</u>

<u>Parameter</u>	<u>Unit</u>		Ce	<u>II 1</u>			Ce	II <u>2</u>		Cell3				
		<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	<u>T1 </u>				<u>T1</u>	<u>T2</u>	<u>T3</u>	<u>T4</u>	
CPICH_Ec/lor	<u>dB</u>		<u>-1</u>	0			<u>-1</u>	0		<u>-10</u>				
PCCPCH_Ec/ lor	<u>dB</u>	<u>-12</u>					<u>-1</u>	12		<u>-12</u>				
SCH_Ec/lor	<u>dB</u>		<u>-1</u>	2			<u>-1</u>	2			<u>-1</u>	2		
PICH_Ec/lor	<u>dB</u>		<u>-1</u>	5			<u>-1</u>	5			<u>-1</u>	<u>5</u>		
DPCH_Ec/lor	<u>dB</u>		<u>-1</u>	7			<u>N/A</u>				<u>N/A</u>			
OCNS_Ec/lor	<u>dB</u>		<u>-1.0</u>	<u> </u>			<u>-0.9</u>	941 <u></u>		<u>-0.941</u>				
$\frac{\hat{I}_{or}/I_{oc}}{}$	<u>dB</u>	<u>6.97</u>	<u>6.93</u>	<u>5.97</u>	<u>6.12</u>	<u>-Inf</u>	9.43	<u>6.97</u>	<u>7.62</u>	<u>5.97</u>	<u>6.93</u>	<u>-Inf</u>	<u>5.62</u>	
I_{oc}	<u>dBm/</u> 3.84 <u>MHz</u>		<u>-85</u>											
CPICH_Ec/lo	<u>dB</u>	<u>-13</u>	<u>-16</u>	<u>-14</u>	<u>-15.5</u>	<u>-Inf</u>	<u>-13.5</u>	<u>-13</u>	<u>-14</u>	<u>-14</u>	<u>-16</u>	<u>-Inf</u>	<u>-16</u>	
Propagation Condition			<u>AWGN</u>											

8.6.1.2A.4.2 Procedure

- 1) The RF parameters are set up according to T0.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) 5 seconds after step4 has completed, the SS shall switch the power settings for T0 to T1.
- 6) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T1 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 7) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 8) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 9) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 10) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 11)UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 12) After 10 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 13)UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 14) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.

- 15) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4,
- 16)UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 17) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 18)UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 19) After 10 seconds from the beginning of T4, the UE is switched off.
- 20) Repeat steps 1-19 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
<u>UE information elements</u>	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements -Measurement Identity	1
-Measurement Command (10.3.7.46)	1 Modify
-Measurement Reporting Mode (10.3.7.49)	<u>ividany</u>
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	Not Flesent
-Filter coefficient (10.3.7.9)	<u>0</u>
-CHOICE mode	<u>FDD</u>
-Measurement quantity	CPICH Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	TRUE (AL. ()
-Cell synchronisation information reporting indicator	TRUE (Note 1) TRUE
-Cell Identity reporting indicator -CHOICE mode	FDD
-CHOICE mode -CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
 Cell synchronisation information reporting indicator 	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator	TRUE TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	<u>criteria</u>
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	3 Event 1A
-Intra-frequency event identity-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	<u>0 dB</u>
-Threshold used frequency	Not Present
-Reporting deactivation threshold	O Not Propert
-Replacement activation threshold -Time to trigger	Not Present
- Time to trigger - Amount of reporting	0 ms Not Present
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
	<u>1.0</u> 0 dB
-Hysteresis -Threshold used frequency	Odb Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	<u>0 ms</u>
-Amount of reporting	Not Present
-Reporting interval	<u>0 ms (Note 2)</u>

Information Element/Group name	<u>Value/Remark</u>			
-Reporting cell status	Not Present			
-Intra-frequency event identity	Event 1C			
-Triggering condition 2	Active set cells and monitored set cells			
-Reporting Range Constant	Not present			
-Cells forbidden to affect Reporting Range	Not Present			
	Not present			
-Hysteresis	<u>0 dB</u>			
-Threshold used frequency	Not Present			
-Reporting deactivation threshold	Not present			
-Replacement activation threshold	<u>0</u>			
-Time to trigger	<u>0 ms</u>			
-Amount of reporting	Not Present			
-Reporting interval	0 ms (Note 2)			
-Reporting cell status	Not Present			
Physical channel information elements				
-DPCH compressed mode status info (10.3.6.34)	Not Present			
NOTE 1: The SFN-CFN observed time difference is calculated	from the OFF and Tm parameters contained			
in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331,				
8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information				
reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in				
MEASUREMENT CONTROL.				
NOTE 2: Reporting interval = 0 ms means no periodical reporting	na.			

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.2A.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Annex F (normative): General test conditions and declarations

The requirements of this clause apply to all applicable tests in the present document.

Many of the tests in the present document measure a parameter relative to a value that is not fully specified in the UE specifications. For these tests, the Minimum Requirement is determined relative to a nominal value specified by the manufacturer.

When specified in a test, the manufacturer shall declare the nominal value of a parameter, or whether an option is supported.

In all the relevant clauses in this clause all Bit Error Ratio (BER), Block Error Ratio (BLER), False transmit format Detection Ratio (FDR) measurements shall be carried out according to the general rules for statistical testing in clause F.6.

F.1 Acceptable uncertainty of Test System

The maximum acceptable uncertainty of the Test System is specified below for each test, where appropriate. The Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, and the equipment under test to be measured with an uncertainty not exceeding the specified values. All ranges and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95 % is the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment.

For RF tests it should be noted that the uncertainties in clause F.1 apply to the Test System operating into a nominal 50 ohm load and do not include system effects due to mismatch between the DUT and the Test System.

F.1.5 Requirements for support of RRM

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6 UE Measurements Procedures		
8.6.1 FDD intra frequency measurements		
8.6.1.1 Event triggered reporting in	During T1/T3 and T2:	
AWGN propagation conditions	$\frac{CPICH _E_c}{}$ ±0.1 dB	
	I_{or}	
	I_{or} (1) ±0.7 dB	
	I_{oc} ±1.0 dB	
	During T1/T3 only: Already covered above	
	Alleady covered above	
	During T2 only:	
	I_{or} (2) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for lor(n), cl derived according to ETR 273-1-2 [16], with b) Within each cell, the uncertainty for lor(n), uncorrelated to each other. c) Across different cells, the channel power ramount of positive correlation from zero (uncorrelated). d) The uncertainty for loc and lor(n) may have correlation from zero (uncorrelated) to one (fe) The absolute uncertainty of lor(1) and the are uncorrelated to each other. An explanation of correlation between uncertainty	a coverage factor of k=2. And channel power ratio are ratio uncertainties may have any correlated) to one (fully we any amount of positive fully correlated). relative uncertainty of lor(2),
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition (R99)	behind the assumptions, is recorded in 3GPI During T0 to T6: $\frac{CPICH _E_c}{I_{or}} = \pm 0.1 \text{ dB}$	P TR 34 902 [24].
	$\frac{I_{or}}{\frac{I_{oc}}{\pm 1.0 \text{ dB}}}$	
	During T1/T2, T3 and T6: I_{or} (3) relative to I_{or} (1) ±0.3 dB	
	During T3, T4/T5 and T6: I_{or} (2) relative to I_{or} (1) ±0.3 dBTBD	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
	Assumptions: a) The contributing uncertainties for lor(n), clearived according to ETR 273-1-2 [4], with a b) Within each cell, the uncertainty for lor(n), uncorrelated to each other. c) The relative uncertainties for lor(n) across amount of positive correlation from zero (uncorrelated). d) Across different cells, the channel power any amount of positive correlation from zero correlated). e) The uncertainty for loc and lor(1) may have correlation from zero (uncorrelated) to one (ff) The absolute uncertainty of lor(1) and the are uncorrelated to each other.	coverage factor of k=2. and channel power ratio are different cells may have any correlated) to one (fully ratio uncertainties may have (uncorrelated) to one (fully ve any amount of positive fully correlated).
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	<u>TBD</u>	

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.6 UE Measurements Procedures	
8.6.1 FDD intra frequency measurements	
8.6.1.1 Event triggered reporting in	During T1/T3 and T2:
AWGN propagation conditions	+0.70 dB for all Cell 1 Ec/lor ratios
	During T1/T3 only: Already covered above
	During T2 only: +0.70 dB for all Cell 2 Ec/lor ratios
8.6.1.2 Event triggered reporting of	During T0 to T6:
multiple neighbours in AWGN	+0.70 dB for all Cell 1 Ec/lor ratios
propagation condition (R99)	+0.70 dB for all Cell 2 Ec/lor ratios
propagation condition (139)	+0.70 dB for all Cell 3 Ec/lor ratios
8.6.1.2A Event triggered reporting of	TBD
multiple neighbours in AWGN	
propagation condition (Rel-4 and later)	

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test

Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.6 UE Measurements			
Procedures			
8.6.1 FDD intra			
frequency measurements			
8.6.1.1 Event triggered	Because the relationships he	l tween the Test system	uncertainties and the Test Tolerances
reporting in AWGN propagation conditions	are complex, it is not possible document. The analysis is re-	e to give a simple derivation	ation of the Test Requirement in this 902 [24].
	During T1 / T2 / T3:	During T1 / T2 / T3:	During T1 / T2 / T3:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT
	During T1/T3 only :	During T1/T3 only:	During T1/T3 only:
	Already covered above	Covered above	Already covered above
	During T2 only:	During T2 only:	During T2 only:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
8.6.1.2 Event triggered			uncertainties and the Test Tolerances
reporting of multiple neighbours in AWGN	document. The analysis is rec		ation of the Test Requirement in this
propagation condition	During T0 to T6:	During T0 to T6:	During T0 to T6:
(R99)	Cell 1, Cell 2 and Cell 3: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB TBD	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
8.6.1.2A Event triggered reporting of multiple neighbours in AWGN propagation condition (Rel-4 and later)	TBD	TBD	TBD

3GPP TSG-T1 Meeting #24 Toronto, Canada 26-30 July, 2004

CHANGE REQUEST						CR-Form-v7			
*	34.12	1 CR	414	жrev	-	¥	Current version:	5.4.0	¥
For <u>HEL</u>	P on using this	form, se	e bottom of thi	s page or	look	at th	e pop-up text over	r the ℋ syr	nbols.
Proposed cl	hange affects:	UICC	appsЖ	ME X	Rac	dio A	ccess Network	Core Ne	etwork

Title:	\mathfrak{H}	Correction to 5.5.2: Transmit ON/OFF Time mask	test case	
Source:	\mathfrak{R}	Motorola		
Work item code:	:Ж	TEI	Date: ₩	26/07/2004
Category:	\mathbb{H}	F	Release: ₩	Rel-99
		Use <u>one</u> of the following categories:	Use one of	the following releases:
		F (correction)	2	(GSM Phase 2)
		A (corresponds to a correction in an earlier release)) R96	(Release 1996)
		B (addition of feature),	R97	(Release 1997)
		C (functional modification of feature)		(Release 1998)
		D (editorial modification)		(Release 1999)
		Detailed explanations of the above categories can		(Release 4)
		be found in 3GPP TR 21.900.	Rel-5	(Release 5)
			Rel-6	(Release 6)

Reason for change: #	The table in the method of test in step 4) is incorrectly referring to 5.4.1.2 instead of 5.5.2.2.
Summary of change: ₩	Step 4) reference to 5.4.1.2 was replaced by 5.5.2.2.
Consequences if 第 not approved:	The reference to the table in the method of test would be incorrect.
Clauses affected: ₩	5.5.2
Other specs # affected:	Y N X Other core specifications # Test specifications X O&M Specifications
	<u> </u>
Other comments: #	This CR applies for Rel-99 and later releases.

5.5.2 Transmit ON/OFF Time mask

5.5.2.1 Definition and applicability

The time mask for transmit ON/OFF defines the ramping time allowed for the UE between transmit OFF power and transmit ON power. Possible ON/OFF scenarios are PRACH, CPCH or uplink compressed mode.

The requirements and this test apply to all types of UTRA for the FDD UE.

5.5.2.2 Minimum requirements

The transmit power levels versus time shall meet the mask specified in figure 5.5.1 for PRACH preambles, and the mask in figure 5.5.2 for all other cases. The off signal is defined as the RRC filtered mean power.

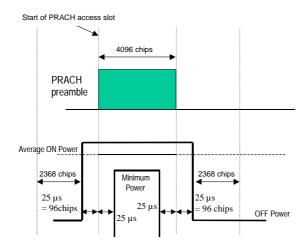


Figure 5.5.1: Transmit ON/OFF template for PRACH preambles

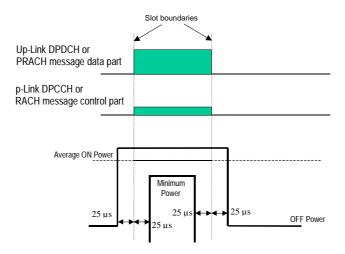


Figure 5.5.2: Transmit ON/OFF template for all other On/Off cases

OFF Power is defined in clause 5.5.1.2.

ON power is defined as the mean power. The specification depends on each possible case.

- First preamble of PRACH: Open loop accuracy (table 5.4.1.1).
- During preamble ramping of the RACH and between final RACH preamble and RACH message part: Accuracy depending on size of the required power difference (table 5.5.2.1).
- After transmission gaps in compressed mode: Accuracy as in table 5.7.1.
- Power step to Maximum Power: Maximum power accuracy (table 5.2.1).

Table 5.5.2.1: Transmitter power difference tolerance for RACH preamble ramping, and between final RACH preamble and RACH message part

Power difference size ΔP [dB]	Transmitter power difference tolerance [dB]
0	±1
1	±1
2	±1,5
3	±2
$4 \le \Delta P \le 10$	±2,5
$11 \le \Delta P \le 15$	±3,5
$16 \le \Delta P \le 20$	±4,5
21 ≤ ΔP	±6,5

The reference for this requirement is TS 25.101 [1] clause 6.5.2.1.

This is tested using PRACH operation.

5.5.2.3 Test purpose

To verify that the UE transmit ON/OFF power levels versus time meets the described mask shown in figure 5.5.1 and figure 5.5.2.

An excess error of transmit ON/OFF response increases the interference to other channels, or increases transmission errors in the up link own channel.

5.5.2.4 Method of test

5.5.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: low range, mid range, high range; see clause G.2.4.

- 1) Connect the SS to the UE antenna connector as shown in figure A.1.
- 2) Channel conditions are initially set up with received CPICH_RSCP >-85 dBm. The relative power level of downlink physical channels to I_{or} are set up according to clause E.2.1. The parameter settings of the cell are set up according to table 5.5.2.1A.
- 3) Switch on the phone.
- 4) After the UE has performed registration and entered idle mode, \hat{I}_{or} is set up according to table $\underline{5.4.1.2}\underline{5.5.2.2}$. The relative power level of downlink physical channels to I_{or} are set up according to clause E.2.1
- 5) A call is set up according to the Generic call setup procedure, in [3] clause 7.3.1 with channel conditions according the test parameters in table 5.5.2.3.

The RACH procedure within the call setup is used for the test. The number of the available subchannels should be limited to one. This ensures that the preamble sequence is known to the SS. The preamble retransmission shall be at least 3. The power ramping step size shall be 1 dB. Note that the maximum number of preamble retransmissions is limited to 5 due to the fact that the commanded uplink power exceeds the allowed uplink power of more than 6 dB. The SS shall not send either an ACK or a NACK.

Table 5.5.2.1A: Settings for the serving cell

Parameter	Unit	Cell 1
Cell type		Serving cell
UTRA RF Channel Number		Channel 1
Qqualmin	DB	-24
Qrxlevmin	DBm	-115
UE_TXPWR_MAX_RACH	DBm	21

Table 5.5.2.2: Test parameters for Transmit ON/OFF Time mask (UE)

Parameter	Level / Status	Unit
î _{or}	See table 5.5.2.3	dBm / 3,84 MHz

Table 5.5.2.3: Test parameters for Transmit ON/OFF Time mask (SS)

Parameter	Power Class 1	Power Class 2	Power Class 3	Power Class 4	Unit
Î _{or} (note 1)	-106,7	-106,7	-106,7	-106,7	dBm / 3,84 MHz
CPICH_RSCP (notes 1 and 2)	-110	-110	-110	-110	dBm
Primary CPICH DL TX power	+19	+19	+19	+19	dBm
Simulated path loss = Primary CPICH DL TX power - CPICH_RSCP	+129	+129	+129	+129	dB
UL interference	-86	-92	-95	-98	dBm
Constant Value	-10	-10	-10	-10	dB
Expected nominal UE TX power (note 3)	+33	+27	+24	+21	dBm

NOTE 1: The power level of S-CCPCH should be defined because S-CCPCH is transmitted during Preamble RACH transmission period. The power level of S-CCPCH is temporarily set to –10,3 dB relative to I_{or}. However, it is necessary to check whether the above S-CCPCH level is enough to establish a connection with the reference measurement channels.

NOTE 2: The purpose of this parameter is to calculate the Expected nominal UE TX power.

NOTE 3: The Expected nominal UE TX power is calculated by using the equation in the clause 8.5.7 Open Loop Power Control of TS 25.331 [8].

5.5.2.4.2 Procedure

- 1) Set the TX output level of the SS to obtain \hat{I}_{or} at the UE antenna connector and select the test parameters of table 5.5.2.3 according to the power class. \hat{I}_{or} shall be according to table 5.5.2.3 (-106,7 dBm / 3,84 MHz).
- 2) Measure the mean power (ON power) of the UE on the first RACH preamble or two consecutive RACH preambles. The measurements shall not include the transient periods. From the occurrence of the first RACH preamble the SS shall predict the following RACH preamble timing.
- 3) Measure the RRC filtered mean power (OFF power) in a 2368 chip time interval before a transient period of 25 µs (96 chips) prior to a RACH preamble (ON power). Measure the RRC filtered mean power (OFF power) in a 2368 chip time interval after a transient period of 25 µs (96 chips) after a RACH preamble (ON power).

5.5.2.5 Test requirements

The deviation with respect to the Expected nominal UE TX power (table 5.5.2.3), derived in step 2), shall not exceed the prescribed upper tolerance in table 5.2.2 (clause 5.2.5) and lower tolerance in table 5.4.1.1. (clause 5.4.1.2) for the first preamble, or shall meet the tolerance in table 5.5.2.1 for two consecutive preambles.

The measured RRC filtered mean power, derived in step 3), shall be less than -55 dBm. (clause 5.5.1.5).

3GPP TSG-T1 Meeting #24

Tdoc # T1-041341

Toronto, Canada, 26 - 30 July 2004

CR-Form-v7 **CHANGE REQUEST** \mathfrak{R} Current version: 34.121 CR 415 **#rev** For **HELP** on using this form, see bottom of this page or look at the pop-up text over the **%** symbols. ME X Radio Access Network Core Network Proposed change affects: UICC apps₩ Title: Cell configuration mapping Source: 第 NEC, Rohde&Schwarz Date: # 28/07/2004 Release: # Category: Rel-5 Use one of the following categories: Use one of the following releases: (GSM Phase 2) **F** (correction) 2 A (corresponds to a correction in an earlier release) R96 (Release 1996) **B** (addition of feature). R97 (Release 1997) **C** (functional modification of feature) (Release 1998) R98 **D** (editorial modification) (Release 1999) R99 Detailed explanations of the above categories can Rel-4 (Release 4) be found in 3GPP TR 21.900. Rel-5 (Release 5) Rel-6 (Release 6) Reason for change: # The cells defined in TS 25.133 and used in TS 34.121 do not correspond to the cells defined in TS 34.108 section 6.1.4. If the cells used in TS 34.121 are not mapped according to TS 34.108 then the SIB11 containing the neighbour list information will not be consistent. Summary of change: ₩ Add a new Annex describing the cell mapping between 34.121 and 34.108. Add a reference in section 8.1 stating that all cells shall use the mapping as described in the new Annex. ★ Inconsistent cell configurations Consequences if not approved: Clauses affected: Annex K (new Annex) Other specs Other core specifications TS 34.108 affected: Test specifications **O&M Specifications** Other comments: # This CR is applicable for UE's supporting R'99 or later.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8 Requirements for support of RRM

8.1 General

The cell configuration mapping between cells as defined in TS 34.121 and cells as defined in TS 34.108 section 6.1.4 is described in Annex K.

Annex J (informative): Information about special regional application of test cases and requirements

This annex provides information about special regional application of the tests specified in the core part of the present document. The special regional application of certain test cases is typically caused by specific local regulation and legalisation.

J.1 Japan

For regulatory testing in Japan shared risk against core specification value with test tolerance of zero may be applied provisionally, until the time the non-zero test tolerances principle used in the present document is reflected in Japanese regulations, The shared risk principle described above will apply to the following requirements:

- 5.9 Spectrum Emission Mask;

NOTE: This information should be reviewed on a regular basis to check its applicability, as changes to regulation allowing usage of the non-zero test tolerances principle are expected.

Annex K (normative): Cell configuration mapping

The cells defined in TS 25.133 and used in TS 34.121 do not correspond to the cells defined in TS 34.108 section 6.1.4. Table K.1 describes the mapping between cells described in TS 34.121 and those defined in TS 34.108. For each test case in section 8 the cells as defined in TS 34.108 section 6.1.4 are listed in one row. The test case shall apply the RF parameters as defined in TS 34.121 according to the column heading. The use of cells as defined in TS 34.108 section 6.1.4 is important in order to have consistent SIB11 configurations between the different cells.

Note: For example if the second cell in a test case is an inter-frequency cell then Cell4 from TS 34.108 section 6.1.4 is used with the radio parameters as defined for Cell2 in TS 34.121.

Table K.1: Cell configuration mapping for RF testing

		04.404	04.404	04.404	04404	04.404	04.404
Test		34.121	34.121	34.121	34.121	34.121	34.121
<u>Case</u>	<u>Description</u>	Cell1	Cell2	Cell3	Cell4	Cell5	Cell6
<u>8.2.2.1</u>	Idle Mode / Cell Re-Selection / Scenario 1:Single carrier	Calld	Callo	Callo	CallZ	Callo	Call44
0000	Case	Cell1	Cell2	Cell3	Cell7	Cell8	Cell11
8.2.2.2	Idle Mode / Cell Re-Selection / Scenario 2:Multi carrier	Cell1	Cell4	Cell2	Cell3	Cell5	Cell6
8.2.3.1	case Idle Mode / UTRAN to GSM Cell Re-Selection/ Scenario	Cell I	Cell4	CEIIZ	Cello	Cello	Cello
0.2.3.1	1: Both UTRA and GSM level changed	Cell1	Cell9				
8.2.3.2	Idle Mode / UTRAN to GSM Cell Re-Selection/ Scenario	<u> </u>	<u> </u>	_	_	_	_
	2: Only UTRA level changed	Cell1	Cell9	_	_	_	
8.2.4	Idle Mode / FDD/TDD Cell Re-selection	Cell1	TDD				
8.3.1	UTRAN Connected Mode Mobility / FDD/FDDSoft			_	_	_	_
	Handover	Cell1	Cell2	_	l_	_	_
<u>8.3.2.1</u>	UTRAN Connected Mode Mobility / FDD/FDDHard						
	Handover to intra-frequency cell	Cell1	Cell2	_	_	_	_
<u>8.3.2.2</u>	UTRAN Connected Mode Mobility / FDD/FDDHard	Coll4	Coll4				
022	Handover to inter-frequency cell UTRAN Connected Mode Mobility / FDD/TDDHard	Cell1	Cell4	_	-	_	
<u>8.3.3</u>	Handover	Cell1	TDD				
8.3.4	UTRAN Connected Mode Mobility /Inter-system	<u> </u>	100	_	-	_	-
<u> </u>	Handover from UTRAN FDD to GSM	Cell1	Cell9				
8.3.5.1	UTRAN Connected Mode Mobility / CellRe-selection in						
	CELL_FACH / One frequency present in neighbour list	Cell1	Cell2	Cell3	Cell7	Cell8	Cell11
<u>8.3.5.2</u>	UTRAN Connected Mode Mobility / CellRe-selection in						
	CELL_FACH / Two frequencies present in the neighbour	Cell1	Cell4	Cell2	Cell3	Cell5	Cell6
8.3.5.3	list UTRAN Connected Mode Mobility / CellRe-selection in	Cell I	Cell4	CellZ	Cello	Cello	Cello
0.5.5.5	CELL FACH / Cell Reselection to GSM	Cell1	Cell9				
8.3.6.1	UTRAN Connected Mode Mobility / CellRe-selection in			_	_	_	_
	CELL_PCH / One frequency present in the neighbour list	Cell1	Cell2	Cell3	Cell7	Cell8	Cell11
8.3.6.2	UTRAN Connected Mode Mobility / CellRe-selection in						
	CELL_PCH / Two frequencies present in the neighbour	Calld	Call4	Callo	Callo	Calle	CallC
0 2 7 4	LITERAN Connected Made Mobility / College colection in	Cell1	Cell4	Cell2	Cell3	Cell5	Cell6
<u>8.3.7.1</u>	UTRAN Connected Mode Mobility / CellRe-selection in URA_PCH / One frequency present in the neighbour list	Cell1	Cell2	Cell3	Cell7	Cell8	Cell11
8.3.7.2	UTRAN Connected Mode Mobility / CellRe-selection in	0011	<u> </u>	20110	20.11	20.10	30.11
	URA_PCH / Two frequencies present in the neighbour						
	list	Cell1	Cell4	Cell2	Cell3	Cell5	Cell6
<u>8.4.1.1</u>	RRC Connection Control / RRCRe-establishment delay /	0-114	0-110				
0.440	Test 1	Cell1	Cell2		ļ <u>-</u>		
<u>8.4.1.2</u>	RRC Connection Control / RRCRe-establishment delay / Test 2	Cell1	Cell4				
8.4.2.1	RRC Connection Control / Random Access /Correct	<u> </u>	<u> </u>	-	-	-	-
<u> </u>	behaviour when receiving an ACK	Cell1					
8.4.2.2	RRC Connection Control / Random Access /Correct		_	_	1	_	
	behaviour when receiving an NACK	Cell1	_	_		_	_
<u>8.4.2.3</u>	RRC Connection Control / Random Access /Correct	Coll4			1		
0.40.4	behaviour at Time-out	Cell1	<u>-</u>	<u>-</u>	ļ <u>-</u>	<u>-</u>	
8.4.2.4	RRC Connection Control / Random Access /Correct behaviour when reaching maximum transmit power	Cell1					
8.4.3.1	RRC Connection Control / Transport formatcombination	OGILI	-	-	-	-	
5.7.5.1	selection in UE / Interactive or Background, PS, UL: 64						
	kbps	Cell1			1_		
	A CONTRACTOR OF THE CONTRACTOR		l -	l -	ı -	l -	l -

<u>8.5.1</u>	Timing and Signalling Characteristics / UETransmit						
	Timing	Cell1	Cell2	_	_	_	_
<u>8.6.1.1</u>	FDD intrafrequency measurements / Event triggered reporting in AWGN propagation conditions	Cell1	Cell2				
8.6.1.2	FDD intrafrequency measurements / Event triggered			_			
	reporting of multiple neighbours inAWGN propagation condition	Cell1	Cell2	Cell3			
8.6.1.3	FDD intrafrequency measurements / Event triggered						
	reporting of two detectableneighbours in AWGN propagation condition	Cell1	Cell2	Cell3	_	_	_
<u>8.6.1.4</u>	FDD intrafrequency measurements / Correct reporting of neighbours in fadingpropagation condition	Cell1	Cell2				
8.6.2.1	FDD interfrequency measurements / Correct reporting of neighbours in AWGN propagationcondition	Cell1	Cell2	Cell4			
8.6.2.2	FDD interfrequency measurements / Correct reporting of neighbours in fading propagation condition	Cell1	Cell4				<u> </u>
<u>8.6.3.1</u>	TDD measurements / Correct reporting of TDD neighbours in AWGN propagation condition	Cell1	TDD	_	_	_	_
<u>8.6.4.1</u>	GSM measurements / Correct reporting of	Cell1	Cell9	_	_	_	_
8.7.1.1.1	GSMneighbours in AWGN propagation condition Measurements Performance Requirements /CPICH	Cell I	Cella	_	_	_	 -
0.7.1.1.1	RSCP / Intra frequency measurements accuracy / Absolute accuracy requirement	Cell1	Cell2				
8.7.1.1.2	Measurements Performance Requirements /CPICH	<u> </u>	OUNZ	_	_	_	_
	RSCP / Intra frequency measurements accuracy / Relative accuracyrequirement	Cell1	Cell2				
<u>8.7.1.2.1</u>	Measurements Performance Requirements / CPICH			_	_		
	RSCP / Inter frequency measurement accuracy / Relative accuracy requirement	Cell1	Cell4	_	_	_	_
<u>8.7.2.1.1</u>	Measurements Performance Requirements /CPICH Ec/lo						
	/ Intra frequency measurements accuracy / Absolute accuracyrequirement	Cell1	Cell2	_	_	_	_
<u>8.7.2.1.2</u>	Measurements Performance Requirements /CPICH Ec/lo / Intra frequency measurements accuracy / Relative						
	accuracyrequirement	Cell1	Cell2				
8.7.2.2.1	Measurements Performance Requirements / CPICH Ec/lo						
	/ Inter frequency measurement accuracy / Absolute accuracy requirement	Cell1	Cell4				
8.7.2.2.2	Measurements Performance Requirements /CPICH Ec/lo	OCIII	OCIIT	<u> - </u>	_	_	-
	/ Inter frequency measurement accuracy / Relative	Cell1	Cell4				
8.7.3.1	accuracyrequirement Measurements Performance Requirements /UTRA	Cell I	Cell4	<u> -</u>	_	 -	 -
0.7.5.1	Carrier RSSI / Absolute measurement accuracy						
	<u>requirement</u>	Cell1	Cell4	_	_	_	_
<u>8.7.3.2</u>	Measurements Performance Requirements /UTRA						
	Carrier RSSI / Relative measurement accuracy requirement	Cell1	Cell4				
8.7.3A	Measurements Performance Requirements / GSMCarrier RSSI	Cell1	Cell9	Cell10	GSM	GSM	GSM
8.7.3B	Measurements Performance Requirements /Transport	OCILI	OCIIO	OCITIO	COIVI	COIVI	COIVI
	channel BLER						
8.7.3C	Measurements Performance Requirements / UE	0 114					
8.7.4.1	transmitted power Measurements Performance Requirements /SFN-CFN	Cell1	<u> </u>	<u> -</u>	_	_	_
8.7.4.1	observed time difference /Intra frequency measurement	Cell1	Cell2				
8.7.4.2	requirement Measurements Performance Requirements /SFN-CFN	Cell I	CEIIZ	-	-	-	-
0.7.4.2	observed time difference /Inter frequency measurement requirement	Cell1	Cell4				
8.7.5.1	Measurements Performance Requirements /SFN-SFN	<u> </u>	<u> </u>	-	-	-	-
	observed time difference / SFN-SFN observed time	0 : 114	0 - 110				
0.7.5.0	difference type 1	Cell1	Cell2	<u> -</u>	_	<u> </u>	<u> </u> -
<u>8.7.5.2</u>	Measurements Performance Requirements /SFN-SFN observed time difference / SFN-SFN observed time						
0.7.0.:	difference type 2	_	 -	<u> </u>	_	-	_
<u>8.7.6.1</u>	Measurements Performance Requirements / UERx-Tx time difference / UE Rx-Tx time difference type 1	Cell1					
8.7.7	Measurements Performance Requirements /Observed	0011	1-	-	-	-	-
	time difference to GSM cell						
<u>8.7.8.1</u>	Measurements Performance Requirements / P-CCPCH	0-114	TDD				
	RSCP / Absolute measurement accuracy	Cell1	<u>TDD</u>	<u> </u>	l <u> </u>	_	_

Annex K_L (informative):
Change history

3GPP TSG T WG1 Meeting #24 Toronto, Canada, 26-30 July 2004

					CD.	-Form-v7
CHANGE REQUEST						
æ	34.121	CR 416	#rev - [#]	Current version:	5.4.0 **)
For <u>HELP</u> o	on using this for	rm, see bottom of	this page or look at t	he pop-up text over	the	ols.
Proposed chan	ge affects:	JICC appsж	ME <mark>✓</mark> Radio	Access Network	Core Netwo	ork

Title:	ж	Test tolerances in 8.4.1 RRC Re-establishment de	lay	
Source:	\mathfrak{H}	Rohde & Schwarz		
Work item code.	<i>:</i> Ж		Date: ₩	12/07/2004
Category:	\mathfrak{H}	F	Release: ₩	Rel-5
		Use one of the following categories:	Use <u>one</u> of	the following releases:
		F (correction)	2	(GSM Phase 2)
		A (corresponds to a correction in an earlier release)	R96	(Release 1996)
		B (addition of feature),	R97	(Release 1997)
		C (functional modification of feature)	R98	(Release 1998)
		D (editorial modification)	R99	(Release 1999)
		Detailed explanations of the above categories can	Rel-4	(Release 4)
		be found in 3GPP <u>TR 21.900</u> .	Rel-5	(Release 5)
			Rel-6	(Release 6)

Reason for change: #	It is clarified, that no test tolerances are necessary.
Summary of change: #	Minor editorial corrections
	Annex F.1.5, F.2.4, F.4.4 completed
	Statement in Annex F.4.4, that 8.4.1 does not need TT.
Consequences if # not approved:	Test was considered as incomplete.
Clauses affected: #	8.4.1, Annex F.1.5, F.2.4, F.4.4
	YN
Other specs #	
affected:	✓ Test specifications ✓ O&M Specifications
Other comments: #	

8.4 RRC Connection Control

8.4.1 RRC Re-establishment delay

8.4.1.1 Test 1

8.4.1.1.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{\text{UE-RE-ESTABLISH-REQ}}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send preambles on the PRACH.

 $T_{\text{UE-RE-ESTABLISH-REQ}}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.1.2 Minimum requirement

The Re-establishment delay $T_{RE-ESTABLISH}$ to a known cell shall be less than 1.9 s.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

 $T_{\text{RE-ESTABLISH}} = T_{\text{RRC-RE-ESTABLISH}} + T_{\text{UE-RE-ESTABLISH-REQ-KNOWN}}$

where

 $T_{RRC-RE-ESTABLISH} = 160ms + (N_{313}-1)*10ms + T_{313}$

 $T_{UE-RE-ESTABLISH_REQ-KNOWN} = 50ms + T_{search} + T_{SI} + T_{RA}$

 $N_{313} = 20$

 $T_{313} = 0s$

 $T_{\text{search}} = 100 \text{ms}$

 T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test

case.

 T_{SI} is the time required for receiving all the relevant system information data according to the

reception procedure and the RRC procedure delay of system information blocks defined in

25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 1820ms, allow 1.9s in the test case.

8.4.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.1.4 Method of test

8.4.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.1, table 8.4.1.1.A2, and table 8.4.1.23 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consist of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.1 General test parameters for RRC re-establishment delay, Test 1

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference	As specified in clause C.3.1 and C.2.1
		measurement channel	
		12.2 kbps	
Power Control		On	
Active cell, Initial		Cell 1	
condition			
Active cell, Final		Cell 2	
condition			
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall only include intra frequency
			neighbours.
Cell 2			Included in the monitored set
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

Table 8.4.1.1.A2 Cell specific parameters for RRC re-establishment delay test, Test 1

Parameter	Unit	Cell 1	Cell 2		
		T0	T0		
Cell Frequency	ChNr	1	1		
CPICH_Ec/lor	dB	-10	-10		
PCCPCH_Ec/lor	dB	-12	-12		
SCH_Ec/lor	dB	-12	-12		
PICH_Ec/lor	dB	-15	-15		
DCH_Ec/lor	dB	-17	-infinity		
OCNS_Ec/lor	dB	-1.049	-0.941		
\hat{I}_{or}/I_{oc}	dB	2.39	-infinity		
I_{oc}	dBm/ 3.84 MHz	-7	0		
CPICH_Ec/lo	dB	-12	-infinty		
Propagation Condition		AW	AWGN		

Table 8.4.1.23 Cell specific parameters for RRC re-establishment delay test, Test 1

Parameter	Unit	Cell 1		Cel	12
		T1	T2	T1	T2
Cell Frequency	ChNr		1	1	
CPICH_Ec/lor	dB		10	-1	0
PCCPCH_Ec/lor	dB		12	-1	2
SCH_Ec/lor	dB		12	-12	
PICH_Ec/lor	dB		15	-15	
DCH_Ec/lor	dB	-17	-Infinity	Not app	olicable
OCNS_Ec/lor	dB	-1.049	-0.941	-0.9	941
\hat{I}_{or}/I_{oc}	dB	2,39	-Infinity	4,39	0,02
I_{oc}	dBm/ 3.84 MHz		-7	0	
CPICH_Ec/Io	dB	-15 -Infinity -13		3	
Propagation Condition			AW	GN	

8.4.1.1.4.2 Procedure

- 1) The RF parameters are set up according to T0.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters.
- 4) The RF parameters are setup according to T1.
- 5) 10 s after step4 has completed, the parameters are changed to that as described for T2.
- 6) If the UE responds on cell 2 within 2.0 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T0.
- 9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
- 10) Repeat step 3-9 until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 1920ms(Minimum requirement + 100ms), allow 2s in the test case.

8.4.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1.2 Test 2

8.4.1.2.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{\text{UE-E-ESTABLISH-REQ}}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send preambles on the PRACH.

 $T_{\text{UE-RE-ESTABLISH-REQ}}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.2.2 Minimum requirement

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

 $T_{\text{RE-ESTABLISH}} = T_{\text{RRC-RE-ESTABLISH}} + T_{\text{UE-RE-ESTABLISH-REQ-UNKNOWN}}$

where

 $T_{RRC-RE-ESTABLISH} = 160ms + (N_{313}-1)*10ms + T_{313}$

 $T_{UE-RE-ESTABLISH-REO-UNKNOWN} = 50 \text{ms} + T_{search} * NF + T_{SI} + T_{RA},$

 $N_{313} = 20$

 $T_{313} = 0s$

 $T_{search} = 800 ms$

NF is the number of different frequencies in the monitored set. 3 frequencies are assumed in

this test case.

 T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test

case.

T_{SI} is the time required for receiving all the relevant system information data according to the

reception procedure and the RRC procedure delay of system information blocks defined in

25.331 for a UTRAN cell (ms).1280 ms is assumed in this test case.

This gives a total of 4120ms, allow 4.2s in the test case.

8.4.1.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.2.4 Method of test

8.4.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.3 and table 8.4.1.4 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX

cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.3 General test parameters for RRC re-establishment delay, Test 2

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference measurement channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control		On	
Active cell, initial condition		Cell 1	
Active cell, final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall include 2 additional frequencies.
Cell 2			Cell 2 is not included in the monitored set. Cell 2 is located on one of the 2 additional frequencies of the monitored set.
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

Table 8.4.1.4 Cell specific parameters for RRC re-establishment delay test, Test 2

Parameter	Unit	Cell 1		Ce	II 2
		T1	T2	T1	T2
Cell Frequency	ChNr		1	2	2
CPICH_Ec/lor	dB	-	10	-1	10
PCCPCH_Ec/lor	dB	-	12	-1	12
SCH_Ec/lor	dB	-	12	-12	
PICH_Ec/lor	dB	-	15	-1	15
DCH_Ec/lor	dB	-17	-Infinity	Not app	olicable
OCNS_Ec/lor	dB	-1.049	-0.941	-0.9	941
\hat{I}_{or}/I_{oc}	dB	-3,35	-Infinity	-Infinity	0,02
I_{oc}	dBm/ 3.84 MHz			-70	
CPICH_Ec/lo	dB	-15	-Infinity	-Infinity	-13
Propagation Condition			A۱	NGN	

8.4.1.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4 without Compressed mode parameters.
- 4) The SS waits for random access requests from the UE on cell 2.
- 45) 10 s after step3 has completed, the parameters are changed to that as described for T2.
- <u>56</u>) If the UE responds on cell 2 within 4.3 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
- 67)SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 78) After 6 seconds the RF parameters are set up according to T1.
- 89) The SS shall wait for 30s to make the UE complete cell reselection to cell1.

910) Repeat step 3-89 until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 4220ms(Minimum requirement + 100ms), allow 4.3s in the test case.

8.4.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% of the cases with a confidence level of 95%.

Note:

If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

F.1.5 Requirements for support of RRM

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2 Idle Mode Tasks		
8.2.2 Cell Re-Selection		
8.2.2.1 Scenario 1: Single carrier case	During T1 and T2:	
	$\frac{CPICH _E_c}{I_{or}}$ ±0.1 dB	
	<i>I_{oc}</i> ±1.0 dB	
	During T1:	
	$I_{or}(2)$ ±0.7 dB	
	I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB	
	$\frac{\text{During T2:}}{I_{or}(\text{1})} \qquad \qquad \pm 0.7 \text{ dB}$	
	I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB	
	Assumptions: a) The contributing uncertainties for lor(r loc are derived according to ETR 273-1-factor of k=2.	•
	b) Within each cell, the uncertainty for lo ratio are uncorrelated to each other.	or(n), and channel power
	c) The relative uncertainties for lor(n) achave any amount of positive correlation one (fully correlated).	
	d) Across different cells, the channel powers any amount of positive correlation one (fully correlated).	
	e) The uncertainty for loc and lor(n) may positive correlation from zero (uncorrelation)	
	f) The absolute uncertainty of lor(2) at T uncertainty of lor(1, 3, 4, 5, 6), are uncon Similarly, the absolute uncertainty of lor(2, 3, 4, 5, 6), are uncon uncertainty of lor(2, 3, 4, 5, 6), are uncon	rrelated to each other. (1) at T2 and the relative
	An explanation of correlation between unrationale behind the assumptions, is received.	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2:	Oncertainty
	$CPICH _E_c$ ±0.1 dB	
	I_{or}	
	I_{oc} (1) ±1.0 dB	
	$ \frac{\text{Channel 1 during T1:}}{I_{or}(\text{1})} \\ \pm 0.7 \text{ dB} $	
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
	$\frac{\text{Channel 1 during T2:}}{I_{or}\text{(1)}} \qquad \qquad \pm 0.7 \text{ dB}$	
	I_{or} (3, 4) relative to I_{or} (1) \pm 0.3 dB	
	Channel 2 during T1 and T2:	
	$\frac{CPICH _E_c}{I_{or}} $ ±0.1 dB	
	I_{oc} (2) ±1.0 dB	
	I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	$\frac{\text{Channel 2 during T2:}}{I_{or} \text{ (2)}} \\ \pm 0.7 \text{ dB}$	
	I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	Assumptions: a) to e): Same as for the one-frequency	test 8.2.2.1.
	f) The absolute uncertainty of lor(1) and lor(3, 4), are uncorrelated to each other. uncertainty of lor(2) and the relative uncorrelated to each other.	Similarly, the absolute
	g) The absolute uncertainties for lor(1) a amount of positive correlation from zero correlated).	
	h) The absolute uncertainties for loc(1) a amount of positive correlation from zero correlated).	
	An explanation of correlation between ur rationale behind the assumptions, is reco [24].	
L	1	

8.2.3 UTRAN to GSM Cell Re-Selection 8.2.3.1 Scenario 1: Both UTRA and GSM $I_{ee}/I_{RXLEV} = \pm 0.3 \mathrm{dB} I_{ee}/I_{RXLEV} = \pm 1.0 \mathrm{dB} I_{RE}/I_{RXLEV} = \pm 1.0 \mathrm{dB} I_{RE}/I_{RE}/I_{RE}/I_{RE} = \pm 0.1 \mathrm{dB} I_{RE}/I_$	Clause	Maximum Test System Uncertainty		Derivation of Test System Uncertainty	
8.2.3.1 Scenario 1: Both UTRA and GSM level changed					
8.2.3.1 Scenario 1: Both UTRA and GSM level changed					
level changed	8.2.3 UTRAN to GSM Cell Re-Selection				
level changed $I_{oc} / RXLEV $		\hat{I}_{ox}/I_{oa}	±0.3 dB		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	level changed		±0.3 dB	CPICH_Ec ratio	
RXLEV \$\pmu.1.0 \ dB\$ $\frac{CPICH_{-E_c}}{I_{or}} \pmu.0.3 \ dB \ uncertainty in \hat{I}_{oc}/I_{oc} \ based on power meter measurement after the combiner $0.3 \ dB \ uncertainty in \line{I}_{oc}/I_{oc} \ based on power meter measurement after the combiner $0.3 \ dB \ uncertainty in \line{I}_{oc}/RXLEV \ based on power meter measurement after the combiner $1.0 \ dB$ 8.2.3.2 Scenario 2: Only UTRA level changed \frac{i_{or}/I_{oc}}{I_{oc}/RXLEV} = 0.3 \ dB = 0.3 $			±1.0 dB		
$\frac{CPICH_E_c}{I_{or}} \pm 0.1 \mathrm{dB}$ based on power meter measurement after the combiner 0.3 dB uncertainty in loc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB. The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the awgn is the absolute error of the AWGN is specified as 1.0 dB.				-	
I_{or} I_{or} $0.3 \mathrm{dB} \mathrm{uncertainty} \mathrm{in} \mathrm{locorRALEV} \mathrm{based} \mathrm{on} \mathrm{power} \mathrm{meter} \mathrm{measurement} \mathrm{after} \mathrm{the} \mathrm{combiner}$ $0.3 \mathrm{dB} \mathrm{uncertainty} \mathrm{in} \mathrm{locorRALEV} \mathrm{based} \mathrm{on} \mathrm{power} \mathrm{meter} \mathrm{measurement} \mathrm{after} \mathrm{the} \mathrm{combiner}$ $\mathrm{The} \mathrm{absolute} \mathrm{error} \mathrm{of} \mathrm{the} \mathrm{AWGN} \mathrm{is} \mathrm{specified} \mathrm{as} 1.0 \mathrm{dB} \mathrm{RALEV} \mathrm{is} \mathrm{is} $		anyay F		0, , 00	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			±0.1 dB	measurement after the	
$ \begin{array}{c} \text{AWGN is specified as } 1.0 \text{ dB.} \\ \text{The absolute error of the} \\ \text{RXLEV is specified as } 1.0 \text{ dB.} \\ \text{8.2.3.2 Scenario 2: Only UTRA level} \\ \text{changed} \\ \hline \\ \begin{array}{c} \hat{I}_{cr}/I_{oc} \\ I_{oc} \\ \text{20.3 dB} \\ I_{oc} \\ \text{21.0 dB} \\ \text{RXLEV} \\ \text{20.1 dB} \\ \hline \\ \begin{array}{c} E_{CPICH}_E_c \\ I_{oc} \\ \text{20.1 dB} \\ \hline \\ I_{oc}/I_{oc} \\ \text{20.3 dB} \\ I_{oc}/I_{oc} \\ \text{20.3 dB} \\ \hline \\ I_{oc}/I_{oc} \\ \text{20.3 dB} \\ \hline \\ \begin{array}{c} E_{CPICH}_E_c \\ I_{or} \\ \end{array} \\ \text{20.1 dB} \\ \hline \\ \begin{array}{c} E_{CPICH}_E_c \\ I_{or} \\ \end{array} \\ \text{20.1 dB} \\ \hline \\ \begin{array}{c} E_{CPICH}_E_c \\ I_{or} \\ \end{array} \\ \text{20.1 dB} \\ \hline \\ \begin{array}{c} E_{CPICH}_E_c \\ I_{or} \\ \end{array} \\ \text{20.1 dB} \\ \hline \\ \begin{array}{c} E_{CPICH}_E_c \\ I_{or} \\ \end{array} \\ \hline \\ \begin{array}{c} E_{CPICH}_E_c \\ I_{or} \\ \end{array} \\ \text{20.1 dB} \\ \hline \\ \begin{array}{c} E_{CPICH}_E_c \\ I_{or} \\ \end{array} \\ \hline \\ \begin{array}{c} E_{CPICH}_E_c \\ I_{or} \\ \end{array} \\ \begin{array}{c} E_{CPICH}_E_c \\ I_{or} \\ \end{array} \\ \begin{array}{c} E_{CPICH}_E_c \\ I_{or} \\ \end{array} \\ \hline \\ \begin{array}{c} E_{CPICH}_E_c \\ I_{or} \\ \end{array} \\ \begin{array}{c} E_{CPICH}_E_c \\ E_{CPICH}_E_c \\ E_{CPICH}_E_c \\ \end{array} \\ \begin{array}{c} E_{CPICH}_E_c \\ E_{CPICH}_E_c \\ E_{CPICH}_E_c \\ E_{CPICH}_E_c \\ E_{CPICH}_E_c \\ \end{array} \\ \begin{array}{c} E_{CPICH}_E_c \\ E_{CPI$				loc/RXLEV based on power meter measurement after the	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$					
$I_{oc}/I_{oc} = 20.3 \mathrm{dB}$ $I_{oc} = 10.0 \mathrm{dB}$ $I_{oc} = \pm 1.0 \mathrm{dB}$ $EVICH _E_c = 10.1 \mathrm{dB}$ $I_{oc} = \pm 1.0 \mathrm{dB}$ $I_{oc} = \pm 0.3 \mathrm{dB}$ $I_{oc} = \pm 0.1 \mathrm{dB}$ $I_{oc} = 0.1 $				The absolute error of the RXLEV is specified as 1.0 dB.	
$I_{oc}/RXLEV \qquad \pm 0.3 \text{ dB}$ $I_{oc} \qquad \pm 1.0 \text{ dB}$ $RXLEV \qquad \pm 1.0 \text{ dB}$ $\frac{CPICH _E_c}{I_{or}} \qquad \pm 0.1 \text{ dB}$ $I_{oc} \qquad \pm 1.0 \text{ dB}$ $I_{oc1}/I_{oc2} \qquad \pm 0.3 \text{ dB}$ $\frac{CPICH _E_c}{I_{or}} \qquad \pm 0.1 \text{ dB}$ $\frac{E}{I_{oc}} \qquad \pm 0.1 dB$		\hat{I}_{or}/I_{oc}	±0.3 dB	Same as 8.2.3.1	
$\begin{array}{c} \text{RXLEV} & \pm 1.0 \text{ dB} \\ \\ \frac{CPICH_E_c}{I_{or}} & \pm 0.1 \text{ dB} \\ \\ 8.2.4 \text{ FDD/TDD cell re-selection} & \hat{I}_{or}/I_{oc} & \pm 0.3 \text{ dB} \\ I_{oc} & \pm 1.0 \text{ dB} \\ I_{oc1}/I_{oc2} & \pm 0.3 \text{ dB} \\ \\ \frac{CPICH_E_c}{I_{or}} & \pm 0.1 \text{ dB} \\ \\ 8.3 \text{ UTRAN Connected Mode Mobility} \\ 8.3.1 \text{ FDD/FDD Soft Handover} & \frac{During T1 \text{ and } \text{T2/T3/T4/T5/T6:}}{CPICH_E_c} & \pm 0.1 \text{ dB} \\ I_{or} & \pm 0.1 \text{ dB} \\ I_{or} & \pm 0.7 \text{ dB} \\ I_{oc} & \pm 1.0 \text{ dB} \\ \text{Relative delay of paths received from cell 2} \\ & \frac{During T1:}{During T1:} & \frac{During T1:}{During $	cnanged	$I_{oc}/RXLEV$	±0.3 dB		
$\frac{CPICH_E_c}{I_{or}} \qquad \pm 0.1 \text{ dB}$ 8.2.4 FDD/TDD cell re-selection $\frac{\hat{I}_{or}/I_{oc}}{I_{oc}} \qquad \pm 0.3 \text{ dB} \qquad \text{Same as 8.2.2.2}$ $\frac{I_{oc}}{I_{oc}} \qquad \pm 1.0 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} \qquad \pm 0.1 \text{ dB}$ 8.3 UTRAN Connected Mode Mobility $\frac{\text{During T1 and T2/T3/T4/T5/T6:}}{I_{or}} \qquad \pm 0.1 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} \qquad \pm 0.1 \text{ dB}$ $\frac{I_{or}(1)}{I_{or}} \qquad \pm 0.7 \text{ dB}$ $\frac{I_{oc}}{I_{oc}} \qquad \pm 1.0 \text{ dB}$ Relative delay of paths received from cell 2 with respect to cell 1: ± 0.5 chips $\frac{During T1:}{During T1:}$		I_{oc}	±1.0 dB		
I_{or} 8.2.4 FDD/TDD cell re-selection $I_{or}/I_{oc} \qquad \pm 0.3 \text{ dB} \qquad \text{Same as 8.2.2.2}$ $I_{oc} \qquad \pm 1.0 \text{ dB}$ $I_{oc1}/I_{oc2} \qquad \pm 0.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} \qquad \pm 0.1 \text{ dB}$ 8.3 UTRAN Connected Mode Mobility $\frac{During \text{ T1 and T2/T3/T4/T5/T6:}}{CPICH_E_c} \qquad \pm 0.1 \text{ dB}$ $I_{or} \qquad 10.1 \text{ dB}$ $I_{or} \qquad 10.1 \text{ dB}$ $I_{or} \qquad 10.1 \text{ dB}$ $I_{oc} \qquad \pm 1.0 \text{ dB}$ Relative delay of paths received from cell 2 with respect to cell 1: $\pm 0.5 \text{ chips}$ $\frac{During \text{ T1:}}{During \text{ T1:}}$		RXLEV	±1.0 dB		
$I_{oc} \qquad \qquad \pm 1.0 \text{ dB}$ $I_{oc1}/I_{oc2} \qquad \qquad \pm 0.3 \text{ dB}$ $\frac{CPICH _E_c}{I_{or}} \qquad \qquad \pm 0.1 \text{ dB}$ 8.3 UTRAN Connected Mode Mobility 8.3.1 FDD/FDD Soft Handover $\frac{During T1 \text{ and } T2/T3/T4/T5/T6:}{CPICH _E_c} \qquad \qquad \pm 0.1 \text{ dB}$ $I_{or} \qquad \qquad 1 \text{ dB}$ $I_{or} \qquad \qquad 1 \text{ dB}$ $I_{oc} \qquad \qquad \pm 1.0 \text{ dB}$ Relative delay of paths received from cell 2 with respect to cell 1: $\pm 0.5 \text{ chips}$ $\frac{During T1:}{During T1:}$			±0.1 dB		
$I_{oc} \qquad \qquad \pm 1.0 \text{ dB}$ $I_{oc1}/I_{oc2} \qquad \qquad \pm 0.3 \text{ dB}$ $\frac{CPICH _E_c}{I_{or}} \qquad \qquad \pm 0.1 \text{ dB}$ 8.3 UTRAN Connected Mode Mobility 8.3.1 FDD/FDD Soft Handover $\frac{During T1 \text{ and } T2/T3/T4/T5/T6:}{CPICH _E_c} \qquad \qquad \pm 0.1 \text{ dB}$ $I_{or} \qquad \qquad 1 \text{ dB}$ $I_{or} \qquad \qquad 1 \text{ dB}$ $I_{oc} \qquad \qquad \pm 1.0 \text{ dB}$ Relative delay of paths received from cell 2 with respect to cell 1: $\pm 0.5 \text{ chips}$ $\frac{During T1:}{During T1:}$	8.2.4 FDD/TDD cell re-selection	\hat{I} / I	+0 3 dB	Same as 8.2.2.2	
$I_{oc1}/I_{oc2} \qquad \pm 0.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} \qquad \pm 0.1 \text{ dB}$ $8.3 \text{ UTRAN Connected Mode Mobility}$ $8.3.1 \text{ FDD/FDD Soft Handover}$ $\frac{During \text{ T1 and T2/T3/T4/T5/T6:}}{CPICH_E_c} \qquad \pm 0.1 \text{ dB}$ $I_{or} \text{ (1)} \qquad \pm 0.7 \text{ dB}$ $I_{oc} \qquad \pm 1.0 \text{ dB}$ Relative delay of paths received from cell 2 with respect to cell 1: $\pm 0.5 \text{ chips}$ $\frac{During \text{ T1:}}{During \text{ T1:}}$					
$\frac{CPICH_E_c}{I_{or}} \pm 0.1 \text{ dB}$ 8.3 UTRAN Connected Mode Mobility 8.3.1 FDD/FDD Soft Handover $\frac{During \text{ T1 and T2/T3/T4/T5/T6:}}{CPICH_E_c} \pm 0.1 \text{ dB}$ $I_{or} \text{ 10 } \pm 0.7 \text{ dB}$ $I_{oc} \pm 1.0 \text{ dB}$ Relative delay of paths received from cell 2 with respect to cell 1: $\pm 0.5 \text{ chips}$					
I_{or} 8.3 UTRAN Connected Mode Mobility 8.3.1 FDD/FDD Soft Handover $\frac{During T1 \text{ and } T2/T3/T4/T5/T6:}{CPICH_E_c} \\ I_{or} \\ I_{or} \\ 1 \\ 0c \\ 0c$			±0.3 dB		
			±0.1 dB		
8.3.1 FDD/FDD Soft Handover	8.3 UTRAN Connected Mode Mobility	or			
I_{or} I_{or} I_{or} (1) $\pm 0.7 \text{ dB}$ I_{oc} $\pm 1.0 \text{ dB}$ Relative delay of paths received from cell 2 with respect to cell 1: $\pm 0.5 \text{ chips}$ $\underline{\text{During T1:}}$			<u>T5/T6:</u>		
I_{or} (1) $\pm 0.7 \mathrm{dB}$ I_{oc} $\pm 1.0 \mathrm{dB}$ Relative delay of paths received from cell 2 with respect to cell 1: $\pm 0.5 \mathrm{chips}$ $\mathrm{During} \mathrm{T1:}$			±0.1 dB		
I_{oc} $\pm 1.0 \text{ dB}$ Relative delay of paths received from cell 2 with respect to cell 1: $\pm 0.5 \text{ chips}$ During T1:			+0.7 dB		
Relative delay of paths received from cell 2 with respect to cell 1: ±0.5 chips During T1:					
		Relative delay of paths re	eceived from cell 2		
<u>During T2/T3/T4/T5/T6:</u>		During T2/T3/T4/T5/T6:			
I_{or} (2) relative to I_{or} (1) ±0.3 dB			±0.3 dB		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty	
	Assumptions: a) The contributing uncertainties for lor(n), channel power ratio, and loc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.		
	b) Within each cell, the uncertainty for lor(n), uncorrelated to each other.	and channel power ratio are	
	c) Across different cells, the channel power ramount of positive correlation from zero (und correlated).		
	d) The uncertainty for loc and lor(n) may have correlation from zero (uncorrelated) to one (f		
	e) The absolute uncertainty of lor(1) and the are uncorrelated to each other.	relative uncertainty of lor(2),	
	An explanation of correlation between uncert behind the assumptions, is recorded in 3GPF		
8.3.2 FDD/FDD Hard Handover	D : T4 T0 / T0		
8.3.2.1 Handover to intra-frequency cell	During T1 and T2 / T3:		
	$CPICH_E_c$ ±0.1 dB		
	I_{or}		
	I_{or} (1) ±0.7 dB		
	I_{oc} ±1.0 dB		
	During T1:		
	Already covered above		
	During T2 / T3:		
	I_{or} (2) relative to I_{or} (1) ±0.3 dB		
	Assumptions:		
	a) The contributing uncertainties for lor(n), channel power ratio, and loc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2.		
	b) Within each cell, the uncertainty for lor(n), and channel power ratio are uncorrelated to each other.		
	c) Across different cells, the channel por have any amount of positive correlation one (fully correlated).		
	d) The uncertainty for loc and lor(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).		
	e) The absolute uncertainty of lor(1) and lor(2), are uncorrelated to each other.	the relative uncertainty of	
	An explanation of correlation between uncertable behind the assumptions, is recorded in 3GPF		

Clause	Maximum Test Syster	n Uncertainty	Derivation of Test System Uncertainty
8.3.2.2 Handover to inter-frequency cell	Channel 1 during T1 and	Г2 / Т3 <u>:</u>	
	$CPICH _E_c$	0.4.15	
	$\overline{I_{or}}$	±0.1 dB	
		. 0. 710	
	I_{or} (1)	±0.7 dB	
	I_{oc} (1)	±1.0 dB	
	Channel 2 during T1 and	Г2 / Т3·	
	I_{oc} (2)	±1.0 dB	
	00.		
	Channel 2 during T1:		
	Already covered above		
	Channel 2 during T2 / T3:		
	$CPICH _E_c$		
	$\overline{I_{or}}$	±0.1 dB	
		. 0. 710	
	I_{or} (2)	±0.7 dB	
	Assumptions:		
		ertainties for lor(n), channel power ratio, and
	loc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for lor(n), and channel power ratio are uncorrelated to each other. c) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).		
	d) The uncertainty for Id	oc(n) and lor(n) n	nay have any amount of
	 d) The uncertainty for loc(n) and lor(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated) e) The absolute uncertainties for lor(1) and lor(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). 		
	f) The absolute uncertainties for loc(1) and loc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fu correlated).		
	behind the assumptions, is		tainties, and of the rationale PTR 34 902 [24].
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover from UTRAN FDD to GSM	TBD		
8.3.5 Cell Re-selection in CELL_FACH			

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty	
8.3.5.1 One frequency present in the neighbour list	During T1 and T2:		
	$\frac{CPICH _E_c}{I_{or}} $ ±0.1 dB		
	I_{oc} ±1.0 dB		
	$\frac{\text{During T1:}}{I_{or}(\text{2})} \qquad \qquad \pm 0.7 \text{ dB}$		
	I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB		
	$\frac{\text{During T2:}}{I_{or} \text{ (1)}} \\ \pm 0.7 \text{ dB}$		
	I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB		
	Assumptions: a) The contributing uncertainties for lor(loc are derived according to ETR 273-1-factor of k=2.		
	b) Within each cell, the uncertainty for loratio are uncorrelated to each other.	or(n), and channel power	
	c) The relative uncertainties for lor(n) across different have any amount of positive correlation from zero (uncone (fully correlated).d) Across different cells, the channel power ratio unce have any amount of positive correlation from zero (uncone (fully correlated).		
	e) The uncertainty for loc and lor(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated).		
	f) The absolute uncertainty of lor(2) at T1 and the relative uncertainty of lor(1, 3, 4, 5, 6), are uncorrelated to each similarly, the absolute uncertainty of lor(1) at T2 and uncertainty of lor(2, 3, 4, 5, 6), are uncorrelated to each		
	An explanation of correlation between uncer behind the assumptions, is recorded in 3GP		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.2 Two frequencies present in the	Channel 1 during T1 and T2:	Choortainty
neighbour list	CDICH E	
	$CPICH_E_c$ ±0.1 dB	
	I_{or}	
	1 (4)	
	I_{oc} (1) $\pm 1.0 \text{ dB}$	
	Channel 1 during T1:	
	I_{or} (1) ±0.7 dB	
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
	Channel 1 during T2:	
	I_{or} (1) ±0.7 dB	
	I (2 4) relative to I (4)	
	I_{or} (3, 4) relative to I_{or} (1) ± 0.3 dB	
	Channel 2 during T1 and T2:	
	-	
	$CPICH_E_c$ ±0.1 dB	
	I_{or}	
	I_{oc} (2) ±1.0 dB	
	Channel 2 during T1:	
	$I_{or}(2)$ ±0.7 dB	
	1 or (2)	
	I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	or () or ()	
	Channel 2 during T2:	
	I_{or} (2) ±0.7 dB	
	I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	
	Assumptions:	
	a) to e): Same as for the one-frequency	test 8.3.5.1.
	f) The absolute uncertainty of Ior(1) and	
	lor(3, 4), are uncorrelated to each other.	
	uncertainty of lor(2) and the relative unc	
	uncorrelated to each other.	
	g) The absolute uncertainties for lor(1) a	
	amount of positive correlation from zero correlated).	(uncorrelated) to one (fully
	,	- n - l l - n (0) - n - n - l - n - n - n
	h) The absolute uncertainties for loc(1) a amount of positive correlation from zero	
	correlated).	(anotherated) to one (rully
	An explanation of correlation between uncert	tainties, and of the rationale
	behind the assumptions is recorded in 3GPP	
8.3.5.3 Cell Re-selection to GSM 8.3.6 Cell Re-selection in CELL_PCH	TBD	
8.3.6.1 One frequency present in the	Same as 8.2.2.1	Same as 8.2.2.1
neighbour list		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.3.7 Cell Re-selection in URA_PCH 8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control		
8.4.1 RRC Re-establishment delay	$ \begin{array}{c c} \underline{Settings.} \\ \hat{I}_{or}/I_{oc} & \pm 0.3 \text{ dB} \\ \hline \underline{I_{oc}} & \pm 1.0 \text{ dB} \\ \hline \underline{CPICH} _E_c & \pm 0.1 \text{ dB} \\ \hline I_{or} & \end{array} $	$\begin{array}{c} \underline{0.1~\text{dB uncertainty in}} \\ \underline{\text{CPICH_Ec ratio}} \\ \\ \underline{0.3~\text{dB uncertainty in}} \hat{I}_{or} / I_{oc} \\ \\ \underline{\text{based on power meter}} \\ \underline{\text{measurement after the}} \\ \underline{\text{combiner}} \end{array}$
		Overall error is the sum of the \hat{I}_{or}/I_{oc} ratio error and the CPICH_Ec/lor ratio.
		The absolute error of the AWGN is specified as 1.0 dB
8.4.2 Random Access	Settings. $\hat{I}_{or}/I_{oc} \qquad \qquad \pm 0.3 \text{ dB}$ $I_{oc} \qquad \qquad \pm 1.0 \text{ dB}$	0.1 dB uncertainty in AICH_Ec ratio 0.3 dB uncertainty in \hat{I}_{or}/I_{oc}
	$\frac{AICH_E_c}{I_{or}}$ ±0.1 dB	based on power meter measurement after the combiner
		Overall error is the sum of the \hat{I}_{or}/I_{oc} ratio error and the AICH_Ec/lor ratio.
		The absolute error of the AWGN is specified as 1.0 dB
	Measurements: Power difference. ± 1dB Maximum Power: same as 5.5.2	Power difference: Assume symmetric meas error ±1.0 dB comprising RSS of: - 0.7 dB downlink error plus -0.7 dB meas error.
		Maximum Power: Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Olamas	Test Talaren
Clause	Test Tolerance
8.2 Idle Mode Tasks 8.2.2 Cell Re-Selection	
8.2.2.1 Scenario 1: Single carrier case	During T1 and T2: +0.60 dB for all Cell 1 and 2 Ec/lor ratios -0.50 dB for all Cell 3, 4,5, 6 Ec/lor ratios +0.03 dB for lor(3, 4, 5, 6)
	<u>During T1:</u> -0.27 dB for lor(1) +0.13 dB for lor(2)
	<u>During T2:</u> +0.13 dB for lor(1) -0.27 dB for lor(2)
8.2.2.2 Scenario 2: Multi carrier case	Channel 1 during T1 and T2: +0.70 dB for all Cell 1 Ec/lor ratios -0.80 dB for all Cell 3 and 4 Ec/lor ratios
	Channel 1 during T1: -0.01 dB for lor(1) -0.01 dB for lor(3, 4) No change for loc(1)
	Channel 1 during T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.80 dB for loc(1)
	Channel 2 during T1 and T2: +0.70 dB for all Cell 2 Ec/lor ratios -0.80 dB for all Cell 5 and 6 Ec/lor ratios
	Channel 2 during T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.80 dB for loc(2)
	Channel 2 during T2: -0.01 dB for lor(2) -0.01 dB for lor(5, 6) No change for loc(2)
8.2.3 UTRAN to GSM Cell Re-Selection 8.2.3.1 Scenario 1: Both UTRA and GSM level changed	0.3 dB for \hat{I}_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor 0.3 dB for loc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level changed	0.3 dB for \hat{I}_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor 0.3 dB for loc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for \hat{I}_{or}/I_{oc} 0.1 dB for CPICH_Ec/lor 0.3 dB for loc1/loc2
8.3 UTRAN Connected Mode Mobility	

Clause	Test Tolerance
8.3.1 FDD/FDD Soft Handover	During T1 and T2/T3/T4/T5/T6: +0.70 dB for all Cell 1 Ec/lor ratios
	Relative delay: {-147.5 +147.5} chips
	<u>During T1:</u> Already covered above
	During T2/T3/T4/T5/T6: +0.70 dB for all Cell 2 Ec/lor ratios
8.3.2 FDD/FDD Hard Handover	
8.3.2.1 Handover to intra-frequency cell	During T1 and T2 / T3: +0.70 dB for all Cell 1 Ec/lor ratios
	During T1: Already covered above
	During T2 / T3: +0.70 dB for all Cell 2 Ec/lor ratios
8.3.2.2 Handover to inter-frequency cell	Channel 1 during T1 and T2 / T3: +0.80 dB for all Cell 1 Ec/lor ratios
	Channel 2 during T1: Not applicable
	Channel 2 during T2 / T3: +0.80 dB for all Cell 2 Ec/lor ratios
8.3.3 FDD/TDD Handover	TBD
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the neighbour list	During T1 and T2: +0.60 dB for all Cell 1 and 2 Ec/lor ratios -0.50 dB for all Cell 3, 4, 5, 6 Ec/lor ratios +0.03 dB for lor(3, 4, 5, 6)
	During T1: -0.27 dB for lor(1) +0.13 dB for lor(2)
	<u>During T2:</u> +0.13 dB for lor(1) -0.27 dB for lor(2)

Clause	Test Tolerance
8.3.5.2 Two frequencies present in the	Channel 1 during T1 and T2:
neighbour list	+0.60 dB for all Cell 1 Ec/lor ratios
Tioighbour not	-0.70 dB for all Cell 3 and 4 Ec/lor ratios
	Channel 1 during T1:
	+0.05 dB for lor(1)
	+0.05 dB for lor(3, 4)
	No change for loc(1)
	Channel 1 during T2:
	+0.75 dB for lor(1)
	-0.05 dB for lor(3, 4)
	-1.60 dB for loc(1)
	Channel 2 during T1 and T2:
	+0.60 dB for all Cell 2 Ec/lor ratios -0.70 dB for all Cell 5 and 6 Ec/lor ratios
	Channel 2 during T1:
	+0.75 dB for lor(2)
	-0.05 dB for lor(5, 6)
	-1.60 dB for loc(2)
	Channel 2 during T2:
	+0.05 dB for lor(2)
	+0.05 dB for lor(5, 6)
	No change for loc(2)
8.3.6 Cell Re-selection in CELL_PCH	
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1
8.3.6.2 Two frequencies present in the	Same as 8.2.2.2
neighbour list	Same as 6.2.2.2
8.3.7 Cell Re-selection in URA_PCH	
8.3.7.1 One frequency present in the	Same as 8.2.2.1
neighbour list	Samo do 6.2.2.1
8.3.7.2 Two frequencies present in the	Same as 8.2.2.2
neighbour list 8.4 RRC Connection Control	
8.4.1 RRC Re-establishment delay	TBD
	0 dB for \hat{I}_{or}/I_{oc}
	0 dB for any Ec/lor
	Zero TT is applied, as level settings are
	not critical with respect to the outcome of
	the test.
8.4.2 Random Access	Settings:
	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for AICH Ec/lor
	Measurements:
	Power difference: ± 1dB
	Maximum Power: -1dB / +0.7dB
	Maximum Fower. Tab / To. Tab

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121	
8.2 Idle Mode Tasks		, ,		
8.2.2 Cell Re-Selection				
8.2.2.1 Scenario 1: Single carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].			
	During T1 and T2:	During T1 and T2:	During T1 and T2:	
	Cells 1 and 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT	
	Cells 3, 4, 5, 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB Ior(3, 4, 5, 6) = -69.73 dBm	-0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for lor(3,	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ior(3, 4, 5, 6) + TT	
		4, 5, 6)		
	During T1:	During T1:	During T1:	
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	-0.27 dB for lor(1) +0.13 dB for lor(2)	lor(1) + TT lor(2) + TT	
	During T2:	During T2:	During T2:	
	lor(1) = -59.73 dBm lor(2) = -62.73 dBm	+0.13 dB for lor(1) -0.27 dB for lor(2)	lor(1) + TT lor(2) + TT	
8.2.2.2 Scenario 2: Multi carrier case		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].	
	Channel 1 during T1 and	Channel 1 during	Channel 1 during T1 and T2:	
	<u>T2:</u>	T1 and T2:	-	
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT	
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	-0.80 dB -0.80 dB -0.80 dB -0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT	
	Channel 1 during T1: lor(1) = -73.39 dBm lor(3, 4) = -77.39 dBm loc(1) = -70.00 dBm	Channel 1 during T1: -0.01 dB for lor(1) -0.01 dB for lor(3,4) 0.00 dB for loc(1)	Channel 1 during T1: lor(1) + TT lor(3, 4) + TT loc(1) + TT	

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 1 during T2:	Channel 1 during	Channel 1 during T2:
	lor(1) = -67.75 dBm lor(3, 4) = -74.75 dBm loc(1) = -70.00 dBm	T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.80 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 5 and 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	-0.80 dB -0.80 dB -0.80 dB -0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 2 during T1:	Channel 2 during	Channel 2 during T1:
	lor(2) = -67.75 dBm lor(5, 6) = -74.75 dBm loc(2) = -70.00 dBm	T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.80 dB for loc(2)	lor(2) + TT lor(5, 6) + TT loc(2) + TT
	Channel 2 during T2:	Channel 2 during	Channel 2 during T2:
	lor(2) = -73.39 dBm lor(5, 6) = -77.39 dBm loc(2) = -70.00 dBm	T2: -0.01 dB for lor(2) -0.01 dB for lor(5,6) 0.00 dB for loc(2)	lor(2) + TT lor(5, 6) + TT loc(2) + TT
8.2.3 UTRAN to GSM Cell Re-Selection	TBD		
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$ $Ior/loc = 0 \text{ dB}$	0.1 dB for $\underline{CPICH_E_c}$ I_{or} 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 0.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$ $lor/loc = -5 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio - TT}$ $ \text{Ior/loc} = \text{ratio - TT}$ $ \text{(loc/Rxlev)}_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} - \text{TT}$ $ \text{Ior/loc} = -5.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}$:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH _{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $lor/loc = 20 \text{ dB}$	0.1 dB for CPICH_E _c I _{or} 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 20.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$ $lor/loc = 20 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 20.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
8.2.4 FDD/TDD cell re- selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24]. During T1 and T2/T3/T4/T5/T6: Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT (-148+TT 148-TT) chips During T1: Already covered above During T2/T3/T4/T5/T6: Ec/lor ratio + TT Ec/lor ratio + TT
	SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT
8.3.2 FDD/FDD Hard Handover			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121				
8.3.2.1 Handover to intra-frequency cell	Because the relationships be are complex, it is not possible	Because the relationships between the Test system uncer are complex, it is not possible to give a simple derivation of document. The analysis is recorded in 3GPP TR 34 902 [2] During T1 and T2 / T3: During T1 / T2 / T3: During T1 / T2 / T3: During T1 / T3 / During T1 / T2 / T3: During T1 / T3 / During T1 / During T1 / T3 / During T1 / During					
	During T1 and T2 / T3:	During T1 and T2 / T3:					
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT				
	During T1:	During T1:	During T1:				
	Already covered above	Covered above	Already covered above				
	During T2 / T3:	During T2 / T3:	During T2 / T3:				
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT				
8.3.2.2 Handover to inter-frequency cell		uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].					
	Channel 1 during T1 and T2 / T3:	Channel 1 during T1 and T2 / T3:	Channel 1 during T1 and T2 / T3:				
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.80 dB +0.80 dB +0.80 dB +0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT				
	Channel 2 during T1:	Channel 2 during	Channel 2 during T1:				
	Not applicable	T1: Not applicable	Not applicable				
	Channel 2 during T2 / T3:	Channel 2 during T2 / T3:	Channel 2 during T2 / T3:				
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.80 dB +0.80 dB +0.80 dB +0.80 dB	Ec/lor ratio + TT				
8.3.3 FDD/TDD Handover	TBD						
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD						
8.3.5 Cell Re-selection in CELL_FACH							
8.3.5.1 One frequency present in the neighbour list	Because the relationships be are complex, it is not possible document. The analysis is re-	e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].				

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121		
	During T1 and T2:	During T1 and T2:	During T1 and T2:		
	Cells 1 and 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT		
	Cells 3, 4, 5, 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.50 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB	Ec/lor ratio + TT		
	lor(3, 4, 5, 6) = -69.73 dBm	+0.03 dB for lor(3, 4, 5, 6)	lor(3, 4, 5, 6) + TT		
	During T1:	During T1:	During T1:		
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	-0.27 dB for lor(1) +0.13 dB for lor(2)	lor(1) + TT lor(2) + TT		
	During T2:	During T2:	During T2:		
	lor(1) = -59.73 dBm lor(2) = -62.73 dBm	+0.13 dB for lor(1) -0.27 dB for lor(2)	lor(1) + TT lor(2) + TT		
8.3.5.2 Two frequencies present in the neighbour list		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this		
the heighboar not	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:		
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT		
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Ec/lor ratio + TT		
	Channel 1 during T1:	Channel 1 during	Channel 1 during T1:		
	lor(1) = -71.85 dBm lor(3, 4) = -76.85 dBm loc(1) = -70.00 dBm	T1: +0.05 dB for lor(1) +0.05 dB for lor(3,4) 0.00 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT		
	Channel 1 during T2:	Channel 1 during	Channel 1 during T2:		
	lor(1) = -67.75 dBm lor(3, 4) = -74.75 dBm loc(1) = -70.00 dBm	T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.60 dB for loc(1)	lor(1) + TT lor(3, 4) + TT loc(1) + TT		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT
	Cells 5 and 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB S-CCPCH_Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Ec/lor ratio + TT
	Channel 2 during T1: lor(2) = -67.75 dBm lor(5, 6) = -74.75 dBm loc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.60 dB for loc(2)	Channel 2 during T1: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
	Channel 2 during T2: lor(2) = -71.85 dBm lor(5, 6) = -76.85 dBm loc(2) = -70.00 dBm	Channel 2 during T2: +0.05 dB for lor(2) +0.05 dB for lor(5,6) 0.00 dB for loc(2)	Channel 2 during T2: lor(2) + TT lor(5, 6) + TT loc(2) + TT
8.3.6 Cell Re-selection in CELL_PCH			
8.3.6.1 One frequency present in the	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 10.27 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ loc unchanged
	Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1		$Ior/loc = 10.57 dB$ $\frac{CPICH _E_c}{I_{or}} -9.9 dB$:
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$	Formulas: $\frac{CPICH _E_c}{I_{or}} = \text{ratio} + \text{TT}$
	I_{oc} = - 70 dBm	0.3 dB for lor/loc	lor/loc = ratio + TT
	lor/loc = 2.2 dB		loc unchanged
	Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1		loc ratio unchanged
			lor/loc = 2.5 dB
			$rac{CPICH_E_c}{I_{or}}$ -9.9 dB:
8.3.7 Cell Re-selection in URA_PCH			
8.3.7.1 One frequency present in the neighbour list	Same as 8.2.2.1	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control	TBD		
8.4.1 RRC Re- establishment delay			
8.4.1.1 Test 1	Cell 1, T1: CPICH Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB DCH_Ec/lor = -17 dB lor/loc = 2.39 dB	$\frac{\text{0.1 dB for}}{\text{CPICH}_E_c}$ $\frac{I_{or}}{\text{0.3 dB for lor/loc}}$	Level settings in either direction are not critical with respect to the outcome of the test.
	Cell 1, T2: lor/loc = -infinity		
	Cell 2, T1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB Ior/loc = 4.39 dB		
	Cell 2, T2: CPICH Ec/lor = -10 dB PCCPCH Ec/lor = -12 dB SCH Ec/lor = -12 dB PICH_Ec/lor = -15 dB lor/loc = 0.02 dB		

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121
	TS 25.133	(TT)	
8.4.1.2 Test 2	Cell 1, T1:	0.1 dB for	Level settings in either direction are
	CPICH Ec/lor = -10 dB	$CPICH_{-}E_{c}$	not critical with respect to the
	PCCPCH Ec/lor = -12 dB		outcome of the test.
	SCH Ec/lor = -12 dB	I_{or}	<u>odtoomo or tho toot.</u>
	PICH Ec/lor = -15 dB	0.3 dB for lor/loc	
	DCH_Ec/lor = -17 dB		
	$\frac{DCH_{EC/101} = -17 \text{ dB}}{\text{lor/loc} = -3.35 \text{ dB}}$		
	101/100 = -3.33 UD		
	Coll 1 T2:		
	Cell 1, T2:		
	<u>lor/loc = -infinity</u>		
	Call O. T4.		
	Cell 2, T1:		
	<u>lor/loc = -infinity</u>		
	O-II O TO		
	Cell 2, T2:		
	CPICH_Ec/lor = -10 dB		
	$\frac{\text{PCCPCH} \cdot \text{Ec/lor} = -12 \text{ dB}}{\text{Ec/lor}}$		
	$SCH_Ec/lor = -12 dB$		
	PICH_Ec/lor = -15 dB		
	lor/loc = 0.02 dB		
8.4.2 Random Access	RACH power difference	Measurement	Test parameter settings
	nominal 3dB ± 2dB UE	TT:Power	unchanged.Power
	setting uncertainty	difference ±	measurement:Upper limit +TT
		1dBMaximum	Lower limit -TT
		Power-1dB / +0.7dB	

3GPP TSG-T1 Meeting T1 #24 Toronto, Canada, 26th – 30th July 2004

CHANGE REQUEST									
*	34.12	21 CR 417	жre	'	¥	Current vers	ion:	5.4	*
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the \mathbb{H} symbols.									
Proposed change affects: UICC apps# ME X Radio Access Network Core Network									
Title:	€ Comple	tion of Transmitter	Intermodula	ation tes	st 5.12	2			
Source:	€ Sieme	ns AG							
Work item code:	€ TEI					<i>Date:</i> ∺	24/7/2	004	
Category:	F (0 A (0 B (0 C (0 D (0 Detailed	of the following cate, correction) corresponds to a conaddition of feature), functional modification editorial modification explanations of the all in 3GPP TR 21.900.	rection in an on of feature)) above catego			Use <u>one</u> of 2 ?) R96 R97 R98 R99 Rel-4	Rel-5 the follow (GSM Ph (Release (Release (Release (Release (Release (Release (Release (Release	nase 2) 1996) 1997) 1998) 1999) 44)	eases:
Reason for chang	ge: Ж <mark>С</mark>	larification of test li	mits			7107 0	1. 10.0000	<u></u>	

Consequences if	${\mathfrak R}$	Incomplete test misleading referances to a zero tolerance for a legally important
not approved:		limit.
Clauses affected:	${\mathfrak R}$	5.12
Other specs affected:	¥	Y N Other core specifications # Test specifications O&M Specifications

Summary of change: # completion of test, by removal of misleading use of test tolerances,

How to create CRs using this form:

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Other comments:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked \(\mathcal{H} \) contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3)	3) With "track changes" disabled, paste the entire CR form (the clause containing the first piece of changed text. Delethe change request.	use CTRL-A to select it) into the specification just in front of ete those parts of the specification which are not relevant to

5.12 Transmit Intermodulation

5.12.1 Definition and applicability

The transmit intermodulation performance is a measure of the capability of the transmitter to inhibit the generation of signals in its non linear elements caused by presence of the wanted signal and an interfering signal reaching the transmitter via the antenna.

UE(s) transmitting in close vicinity of each other can produce intermodulation products, which can fall into the UE, or Node B receive band as an unwanted interfering signal. The UE transmit intermodulation attenuation is defined by the ratio of the RRC filtered mean power of the wanted signal to the RRC filtered mean power of the intermodulation product when an interfering CW signal is added at a level below the wanted signal.

The requirements and this test apply to all types of UTRA for the FDD UE.

5.12.2 Minimum Requirements

The UE transmit intermodulation shall not exceed the described value in table 5.12.1.

Table 5.12.1: Transmit Intermodulation

CW Signal Frequency Offset from Transmitting Carrier	5MHz	10MHz
Interference CW Signal Level	-40	dBc
Intermodulation Product	-31 dBc	-41 dBc

The normative reference for this requirement is TS 25.101 [1] clause 6.7.1.

5.12.3 Test purpose

To verify that the UE transmit intermodulation does not exceed the described value in table 5.12.1.

An excess transmit intermodulation increases transmission errors in the up link own channel when other transmitter exists nearby.

5.12.4 Method of test

5.12.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect the SS to the UE antenna connector as shown in figure A.2.
- 2) A call is set up according to the Generic call setup procedure.
- 3) Enter the UE into loopback test mode and start the loopback test.

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

5.12.4.2 Procedure

- 1) Set and send continuously Up power control commands to the UE until the UE output power shall be maximum level.
- 2) Set the frequency of the CW generator to the offset 1 or offset 2 as shown in table 5.12.2.

- 3) Measure the RRC filtered mean power of the UE
- 4) Search the intermodulation product signal, then measure the RRC filtered mean power of transmitting intermodulation, and calculate the ratio with the power measured in step 3).
- 5) Repeat the measurement with another tone offset.

5.12.5 Test requirements

The ratio derived in step 4), shall not exceed the described value in table 5.12.2

Table 5.12.2: Transmit Intermodulation

CW Signal Frequency Offset from Transmitting Carrier	5MHz	10MHz			
Interference CW Signal Level	-40 dBc				
Intermodulation Product	[31 + TT] -31-dBc	[41 + TT] -41 dBc			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Toronto, Canada, 26 - 30 July 2004

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Other comments: # This CR is applicable for UE's supporting R'99 or later.

How to create CRs using this form:

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- 1) Fill out the above form. The symbols above marked \(\mathcal{H} \) contain pop-up help information about the field that they are closest to.
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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.11.4.2 Procedure

- 1) The UE is switched on.
- 2) An RRC connection is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_PCH state.
- 3) The SS transmits the Paging type 1 message with used paging identity being a UTRAN identity and including the UE's assigned U-RNTI
- 4) If the UE responds with CELL UPDATE message within 8 seconds, then a success is recorded. If the UE does not respond with CELL UPDATE message within 8 seconds, a failure is recorded.
- 5) Repeat steps 3-4 according to Annex F.6.2 table 6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and clause 6.1.1 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION RADIO BEARER SETUP (STEP 2)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	6
Downlink information for each radio link - Primary CPICH info	Deference to TC 24.400 eleves 6.4 "Defeult cettings
- Primary scrambling code	Reference to TS 34.108 clause 6.1 "Default settings (FDD)" 400

SYSTEM INFORMATION BLOCK TYPE5 (STEP 2)

Information Element	Value/remark	
- FACH/PCH information		
- TFS	(PCH)	
- Rate matching attribute	256	
- PICH info		
- Number of PI per frame	72	

8.3.6.1.4.2 Procedure

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.6.1.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) An RRC connection is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_PCH state on Cell 2 and then the SS waits for this process to complete.
- 4) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.6.1.3.
- 5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.6.1.3.
- 8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.
- 10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s (Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link - Primary CPICH info	
- Primary scrambling code	Reference to TS 34.108 clause 6.1 "Default settings (FDD)" 400

Contents of CELL UPDATE CONFIRM message for CELL_PCH

Information Element	Value/remark
RRC transaction identifier	0
Activation time	Not Present
RRC State indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

8.3.6.2.4.2 Procedure

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.6.2.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) A RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in CELL_PCH state on cell 2. The SS waits for this process to complete.
- 4) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.6.2.3.
- 5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.6.2.3.
- 8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.
- 10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link - Primary CPICH info	
- Primary scrambling code	Reference to TS 34.108 clause 6.1 "Default settings (FDD)" 100

Contents of CELL UPDATE CONFIRM message for CELL_PCH

Information Element	Value/remark
RRC transaction identifier	0
Activation time	Not Present
RRC State indicator	CELL_PCH
UTRAN DRX cycle length coefficient	7

Contents of CELL UPDATE CONFIRM message for CELL_PCH

Information Element	Value/remark				
RRC transaction identifier	0				
Activation time	Not Present				
RRC State indicator	CELL_PCH				
UTRAN DRX cycle length coefficient	7				

8.3.7.1.4.2 Procedure

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.7.1.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) An RRC connection is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the URA_PCH state on Cell 2 and then the SS waits for this process to complete.
- 4) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.7.1.3.
- 5) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After a total of another 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.7.1.3.
- 8) If the UE responds on Cell 2 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 10.
- 10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	100

Contents of URA UPDATE CONFIRM message for URA_PCH

Information Element	Value/remark
RRC transaction identifier	0
RRC state indicator	URA_PCH
UTRAN DRX cycle length coefficient	7
URA identity	000000000000010 B

8.3.7.2.4.2 Procedures

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.7.2.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) An RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in URA_PCH state on cell 2. The SS waits for this process to complete.
- 4) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.7.2.3.
- 5) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.7.2.3.
- 8) If the UE responds on Cell 2 with a PRACH (URA UPDATE message cause "URA reselection") within 8s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step 10.
- 10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7
Downlink information for each radio link	
- Primary CPICH info	
- Primary scrambling code	100

Contents of URA UPDATE CONFIRM message for URA_PCH

Information Element	Value/remark
RRC transaction identifier	0
RRC state indicator	URA_PCH
UTRAN DRX cycle length coefficient	7
URA identity	000000000000010 B

Toronto, Canada, 26 - 30 July 2004

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.5.1.4.2 Procedure

- 1) The SS activates cell 1-6 with RF parameters set up according to T1 in table 8.3.5.1.5.
- 2) The UE is switched on.
- 3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3-5 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.
- 4) After 15 seconds from completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.1.5.
- 5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.1.5.
- 8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.
- 10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.
- NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore the cell re-selection delay shall be less than 1.7 s.(Minimum requirement + 100ms). Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Contents of CELL UPDATE CONFIRM message for CELL_FACH

Information Element	Value/remark
RRC transaction identifier	0
Activation time	Not Present
New C-RNTI	010101010101010 B
RRC State indicator	CELL_FACH

8.3.5.2.4.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1 in table 8.3.5.2.5.
- 2) The UE is switched on.
- 3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3-5 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.
- 4) After 15 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.2.5.
- 5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.
- 7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.2.5.
- 8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.
- 10) Steps 4 to 10 are repeated until the confidence level according to annex F.6.2 is achieved.
- NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore the cell re-selection delay shall be less than 2.0 s.(Minimum requirement + 100ms).

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

Contents of CELL UPDATE CONFIRM message for CELL_FACH

Information Element	Value/remark
RRC transaction identifier	0
Activation time	Not Present
New C-RNTI	010101010101010 B
RRC State indicator	CELL_FACH

8.3.5.3.4.2 Procedure

- 1) The SS activates cell 1-2 with RF parameters set up according to T1 in tables 8.3.5.3.4 and 8.3.5.3.5.
- 2) The UE is switched on.
- 3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3-5 to place the UE in CELL_FACH and the SS waits for this process to complete.
- 4) After 5 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in tables 8.3.5.1.4 and 8.3.5.1.5.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 5.51 s (=5.5 s + T_{RA} s) from the beginning of time period T2 then a success is recorded and the SS completes the location update procedure in GSM and the procedure continues with step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 10s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS completes the location update procedure in GSM and the procedure continues with step 7.
- 7) After 10 s from the beginning of time period T2, the parameters are changed to those defined for T1 in tables 8.3.5.1.4 and 8.3.5.1.5.
- 8) The SS waits for random access requests from the UE on cell 1. The SS completes the location update procedure in UTRA
- 9) Repeat step 3) to 8) until the confidence level according to annex F.6.2 is achieved.

8.7.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

- 1) Connect SS to the UE antenna connector as shown in figure A.1
- 2) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.35. The RF parameters for Test 1 are set up according to table 8.7.5.1.2.

In this case all cells are in the same frequency. Table 8.7.5.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table 8.7.5.1.2: SFN-SFN observed time difference type 1 Intra frequency test parameters

Parameter	Unit	Te	st 1	Tes	Test 2		Test 3	
Farameter	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel numb	er	Char	nel 1	Char	Channel 1		Channel 1	
CPICH_Ec/lor	dB		10	-1	10	-1	0	
PCCPCH_Ec/lor	dB		12	-1	12	-1	2	
SCH_Ec/lor	dB		12	-1	12	-1	2	
PICH_Ec/lor	dB		15	-1	15	-1	5	
S-CCPCH_Ec/lor	dB		12	-1	12	-1	2	
OCNS_Ec/lor	dB -1.29		.29	-1.29		-1.29		
Îor/loc	dB 10.5		10.5		10.5			
loc	dBm/ 3.84 MHz		dB = loc,		dB = loc,		dB = loc,	
100	GBIII/ 6.04 WII 12	No	te 1	No	te 1	Not	te 1	
Band I						-6	94	
lo Band II	dBm/3.84 MHz	/3.84 MHz -50		-72		-92		
Band III						-6	91	
SFN-SFN observed time	ed time		·					
difference type 1 as spec	ified chip	X Note 2						
in TS 25.215 [22				INO	le 2			
Propagation condition	-	AW	′GN	AW	'GN	AW	AWGN	

NOTE 1: *loc* level shall be adjusted according the total signal power *lo* at receiver input and the geometry factor *for/loc*.

NOTE2: For example, x= 491520 or 9830399. This is a calculated value using the parameters "OFF" and "Tm" as specified in TS 25.215 [22].

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

3GPP TSG-T1 Meeting #24 Toronto, Canada, 24.-30. July, 2004

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.8.3.4 Method of test

7.8.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect SS, multipath fading simulator and an AWGN source to the UE antenna connector as shown in figure A.10.
- 2) Set up a call according to the Generic call setup procedure.
- 3) Enter the UE into loopback test mode and start the loopback test.
- 4) RF parameters are set up according to table 7.8.3.3. Stage 1 is used for the power control to converge and during Stage 2 the maximum downlink power is limited by UTRAN.
- 5) SS signals to UE target quality value on DTCH as specified in table 7.8.3.1. SS will vary the physical channel power in downlink according to the TPC commands from UE. Downlink power control mode (DPC_MODE) 0 shall be used.

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

7.8.3.4.2 Procedure

- 1) RF parameters are set up according to table 7.8.3.3. Stage 1 is used for the power control to converge and during Stage 2 the maximum downlink power is limited by UTRAN.
- 2) SS signals to UE target quality value on DTCH as specified in table 7.8.3.1. SS will vary the physical channel power in downlink according to the TPC commands from UE. Downlink power control mode (DPC MODE) 0 shall be used.
- <u>34)</u>Measure $\underline{DPCH_{-}E_{c}}$ power ratio during stage 3 according to table 7.8.3.3.
- 4) Repeat steps 1 3328 times.

Note: The number of repetitions (328) is derived from minimum testing time for 3 km/h fading channels (Table F.6.1.6.2; 164 seconds).

7.8.3.5 Test Requirements

The test parameters are specified in table 7.8.3.3.

Table 7.8.3.3: Test parameter for downlink power control, wind-up effects

Parameter	Test 1			Unit		
	Stage 1	Stage 2	Stage 3			
Time in each stage	>15	5	0,5	S		
\hat{I}_{or}/I_{oc}		5,6		dB		
I_{oc}		-60		dBm/3,84 MHz		
Information Data Rate	12,2			kbps		
Quality target on DTCH	0,01			BLER		
Propagation condition	Case 4					
Maximum_DL_Power (note)	7 -6,2 7		dB			
Minimum_DL_Power (note)	-18			dB		
DL Power Control step size,	1			dB		
Δ_{TPC}	I			uБ		
Limited Power Increase	"Not used"			-		
NOTE: Power is compared to P-CPICH as specified in [9].						

The downlink $\underline{DPCH}_{\underline{E}_c}$ power ratio values, which are averaged over one slot, shall be lower than the level specified in table 7.8.3.4 during stage 3 more than 90 % of the time.

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6 Receiver Characteristics

6.1 General

channel

Receiving performance test of the UE is implemented during communicating with the SS via air interface. The procedure is using normal call protocol until the UE is communicating on traffic channel basically. On the traffic channel, the UE provides special function for testing that is called Logical Test Interface and the UE is tested using this function (Refer to TS 34.109 [4])

Transmitting or receiving bit/symbol rate for test channel is shown in table 6.1.

 Type of User Information
 User bit rate
 DL DPCH symbol rate
 UL DPCH bit rate
 Remarks

 12,2 kbps reference measurement
 12,2 kbps
 30 ksps
 60 kbps
 Standard Test

Table 6.1: Bit / Symbol rate for Test Channel

Unless otherwise stated the receiver characteristics are specified at the antenna connector of the UE. For UE(s) with an integral antenna only, a reference antenna with a gain of 0 dBi is assumed. UE with an integral antenna may be taken into account by converting these power levels into field strength requirements, assuming a 0 dBi gain antenna. Receiver characteristics for UE(s) with multiple antennas/antenna connectors are FFS.

The UE antenna performance has a significant impact on system performance, and minimum requirements on the antenna efficiency are therefore intended to be included in future versions of the present document. It is recognised that different requirements and test methods are likely to be required for the different types of UE.

With the exception of clause 6.8, aAll the parameters in clause 6 are defined using the DL reference measurement channel (12,2 kbps) specified in clause C.3.1 and unless stated otherwise, with DL power control OFF.

The common RF test conditions of Rx Characteristics are defined in clause E.3.2, and each test conditions in this clause (clause 6) should refer clause E.3.2. Individual test conditions are defined in the paragraph of each test.

All Bit Error ratio (BER) measurements in clause 6 shall be performed according to the general rules for statistical testing in Annex F.6

6.8 Spurious Emissions

6.8.1 Definition and applicability

The spurious emissions power is the power of emissions generated or amplified in a receiver that appear at the UE antenna connector.

The requirements and this test apply to all types of UTRA for the FDD UE.

6.8.2 Minimum Requirements

The power of any narrow band CW spurious emission shall not exceed the maximum level specified in table 6.8.1 and table 6.8.2.

Table 6.8.1: General receiver spurious emission requirements

Frequency Band	Measurement Bandwidth	Maximum level	Note
30 MHz ≤ f < 1 GHz	100 kHz	-57 dBm	
1 GHz ≤ f ≤ 12,75 GHz	1 MHz	-47 dBm	

Table 6.8.2: Additional receiver spurious emission requirements

Operating band	Frequency Band	Measurement Bandwidth	Maximum level	Note
I	1 920 MHz ≤ f ≤ 1 980 MHz	3,84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	2 110 MHz ≤ f ≤ 2 170 MHz	3,84 MHz	-60 dBm	UE receive band
II	1850 MHz ≤ f ≤ 1910 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	1930 MHz ≤ f ≤ 1990 MHz	3.84 MHz	-60 dBm	UE receive band
III	1710 MHz ≤ f ≤ 1785 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	1805 MHz ≤ f ≤ 1880 MHz	3.84 MHz	-60 dBm	UE receive band
VI	830 MHz ≤ f ≤ 840 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	875 MHz ≤ f ≤ 885 MHz	3.84 MHz	-60 dBm	UE receive band
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm	

The reference for this requirement is TS 25.101 [1] clause 7.9.1.

6.8.3 Test purpose

To verify that the UE spurious emission meets the specifications described in clause 6.8.2.

Excess spurious emissions increase the interference to other systems.

6.8.4 Method of test

6.8.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: low range, mid range, high range; see clause G.2.4.

- 1) Connect a spectrum analyzer (or other suitable test equipment) to the UE antenna connector as shown in figure A.8.
- 2) RF parameters are setup according to table E.3.2.2. Settings for the serving cell are defined in table 6.8.2A.
- 3) A call is set up according to the setup procedure specified in TS34.108 [3] sub clause 7.3.53, with the following exceptions for information elements in System Information Block type3.

SIB 3 Information Element	Value/Remark
- Cell selection and re-selection info	
- CHOICE mode	FDD
- Sintrasearch	0 dB
- Sintersearch	0 dB
- RAT List	This parameter is not present configurable
- Ssearch,RAT	0 dB
- Maximum allowed UL TX power	Power level where Pcompensation=0

The exceptions for SIB1 are defined in TS 34.108 [3] clause 7.3.53.2.

NOTE: The setup procedure (3) sets the UE into the CELL_FACH state. With this state and the SS level (2) it is ensured that UE continuously monitors the S-CCPCH and no cell reselections are performed [see 3GPP TS 25.304, clauses 5.2.3.and 5.2.6]. No transmission of tThe UE will not be transmitting, and therefore will not interfere with the measurement.

Table 6.8.2A: Settings for the serving cell during the measurement of Rx Spurious Emissions

<u>Parameter</u>	<u>Unit</u>	Cell 1
Cell type		Serving cell
UTRA RF Channel Number		As defined in clause 6.8.4.1
<u>Qqualmin</u>	<u>dB</u>	<u>-24</u>
<u>Qrxlevmin</u>	<u>dBm</u>	<u>-115</u>
UE TXPWR MAX RACH	<u>dBm</u>	<u>+21</u>
CPICH Ec (see notes 1 and 2)	dBm/3.84	As defined in table E.3.2.2
	MHz	

NOTE 1: The power level is specified in terms of CPICH Ec instead of CPICH RSCP as RSCP is a receiver measurement and only CPICH Ec can be directly controlled by the SS.

NOTE 2: The cell fulfils TS 25.304. 5.2.3.1.2.

6.8.4.2 Procedure

1) Sweep the spectrum analyzer (or equivalent equipment) over a frequency range and measure the average power of spurious emission.

6.8.5 Test requirements

It shall be verified that the RRC connection release at the end of the procedure described in 34.108 [3] clause 7.3.53.3 shall be completed successfully indicating that the UE has stayed in CELL FACH state during the measurement of the spurious emissions.

The all measured spurious emissions, derived in step 1), shall not exceed the maximum level specified in table 6.8.3 and table 6.8.4.

Table 6.8.3: General receiver spurious emission requirements

Frequency Band	Measurement Bandwidth	Maximum level	Note
30 MHz ≤ f < 1 GHz	100 kHz	-57 dBm	
1 GHz ≤ f ≤ 12.75 GHz	1 MHz	-47 dBm	

Table 6.8.4: Additional receiver spurious emission requirements

Operating Band	Frequency Band	Measurement Bandwidth	Maximum level	Note
I	1 920 MHz ≤ f ≤ 1 980 MHz	3,84 MHz	-60 dBm	UE transmit band-in URA_PCH, Cell_PCH and idle state
	2 110 MHz ≤ f ≤ 2 170 MHz	3,84 MHz	-60 dBm	UE receive band
II	1850 MHz ≤ f ≤ 1910 MHz	3.84 MHz	-60 dBm	UE transmit band-in URA_PCH, Cell_PCH and idle state
	1930 MHz ≤ f ≤ 1990 MHz	3.84 MHz	-60 dBm	UE receive band
III	1710 MHz ≤ f ≤ 1785 MHz	3.84 MHz	-60 dBm	UE transmit band-in URA_PCH, Cell_PCH and idle state
	1805 MHz ≤ f ≤ 1880 MHz	3.84 MHz	-60 dBm	UE receive band
VI	830 MHz ≤ f ≤ 840 MHz	3.84 MHz	-60 dBm	UE transmit band in URA_PCH, Cell_PCH and idle state
	875 MHz ≤ f ≤ 885 MHz	3.84 MHz	-60 dBm	UE receive band
	2110 MHz ≤ f ≤ 2170 MHz	3.84 MHz	-60 dBm	

NOTE 1: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

NOTE 2: The Test Requirements are measured in the CELL FACH state instead of in the UE states defined in the Minimum Requirement because the CELL FACH state ensures that the UE receiver is continuously on and the UE transmitter is off whilst the spectrum analyser searches for spurious emissions. The UE states defined in the Minimum Requirement allow the UE receiver to be in discontinuous reception, and using those UE states during the measurement would have resulted in a complicated and significantly lengthened test procedure since the UE receiver would be allowed to be switched off part of the time.

Annex E (normative): Downlink Physical Channels

E.1 General

This normative annex specifies the downlink physical channels that are needed for setting a connection and channels that are needed during a connection.

NOTE: The power level specified for each physical channel in this annex is an average power, as measured during periods when the physical channel transmission is ON (see [19] for definitions), and no DTX symbols are being transmitted on that physical channel.

E.2 Connection Set-up

Table E.2.1 describes the downlink Physical Channels that are required for connection set up.

Table E.2.1: Downlink Physical Channels required for connection set-up

Physical Channel				
CPICH				
P-CCPCH				
SCH				
S-CCPCH				
PICH				
AICH				
DPCH				

E.2.1 Measurement without dedicated connection

Table E.2.2 describes the downlink Physical Channels that are required for measurement before connection. This is applicable for the clauses 5.4.1 and 5.5.2.

Table E.2.2: Downlink Physical Channels transmitted without dedicated connection

Physical Channel	Power		
Îor	Test dependent power		
CPICH	CPICH_Ec / lor	= -3.3 dB	
P-CCPCH	P-CCPCH_Ec / lor	= -5,3 dB	
SCH	SCH_Ec / Ior	= −5,3 dB	
PICH	PICH_Ec / Ior	= -8.3 dB	
S-CCPCH	S-CCPCH_Ec / lor	= -10,3 dB	

E.3 During connection

The following clauses describe the downlink Physical Channels that are transmitted during a connection i.e., when measurements are done. For these measurements the offset between DPCH and SCH shall be zero chips at base station meaning that SCH is overlapping with the first symbols in DPCH in the beginning of DPCH slot structure.

E.3.1 Measurement of Tx Characteristics

Table E.3.1 is applicable for measurements on the Transmitter Characteristics (clause 5) with the exception of clauses 5.3, 5.4.1, 5.4.4 and 5.5.2.

NOTE: Applicability to clause 5.7 (Power setting in uplink compressed mode) is FFS.

Table E.3.1: Downlink Physical Channels transmitted during a connection

Physical Channel	Power					
Îor	-93 dBm / 3,84MHz					
CPICH	CPICH_Ec / DPCH_Ec = 7 dB					
P-CCPCH	P-CCPCH_Ec / DPCH_Ec = 5 dB					
SCH	SCH_Ec / DPCH_Ec = 5 dB					
PICH	PICH_Ec / DPCH_Ec = 2 dB					
DPCH	-103,3 dBm / 3,84MHz					

E.3.2 Measurement of Rx Characteristics

Table E.3.2.1 is applicable for measurements on the Receiver Characteristics (clause 6) with the exception of clauses 6.3 and 6.8.

Table E.3.2.1: Downlink Physical Channels transmitted during a connection

Physical Channel	Power					
CPICH	CPICH_Ec / DPCH_Ec	= 7 dB				
P-CCPCH	P-CCPCH_Ec/ DPCH_Ec	= 5 dB				
SCH	SCH_Ec / DPCH_Ec	= 5 dB				
PICH	PICH_Ec / DPCH_Ec	= 2 dB				
DPCH	Test dependent power					

Table E.3.2.2 describes the downlink Physical Channels that are required for the test of Spurious Emissions (clause 6.8). The UE is in the CELL_FACH state during the measurement.

Table E.3.2.2: Downlink Physical Channels transmitted during the measurement for Rx Spurious Emissions test

Physical Channel	Power					
CPICH	– <u>86</u> 96-dBm / 3,84MHz					
P-CCPCH	P-CCPCH_Ec/ CPICH_Ec	= -2 dB				
SCH	SCH_Ec / CPICH_Ec	= -2 dB				
PICH	PICH_Ec / CPICH_Ec	= -5 dB				
S-CCPCH	S-CCPCH_Ec / CPICH_Ec	= -2 dB				

Annex F (normative): General test conditions and declarations

The requirements of this clause apply to all applicable tests in the present document.

Many of the tests in the present document measure a parameter relative to a value that is not fully specified in the UE specifications. For these tests, the Minimum Requirement is determined relative to a nominal value specified by the manufacturer.

When specified in a test, the manufacturer shall declare the nominal value of a parameter, or whether an option is supported.

In all the relevant clauses in this clause all Bit Error Ratio (BER), Block Error Ratio (BLER), False transmit format Detection Ratio (FDR) measurements shall be carried out according to the general rules for statistical testing in clause F.6.

F.1 Acceptable uncertainty of Test System

The maximum acceptable uncertainty of the Test System is specified below for each test, where appropriate. The Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, and the equipment under test to be measured with an uncertainty not exceeding the specified values. All ranges and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95 % is the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment.

For RF tests it should be noted that the uncertainties in clause F.1 apply to the Test System operating into a nominal 50 ohm load and do not include system effects due to mismatch between the DUT and the Test System.

F.1.3 Measurement of receiver

Table F.1.3: Maximum Test System Uncertainty for receiver tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
6.8 Spurious emissions	± 3.0 dB for UE receive band and UE transmit band (-6078 dBm) Outside above: f≤2.2GHz: ± 2.0 dB (-57 dBm) 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB (-47 dBm) f > 4 GHz: ±4.0 dB (-47 dBm)	
	Downlink signal Îor ± 2.0 dB	

3GPP TSG-T1 Meeting #24 Toronto, Canada, 26th - 30th July 2004

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Summary of change	Correction of the BTFD test case: Remove the Note that Table 7.10.3 is currently not aligned with the reference measurement channel for BTFD in Annex C. Editorial formatting correction on the Note on loopback mode. State that during the measurements downlink DCCH shall be continuously transmitted. When there is no signalling to transmit on downlink DCCH then dummy DCCH transmission as described in Annex C.9 shall be used. Add a Note explaining that the TFCS size used in this test shall be 18 and n as implied by TS 25.101 (and the NOTE above Table 7.10.3). Since the DCC will be continuously transmitted and the DCCH is not used in the BTFD for the DTCH this does not have an impact on the BTFD performance. Remove 1x0 TF for DTCH in Table C.4.2.3 Change the TFCS in Table C.4.2.4 to 18 combinations. The definition for the downlink dummy DCCH message is added in Annex C.							usly nen and not 9 DCCH r the			
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How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked \(\mathcal{H} \) contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.10 Blind transport format detection

7.10.1 Definition and applicability

Performance of Blind transport format detection is determined by the Block Error Ratio (BLER) values and by the measured average transmitted DPCH_Ec/Ior value.

7.10.2 Minimum requirements

For the parameters specified in table 7.10.1 the average downlink $\frac{DPCH _E_c}{I_{cc}}$ power ratio shall be below the specified

value for the BLER and FDR shown in table 7.10.2. Table 7.10.3 defines the Transport Format Combinations Set for the downlink. The reference measurement channel used in this test case is defined in Annex C.4.

Table 7.10.1: Test parameters for Blind transport format detection

Parameter	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Unit
\hat{I}_{or}/I_{oc}	-1			-3			dB
I_{oc}		-60					
Information Data Rate	12,2	7,95	1,95	12,2	7,95	1,95	kbps
	(rate 1)	(rate 2)	(rate 3)	(rate 1)	(rate 2)	(rate 3)	
propagation condition	static multi-path fading case 3					-	
TFCI			-				

Table 7.10.2: The Requirements for DCH reception in Blind transport format detection

Test Number	$DPCH_E_c$	BLER	FDR				
	I_{or}						
1	-17,7dB	10 ⁻²	10 ⁻⁴				
2	-17,8dB	10 ⁻²	10 ⁻⁴				
3	-18,4dB	10 ⁻²	10 ⁻⁴				
4	4 –13,0dB		10 ⁻⁴				
5	-13,2dB	10 ⁻²	10 ⁻⁴				
6	-13,8dB	10 ⁻²	10 ⁻⁴				
NOTE: The value of DPCH_Ec/lor, loc, and lor/loc are defined in case of DPCH is transmitted.							

NOTE: In the test, 9 different Transport Format Combinations (table 7.10.3) are sent during the call set up procedure, so that the UE has to detect the correct transport format from these 9 candidates.

Table_7.10.3: Transport format combinations informed during the call set up procedure in the test

	1	2	3	4	5	6	7	8	9
DTCH	12,2 k	10,2 k	7,95 k	7,4 k	6,7 k	5,9 k	5,15 k	4,75 k	1,95 k
DCCH					2,4 k				

Editor's Note: The downlink TFCS of the BTFD reference measurement channel defined in Annex C.4.2 is currently not aligned with Table 7.10.3. The TFCS to be used in this test case is TBD.

To verify the ability of the blind transport format detection to receive a predefined test signal, representing a static propagation channel for the wanted and for the co-channel signals from serving and adjacent cells, with a block error ratio (BLER) and false transport format detection ratio (FDR) not exceeding a specified value.

To verify the ability of the blind transport format detection to receive a predefined test signal, representing a multi-path propagation channel for the wanted and for the co-channel signals from serving and adjacent cells, with a block error ratio (BLER) and false transport format detection ratio (FDR) not exceeding a specified value.

7.10.4 Method of test

7.10.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1. Connect the SS and AWGN noise source to the UE antenna connector as shown in figure A.9 in the case for test 1-3. Connect the SS, multipath fading simulator and an AWGN noise source to the UE antenna connector as shown in figure A.10 in the case of test 4-6.
- 2. Set up a call according to the Generic call setup procedure.
- 3. Set the test parameters for test 1-6 as specified table 7.10.4 and table 7.10.5.
- 4. Enter the UE into loopback test mode 2 and start the loopback test.
- 5. In the case of test 4-6, Setup fading simulator as fading condition case 3 which are described in table D.2.2.1.

Note: In loopback test mode 2 the UE may return any valid uplink Transport Format Combination.

Note: In loopback test mode 2 the UE may return any valid uplink Transport Format Combination.

7.10.4.2 Procedure

Measure BLER and FDR of DCH.

For FDR, the SS shall check the TFI of the UE transmitted transport format to verify that the UE has detected the correct downlink transport format.

In this test TF0 and TF10 on uplink DTCH shall be counted as block errors.

During the measurements downlink DCCH shall be continuously transmitted. When there is no signalling to transmit on downlink DCCH then dummy DCCH transmission as described in Annex C.9 shall be used.

NOTE: The TFCS size used in this test shall be 18 and not 9 as implied by TS 25.101 (and the NOTE above Table 7.10.3). Since the DCCH will be continously transmitted and the DCCH is not used in the BTFD for the DTCH this does not have an impact on the BTFD performance.

7.10.5 Test requirements

The test parameters are specified in table 7.10.4.

Table 7.10.4: Test parameters for Blind transport format detection

Parameter	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Unit
\hat{I}_{or}/I_{oc}	-0,7			-2,4			dB
I_{oc}		-60					
Information Data Rate	12,2	7,95	1,95	12,2	7,95	1,95	kbps
	(rate 1)	(rate 2)	(rate 3)	(rate 1)	(rate 2)	(rate 3)	
propagation condition	Static multi-path fading case 3				•		
TFCI	off						-

BLER and FDR shall not exceed the values at the DPCH_Ec/Ior specified in table 7.10.5.

Table 7.10.5: The Requirements for DCH reception in Blind transport format detection

Test Number	$DPCH_E_c$	BLER	FDR				
	I_{or}						
1	-17,6dB	10 ⁻²	10 ⁻⁴				
2	–17,7dB	10 ⁻²	10 ⁻⁴				
3	-18,3dB	10 ⁻²	10 ⁻⁴				
4	-12,9dB	10 ⁻²	10 ⁻⁴				
5	-13,1dB	10 ⁻²	10 ⁻⁴				
6	-13,7dB 10 ⁻² 10 ⁻⁴						
NOTE: The value of DPCH_Ec/lor, loc, and lor/loc are defined in case of DPCH is transmitted.							

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

C.4.2 DL reference measurement channel for BTFD performance requirements

The parameters for DL reference measurement channel for BTFD are specified in table C.4.2.1, table C.4.2.2, table C.4.2.3 and table C.4.2.4. The channel coding for information is shown in figures C.4.1, C.4.2, and C.4.3. For the RLC configuration of AM DCCHs Timer_STATUS_Periodic shall not be set in RRC CONNECTION SETUP message used in test procedure for RF test as defined in TS34.108 clause 7.3. This is to prevent unexpected DCHs from being transmitted through such RLC entities when the timer has expired in order to ensure that the required TFC from the minimum set of TFCs can continuously convey a DCH for DTCH during the test.

Table C.4.2.1: DL reference measurement channel physical parameters for BTFD

Parameter	Rate 1	Rate 2	Rate 3	Unit			
Information bit rate	12,2	7,95	1,95	kbps			
DPCH		30		ksps			
Slot Format #I		8					
TFCI		-					
Power offsets PO1, PO2 and PO3		dB					
DTX position		-					

Table C.4.2.2: DL reference measurement channel, transport channel parameters for SRB

Higher Layer	RAB	/Signalling RB	SRB
RLC	Logical cha	nnel type	DCCH
	RLC mode		UM/AM
	Payload siz	es, bit	88/80
	Max data ra	ate, bps	2200/2000
	PDU heade	r, bit	8/16
	TrD PDU he	eader, bit	N/A
MAC	MAC heade	er, bit	4
	MAC multip	lexing	Yes
Layer 1	TrCH type		DCH
	Transport C	Channel Identity	20
	TB sizes, bi	zes, bit 100	
	TFS	TF0, bits	0*100
		TF1, bits	1*100
	TTI, ms		40
	Coding type	9	Convolution Coding
	Coding Rat	e	1/3
	CRC, bit		12
	Max number	er of bits/TTI after	360
	channel cod	<u> </u>	
		number of bits/radio re rate matching	90
	RM attribute		256

Table C.4.2.3: DL reference measurement channel using RLC-TM for DTCH, transport channel parameters

Higher Layer	RAB/Signalling RB	12.2k/10.2k/7.95k/7.4k/6.7k/5.9k/5.15k/4.75k/1.95k
RLC	Logical channel type	DTCH
	RLC mode	TM
	Payload sizes, bit	244, 204, 159, 148, 134, 118, 103, 95, 39
	Max data rate, bps	12200
	PDU header, bit	N/A
	TrD PDU header, bit	0
MAC	MAC header, bit	0
	MAC multiplexing	N/A
Layer 1	TrCH type	DCH
	Transport Channel Identity	1
	TB sizes, bit	244, 204, 159, 148, 134, 118, 103, 95, 39 <mark>,0</mark>
	TFS TF0 bit	1x0
	TF1 TF0 bit	1x244
	TF2 TF1 bit	1x204
	TF3- TF2 bit	1x159
	TF4	1x148
	TF3 bit	1x134
	TF4 bit	1x118
	<u>TF5</u> bit	
	TF7 TF6 bit	1x103
	TF8 TF7 bit	1x95
	TF9 TF8 bit	1x39
	TTI, ms	20
	Coding type	CC
	Coding Rate	1/3
	CRC, bit	12
	RM attribute	256

Table C.4.2.4: DL reference measurement channel, TFCS

TFCS size	20 18
TFCS	(DTCH, DCCH)=
	(TF0, TF0), (TF1, TF0), (TF2, TF0), (TF3, TF0), (TF4, TF0), (TF5, TF0), (TF6, TF0), (TF7, TF0),
	(TF8, TF0), (TF9, TF0), (TF0, TF1), (TF1, TF1), (TF2, TF1), (TF3, TF1), (TF4, TF1), (TF5, TF1),
	(TF6, TF1), (TF7, TF1), (TF8, TF1) , (TF9, TF1),

C.9 Downlink reference channel dummy DCCH transmission on DCH

Several test cases have been designed to have continuous downlink DCCH transmission on DCH. The DCCH is carrying SRBs. When there are no signalling messages to be transmitted on downlink DCCH then dummy DCCH messages shall be transmitted on the downlink.

For test cases using Blind Transport Format Detection the format of the dummy DCCH message is using an invalid MAC header with the value "1111" for the C/T field. The UE shall discard PDU's with this invalid MAC header according to TS 25.321. This applies for cases where a MAC header is used to distinguish between several logical channels. In the case of the reference measurement channels the SRBs on DCH use a 4 bit MAC header.

For other test cases the format of the dummy DCCH is TBD.

3GPP TSG-T1 Meeting #24 Toronto, Canada, 26-30 July, 2004

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Other specs affected:	**	8.6.1 Y N X X	Other Test s	core spec pecification Specificat	ons	ns	æ						
Other comments:	${\mathbb H}$												

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked \$\mathbb{K}\$ contain pop-up help information about the field that they are closest to.

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition

8.6.1.2.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.1.2.2 Minimum requirements

The requirements are the same as in sub clause 8.6.1.1.2.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.2.

8.6.1.2.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.2.4 Method of test

8.6.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The initial test parameters are given in table 8.6.1.2.1.

Table 8.6.1.2.1: Cell specific initial test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/lor	dB	-10	-10	-10
PCCPCH_Ec/lor	dB	-12	-12	-12
SCH_Ec/lor	dB	-12	-12	-12
PICH_Ec/lor	dB	-15	-15	-15
DPCH_Ec/lor	dB	-17	N/A	N/A
OCNS_Ec/lor	dB	-1.049	-0.941	-0.941
\hat{I}_{or}/I_{oc}	dB	0	-Inf	-Inf
I_{oc}	dBm/ 3.84 MHz		-85	
CPICH_Ec/Io	dB	-13	-Inf	-Inf
Propagation Condition			AWGN	

The test parameters are given in table 8.6.1.2.2 and 8.6.1.2.3. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A, 1C and 1B shall be used and the periodical reporting of the events is not applied. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. In the initial condition before the time T1 only Cell1 is active.

Table 8.6.1.2.2: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Replacement activation threshold		0	Applicable for event 1C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		32	
T1	S	10	
T2	S	10	
T3	S	5	
T4	S	10	

Table 8.6.1.2.3: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2			Cell3				
		T1	T2	Т3	T4	T1	T2	Т3	T4	T1	T2	Т3	T4
CPICH_Ec/lor	dB		-1	0			-1	0			-1	0	
PCCPCH_Ec/ lor	dB		-1	2			-1	2			-1	2	
SCH_Ec/lor	dB		-1	-12 -12 -12 -15 -15									
PICH_Ec/lor	dB		-15 -15 -15										
DPCH_Ec/lor	dB		-17 N/A N/A										
OCNS_Ec/lor	dB				941								
\hat{I}_{or}/I_{oc}	dB	6.97	6.93	5.97	6.12	-Inf	9.43	6.97	7.62	5.97	6.93	-Inf	5.62
I_{oc}	dBm/ 3.84 MHz						-8	35					
CPICH_Ec/lo	dB	-13	-16	-14	-15.5	-Inf	-13.5	-13	-14	-14	-16	-Inf	-16
Propagation Condition							AWGN						

8.6.1.2.4.2 Procedure

- 1) The RF parameters are set up according to T0.
- 2) The UE is switched on.
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) 5 seconds after step4 has completed, the SS shall switch the power settings for T0 to T1.
- 6) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T1 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.

- 7) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 8) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.
- 9) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 10) UE shall transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 11) UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 12) After 10 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.
- 13) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 14) UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 15) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.
- 16) UE shall transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1A. The measurement reporting delay from the beginning of T4 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successfull tests is increased by one.
- 17)UE may transmit a MEASUREMENT REPORT message for Cell 2 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 18)UE may transmit a MEASUREMENT REPORT message for Cell 3 triggered by event 1C. In case it doesn't this shall not be considered as a failure.
- 19) After 10 seconds from the beginning of T4, the UE is switched off.
- 20) Repeat steps 1-19 until the confidence level according to annex F.6.2 is achieved.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

${\tt MEASUREMENT\ CONTROL\ message:}$

Information Element/Group name	Value/Remark
Message Type (10.2.17)	- araontonian
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1) -CHOICE Measurement type	Not Present Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	intra-frequency measurement
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	Not i resent
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	_
-Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	TRUE (N. (A)
-Cell synchronisation information reporting indicator	TRUE (Note 1) TRUE
-Cell Identity reporting indicator -CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	3
-Intra-frequency event identity	Event 1A
-Triggering condition 2 -Reporting Range Constant	Monitored set cells 3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present 1
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
	1.0 0 dB
-Hysteresis -Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not Present
-Reporting interval	0 ms (Note 2) Not Present
•	•

Information Element/Group name	Value/Remark
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1C
-Triggering condition 2	Active set cells and monitored set cells
-Reporting Range Constant	Not present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not present
-Replacement activation threshold	0
-Time to trigger	0 ms
-Amount of reporting	Not Present 1
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
NOTE 1: The SFN-CFN observed time difference is calcular	
in the IE "Cell synchronisation information", TS 25	.331, clause 10.3.7.6. According to TS 25.331,

NOTE 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.

NOTE 2: Reporting interval = 0 ms means no periodical reporting.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG T1 Meeting #24 Toronto, Canada, 26th – 30th July 2004

T1-041361 #

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How to create CRs using this form:

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- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

- downloaded from the 3GPP server under $\underline{\text{ftp://ftp.3gpp.org/specs/}}$ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.1 FDD intra frequency measurements

8.6.1.1 Event triggered reporting in AWGN propagation conditions

8.6.1.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the FDD UE.

8.6.1.1.2 Minimum requirements

The UE shall be able to identify and decode the SFN of a new detectable cell belonging to the monitored set within

$$T_{\text{identify intra}} = Max \left\{ 800, T_{\text{basic identify FDD, intra}} \cdot \frac{T_{\text{Measurement Period, Intra}}}{T_{\text{Intra}}} \right\} ms$$

A cell shall be considered detectable when CPICH Ec/Io \geq -20 dB, SCH_Ec/Io \geq -20 dB for at least one channel tap and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

In the CELL_DCH state the measurement period for intra frequency measurements is 200 ms. When no transmission gap pattern sequence is activated, the UE shall be capable of performing CPICH measurements for 8 identified intra-frequency cells of the monitored set and/or the active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When one or more transmission gap pattern sequences are activated, the UE shall be capable of performing CPICH measurements for at least $Y_{\text{measurement intra}}$ cells , where $Y_{\text{measurement intra}}$ is defined in the following equation. The measurement accuracy for all measured cells shall be as specified in the sub-clause 9.1.1 and 9.1.2 of TS 25.133 [2]. If the UE has identified more than $Y_{\text{measurement intra}}$ cells, the UE shall perform measurements of all identified cells but the reporting rate of CPICH measurements of cells from UE physical layer to higher layers may be decreased.

$$\mathbf{Y}_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement FDD}} \cdot \frac{\mathbf{T}_{\text{Intra}}}{\mathbf{T}_{\text{Measurement Period, Intra}}} \right\} \text{ cells}$$

where

 $X_{\text{basic measurement FDD}} = 8 \text{ (cells)}$

T_{Measurement Period Intra} = 200 ms. The measurement period for Intra frequency CPICH measurements.

 T_{Intra} : This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

 $T_{basic_identify_FDD, intra} = 800$ ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

The event triggered measurement reporting delay, on cells belonging to monitored set, measured without L3 filtering, shall be less than the above defined T _{identify intra} defined above.

If a cell, belonging to monitored set, which the UE has identified and measured at least once over the measurement period, becomes undetectable for a period < 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than $T_{Measurement_Period\ Intra}$ ms provided the timing to that cell has not changed more than +/-32 chips, the UE CPICH measurement capabilities defined above are valid and L3 filtering has not been used. When L3 filtering is used an additional delay can be expected.

If a cell belonging to monitored set has been detectable at least for the time period $T_{identify_intra}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement_Period\ Intra}$ when the L3 filter has not been used and the UE CPICH measurement capabilities defined above are valid.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.2 and A.8.1.1.

8.6.1.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.1.1.4 Method of test

8.6.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in tables 8.6.1.1.1 to 8.6.1.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

Table 8.6.1.1.1: General test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference	As specified in C.3.1 and C.2.1
		Measurement Channel 12.2 kbps	
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation		0	Applicable for event 1A
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24	
T1	S	5	
T2	S	5	
T3	S	5	

Table 8.6.1.1.2: Cell specific test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Cell 1				Cell 2			
		T1	T2	T3	T1	T2	T3		
CPICH_Ec/lor	dB		-10			-10			
PCCPCH_Ec/lor	dB		-12			-12			
SCH_Ec/lor	dB		-12			-12			
PICH_Ec/lor	dB		-15		-15				
DPCH_Ec/lor	dB		-17			N/A			
OCNS_Ec/lor	dB		-1.049			-0.941			
\hat{I}_{or}/I_{oc}	dB	0	6.97	0	-Infinity	5.97	-Infinity		
$\hat{I}_{or(Note1)}$	dBm	-70	-63.03	-70	-Infinity	-64.03	-Infinity		
I_{oc}	dBm/3.84 MHz	-70							
CPICH_Ec/lo	dB	-13	-13	-13	-Infinity	-14	-Infinity		
Propagation Condition		AWGN			·				

Note 1: The nominal Îor values, although not explicitly defined in 25.133 are added here since they are implied and need to be identified so that the test equipment can be configured.

8.6.1.1.4.2 Procedure

- 1. The RF parameters are set up according to T1 in table 8.6.1.1.3.
- 2. The UE is switched on.
- 3. A call is set up according to the test procedure specified in TS 34.108 [3] sub clause 7.3.2.3.
- 4. SS shall transmit a MEASUREMENT CONTROL message.
- 5. After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2 in table 8.6.1.1.3.
- 6. UE shall transmit a MEASUREMENT REPORT message triggered by event 1A. The measurement reporting delay from the beginning of T2 shall be less than 880 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 7. After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3 in table 8.6.1.1.3.
- 8. UE shall transmit a MEASUREMENT REPORT message triggered by event 1B. The measurement reporting delay from the beginning of T3 shall be less than 280 ms. If the reporting delay for this event is within the required limit, the number of successful tests is increased by one.
- 9. After 5 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 10. Repeat steps 1-9 according to Annex F.6.2 Table 6.2.8.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	FDD
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE report criteria	Intra-frequency measurement reporting
The state of the s	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1A
-Triggering condition 2	Monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Not present1
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triggering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-W	1.0
	0 dB
-Hvetaracie	
-Hysteresis -Threshold used frequency	I Not Present
-Threshold used frequency	Not Present
-Threshold used frequency -Reporting deactivation threshold	Not Present
-Threshold used frequency -Reporting deactivation threshold -Replacement activation threshold	Not Present Not Present
-Threshold used frequency -Reporting deactivation threshold	Not Present

	Information Element/Group name	Value/Remark		
-Reporting cell status		Not Present		
Physical	channel information elements			
-DPCH co	ompressed mode status info (10.3.6.34)	Not Present		
Note 1:	The SFN-CFN observed time difference is calculated	from the OFF and Tm parameters contained		
	in the IE "Cell synchronisation information", TS 25.331, clause 10.3.7.6. According to TS 25.331,			
	8.6.7.7, this IE is included in MEASUREMENT REPOI	RT if IE "Cell synchronisation information		
	reporting indicator" in IE "Cell reporting quantities" TS	25.331, clause 10.3.7.5 is set to TRUE in		
	MEASUREMENT CONTROL.			
Note 2:	Reporting interval = 0 ms means no periodical reportir	ng		

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases is described in Annex I.

8.6.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, of the cases with a confidence level of 95%. The number of successful tests shall be on an event level, i.e. the SS shall check how many events are reported successfully out of the total number of events checked.

Table 8.6.1.1.3: Test requirements for Event triggered reporting in AWGN propagation conditions

Parameter	Unit		Cell 1			Cell 2		
		T1	T2	Т3	T1	T2	T3	
CPICH_Ec/lor	dB		-9.3			-9.3		
PCCPCH_Ec/lor	dB		-11.3			-11.3		
SCH_Ec/lor	dB		-11.3			-11.3		
PICH_Ec/lor	dB		-14.3			-14.3		
DPCH_Ec/lor	dB		-16.3			N/A		
OCNS			-1.26			-1.13		
$\hat{I}_{or}/I_{oc\ (Note\ 1)}$	dB	0	7.0	0	-Infinity	6.0	-Infinity	
\hat{I}_{or}	dBm	-70	-63.0	-70	-Infinity	-64.0	-Infinity	
I_{oc}	dBm/3.84 MHz		·	•	-70			
CPICH_Ec/lo	dB	-12.3	-12.3	-12.3	-Infinity	-13.3	-Infinity	
Propagation Condition		AWGN						
Note 1: These page	arameters are	not directly:	settable, but a	re derived by	calculation from	the settable pa	arameters	

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

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	-	Note 2 bed	came Note	1 in tables 8	3.2.3.1	.4, 8	.2.3.1.5, 8.2.	3.2.4 and	8.2.3	.2.5
	-	TBD for 8.	2.3 in Anne	x F.4.4 was	delete	d.				
	-	Correction	to 8.2.3.2 S	Scenario 2 ir	n Anne	x F.	4.4 was adde	ed.		
Consequences if not approved:	*	Some table	es in test ca	se 8.2.3 will	l be mi	slea	ding			
Clauses affected:	# 8	8,2,3,1, 8	2.3.2 and Ar	nex F.4.4						
Other specs affected:	₩ H		er core spec specificatio		×					

X O&M Specifications

Other comments: # This CR is applicable for UE's supporting Rel-99 or later.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2.3 UTRAN to GSM Cell Re-Selection

8.2.3.1 Scenario 1: Both UTRA and GSM level changed

8.2.3.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell and starts to send the RR Channel Request message for location update to the new cell.

The requirements and this test apply to the combined FDD and GSM UE.

8.2.3.1.2 Minimum requirement

The cell re-selection delay shall be less than $26 \text{ s} + T_{BCCH}$, where TBCCH is the maximum time allowed to read BCCH data from GSM cell TS 05.08 [20].

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95 %.

NOTE: The cell re-selection delay can be expressed as: $4*T_{measureGSM} + T_{BCCH}$, where:

 $T_{measureGSM}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.

 T_{BCCH} Maximum time allowed to read BCCH data from GSM cell TS 05.08 [20].

According to [20], the maximum time allowed to read the BCCH data, when being

synchronized to a BCCH carrier, is 1.9 s.

This gives a total of 25.6 s + T_{BCCH} , allow 26 s + T_{BCCH} in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2 and A.4.3.1.

8.2.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.3.1.4 Method of test

8.2.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected, as given in tables 8.2.3.1.1 to 8.2.3.1.5. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 12 GSM cells. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.3.1.1: Scenario 1: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cell		Cell2	
Final	Active cell		Cell2	
condition				
HCS				Not used
DRX cycle	length	S	1.28	
T1		S	45	
T2		S	35	

Table 8.2.3.1.2: Scenario 1: <u>Test parameters for Cell re-selection UTRAN to GSM cell case (cell 1)</u>, initial conditions

Parameter	Unit	Cell 1 (UTRA)		
		T1	T2	
UTRA RF Channel Number		Channel 1		
CPICH_Ec/lor	dB	-10		
PCCPCH_Ec/lor	dB	-12		
SCH_Ec/lor	dB	-12		
PICH_Ec/lor	dB	-15		
OCNS_Ec/lor	dB	-0.941		
\hat{I}_{or}/I_{oc}	dB	0	-5	
I_{oc}	dBm/3.84 MHz	-70		
CPICH_Ec/lo	dB	-13	-16.2	
CPICH_RSCP	dBm	-80	-85	
Propagation Condition		AWGN		
Cell_selection_and_ reselection_quality_measure		CPICH E₀/I	N_0	
Qqualmin	dB	-20		
Qrxlevmin	dBm	-115		
UE_TXPWR_MAX_RACH	dBm	21		
Qoffset1 _{s, n}	dB	C1, C2: 0		
Qhyst1	dB	0		
Treselection	S	0		
Ssearch _{RAT}	dB	not sent		

Table 8.2.3.1.3: Scenario 1: <u>Test parameters for Cell re-selection UTRAN to GSM cell case (cell 2), initial conditions</u>

Parameter	Unit	Unit Cell 2 (GS		
Farameter	Oille	T1	T2	
Absolute RF Channel Number		ARFCN 1		
RXLEV	dBm	-90	-75	
RXLEV_ACCESS_MIN	dBm	-104		
MS_TXPWR_MAX_CCH	dBm	33	3	

8.2.3.1.4.2 Procedure

- 1) The SS activates cell 1 and 2 with T1 defined parameters in tables 8.2.3.1.4 and 8.2.3.1.5 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) The SS waits for random access requests from the UE on cell 1.
- 4) After 45 s, the parameters are changed as described for T2 in tables 8.2.3.1.4 and 8.2.3.1.5.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 28 s then the number of successful tests is increased by one.
- 6) After 35 s, the parameters are changed as described for T1 in tables 8.2.3.1.4 and 8.2.3.1.5.
- 7) The SS waits for random access requests from the UE on cell 1.
- 8) Repeat step 4) to 7) until the confidence level according to annex F.6.2 is achieved.

8.2.3.1.5 Test requirements

Table 8.2.3.1.4: Scenario 1: Cell re-selection UTRAN to GSM cell case (cell 1), test requirements

Parameter	Unit	Cell 1	(UTRA)
		T1	T2
UTRA RF Channel Number		Channel	1
CPICH_Ec/lor	dB	-9.9	-10.1
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
OCNS_Ec/lor	dB	-0.953	-0,928
\hat{I}_{or}/I_{oc}	dB	0.3	-5.3
I _{oc} (Note 1)	dBm/3.84 MHz	-70	
CPICH_Ec/lo (Note 12)	dB	-12.8	-16.5
CPICH_RSCP (Note12)	dBm	-79.6	-85.4
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_measure		CPICH E	_c /N ₀
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset1 _{s, n}	dB	C1, C2: 0)
Qhyst1	dB	0	
Treselection	S	0	
Ssearch _{RAT}	dB	not sent	

Table 8.2.3.1.5: Scenario 1: Cell re-selection UTRAN to GSM cell case (cell 2), test requirements

Parameter	Unit	(GSM)	
raiailletei	Offic	T1	T2
Absolute RF Channel Number		ARFCN 1	I
RXLEV (Note 1)	dBm	-90 <u>.3</u>	-7 <u>4.7</u> 5
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

NOTE 1: For T1 the the ratio (Ioc/Rxlev)_{test requirement} = (Ioc/Rxlev)_{minimum requirement} + 0.3 dB

For T2 the the ratio (Ioc/Rxlev)_{test requirement} = (Ioc/Rxlev)_{minimum requirement} - 0.3 dB

NOTE <u>12</u>:CPICH_Ec/Io and CPICH_RSCP levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95 %.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.3.2 Scenario 2: Only UTRA level changed

8.2.3.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change makes the UE camp on a new cell and starts to send the RR Channel Request message for location update to the new cell.

The requirements and this test apply to the combined FDD and GSM UE.

8.2.3.2.2 Minimum requirement

The cell re-selection delay shall be less than $7.7 \text{ s} + T_{BCCH}$, where TBCCH is the maximum time allowed to read BCCH data from GSM cell TS 05.08 [20].

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of 95%.

NOTE: The cell re-selection delay can be expressed as: Max $(3*T_{measureFDD}, T_{measureGSM}+DRX)$ cycle length) + T_{BCCH} , where:

 $T_{measureFDD}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.

 $T_{measureGSM}$ See table 4.1 in TS 25.133 [2] clause 4.2.2.

DRX cycle 1.28s see Table A.4.7.A in TS 25.133 [2] clause A.4.3.2.

length

T_{BCCH} Maximum time allowed to read BCCH data from GSM cell TS 05.08 [20].

According to [20], the maximum time allowed to read the BCCH data, when being

synchronized to a BCCH carrier, is 1.9 s.

This gives a total of 7.68 s + T_{BCCH} , allow 7.7 s + T_{BCCH} in the test case.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2 and A.4.3.2.

8.2.3.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.3.2.4 Method of test

8.2.3.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected, as given in tables 8.2.3.2.1 to 8.2.3.2.5. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 12 GSM cells. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.3.2.1: Scenario 2: General test parameters for UTRAN to GSM Cell Re-selection

Pa	arameter	Unit	Value	Comment
Initial	Active cell		Cell1	
condition	Neighbour cell		Cell2	
Final	Active cell		Cell2	
condition				
HCS				Not used
DRX cycle	length	S	1.28	
T1		S	45	
T2		S	12	

Table 8.2.3.2.2: Scenario 2: <u>Test parameters for Cell re-selection UTRAN to GSM cell case (cell 1)</u>, initial conditions

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/lor	dB	-10	
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
OCNS_Ec/lor	dB	-0.941	
\hat{I}_{or}/I_{oc}	dB	20	-9
I_{oc}	dBm/3.84 MHz	-81	
CPICH_Ec/lo	dB	-10.0	-19.5
CPICH_RSCP	dBm	-70	-100
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_measure		CPICH E	/N ₀
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset1 _{s, n}	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	S	0	
Ssearch _{RAT}	dB	not sent	

Table 8.2.3.2.3: Scenario 2: <u>Test parameters for Cell re-selection UTRAN to GSM cell case (cell 2)</u>, initial conditions

Parameter	Unit	Cell 2	(GSM)
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-80	-80
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

8.2.3.2.4.2 Procedure

- 1) The SS activates cell 1 and 2 with T1 defined parameters in tables 8.2.3.2.4 and 8.2.3.2.5 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) The SS waits for random access requests from the UE on cell 1.
- 4) After 45 s, the parameters are changed as described for T2 in tables 8.2.3.2.4 and 8.2.3.2.5.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 9.7 s then the number of successful tests is increased by one.
- 6) After 12 s, the parameters are changed as described for T1 in tables 8.2.3.2.4 and 8.2.3.2.5.
- 7) The SS waits for random access requests from the UE on cell 1.
- 8) Repeat step 4) to 7) until the confidence level according to annex F.6.2 is achieved.

8.2.3.2.5 Test requirements

Table 8.2.3.2.4: Scenario 2: Cell re-selection UTRAN to GSM cell case (cell 1), test requirements

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/lor	dB	-9.9	-10.1
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
OCNS_Ec/lor	dB	-0.953	-0.941
\hat{I}_{or}/I_{oc}	dB	20.3	-9.3
I _{oc} -(Note1)	dBm/3.84 MHz	-81	
CPICH_Ec/lo (Note12)	dB	-9.9	-19.9
CPICH_RSCP (Note <u>1</u> 2)	dBm	-70.6	-100.4
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_measure		CPICH E	/N ₀
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset1 _{s, n}	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	S	0	
Ssearch _{RAT}	dB	not sent	

Table 8.2.3.2.5: Scenario 2: Cell re-selection UTRAN to GSM cell case (cell 2), test requirements

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV-(Note1)	dBm	-80 <u>.3</u>	- <u>79.7</u> 80
RXLEV_ACCESS_MIN	dBm	-104	·
MS_TXPWR_MAX_CCH	dBm	33	



NOTE 12:CPICH_Ec/Io and CPICH_RSCP levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.

For the test to pass, the total number of successful tests shall be at least 90% of the cases with a confidence level of 95 %.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121		
8.2 Idle Mode Tasks		, ,			
8.2.2 Cell Re-Selection					
8.2.2.1 Scenario 1: Single carrier case	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis is recorded in 3GPP TR 34 902 [24].				
	During T1 and T2:	During T1 and T2:	During T1 and T2:		
	Cells 1 and 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.60 dB +0.60 dB +0.60 dB +0.60 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT		
	Cells 3, 4, 5, 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB Ior(3, 4, 5, 6) = -69.73 dBm	-0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for lor(3,	Ec/lor ratio + TT		
	101(3, 4, 3, 0) = -03.73 dBm	4, 5, 6)	101(3, 4, 3, 0) + 11		
	During T1:	During T1:	During T1:		
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	-0.27 dB for lor(1) +0.13 dB for lor(2)	lor(1) + TT lor(2) + TT		
	During T2:	During T2:	During T2:		
	lor(1) = -59.73 dBm lor(2) = -62.73 dBm	+0.13 dB for lor(1) -0.27 dB for lor(2)	lor(1) + TT lor(2) + TT		
8.2.2.2 Scenario 2: Multi carrier case		e to give a simple deriva	uncertainties and the Test Tolerances ation of the Test Requirement in this 902 [24].		
	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:	Channel 1 during T1 and T2:		
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT		
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	-0.80 dB -0.80 dB -0.80 dB -0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT		
	Channel 1 during T1: lor(1) = -73.39 dBm lor(3, 4) = -77.39 dBm loc(1) = -70.00 dBm	Channel 1 during T1: -0.01 dB for lor(1) -0.01 dB for lor(3,4) 0.00 dB for loc(1)	Channel 1 during T1: lor(1) + TT lor(3, 4) + TT loc(1) + TT		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 1 during T2: lor(1) = -67.75 dBm lor(3, 4) = -74.75 dBm loc(1) = -70.00 dBm	Channel 1 during T2: +0.75 dB for lor(1) -0.05 dB for lor(3, 4) -1.80 dB for loc(1)	Channel 1 during T2: lor(1) + TT lor(3, 4) + TT loc(1) + TT
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	Cell 2: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Cells 5 and 6: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	-0.80 dB -0.80 dB -0.80 dB -0.80 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT
	Channel 2 during T1: lor(2) = -67.75 dBm lor(5, 6) = -74.75 dBm loc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.80 dB for loc(2)	Channel 2 during T1: lor(2) + TT lor(5, 6) + TT loc(2) + TT
	Channel 2 during T2: lor(2) = -73.39 dBm lor(5, 6) = -77.39 dBm loc(2) = -70.00 dBm	Channel 2 during T2: -0.01 dB for lor(2) -0.01 dB for lor(5,6) 0.00 dB for loc(2)	Channel 2 during T2: lor(2) + TT lor(5, 6) + TT loc(2) + TT
8.2.3 UTRAN to GSM	TBD		
Cell Re-Selection 8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\frac{CPICH _E_c}{I_{or}} = -10 \text{ dB}$ $lor/loc = 0 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 0.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} = -9.9 \text{ dB}$:
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $Ior/loc = -5 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio - TT}$ $\text{lor/loc = ratio - TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} = (\text{loc/Rxlev})_{\text{minimum requirement}} - \text{TT}$ lor/loc = -5.3 dB $\frac{CPICH_E_c}{I_{or}} - 10.1 \text{ dB:}$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $Ior/loc = 20 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	160,766 = 20 GB	0.3 dB for loc/RXLEV	lor/loc = ratio + TT (loc/Rxlev) _{test requirement} = (loc/Rxlev) _{minimum requirement} + TT
			lor/loc = 20.3 dB
			$\frac{CPICH _E_c}{I_{or}} = -9.9 \text{ dB}:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$	Formulas: $\frac{CPICH _E_c}{} = \text{ratio } \underline{+} \text{ TT}$
	lor/loc = -920 dB	0.3 dB for lor/loc 0.3 dB for	I_{or} I_{or} I_{or} I_{or}
		loc/RXLEV	(loc/Rxlev) _{test requirement} = (loc/Rxlev) _{minimum} requirement _+ TT
			lor/loc = -920.3 dB
			$\frac{CPICH _E_c}{I_{or}} = -\frac{10.19.9}{10.0} \text{ dB}:$
8.2.4 FDD/TDD cell re- selection	TBD		
8.3 UTRAN Connected Mode Mobility 8.3.1 FDD/FDD Soft	TBD	twoon the Test system	uncertainties and the Test Tolerances
Handover	are complex, it is not possible document. The analysis is re-	e to give a simple deriva corded in 3GPP TR 34	ation of the Test Requirement in this 902 [24].
	During T1 and T2/T3/T4/T5/T6:	During T1 and T2/T3/T4/T5/T6:	During T1 and T2/T3/T4/T5/T6:
	Cell 1: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB Relative delay of paths received from cell 2 with respect to cell 1 = {-148 148} chips	+0.70 dB +0.70 dB +0.70 dB +0.70 dB 0.5 chips	Ec/lor ratio + TT {-148+TT 148-TT} chips
	During T1:	During T1:	During T1:
	Already covered above	Covered above	Already covered above
	<u>During T2/T3/T4/T5/T6:</u> Cell 2:	<u>During</u> <u>T2/T3/T4/T5/T6:</u>	<u>During T2/T3/T4/T5/T6:</u>
	CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB SCH_Ec/lor = -12 dB PICH_Ec/lor = -15 dB	+0.70 dB +0.70 dB +0.70 dB +0.70 dB	Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT Ec/lor ratio + TT

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CHANGE REQUEST						CR-Form-v7		
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For <u>HELP</u> on	using th	is form, se	e bottom of	this page or	look at t	he pop-up text	over the % sy	rmbols.
Proposed change	e affects	: UICC	apps 	ME X	Radio	Access Networ	rk Core N	etwork
Title:	R Propos	sed addition	of HSDPA	downlink code	allocation	on to 34.121 Ann	nex	
Source:	€ NEC							
Work item code:	€ TEI					Date: ∺	30/07/2004	
Category:	F A B C D Detaile	(correction (correspond (addition of (functional) (editorial) (ed explanation	nds to a corre of feature), I modification modification)	ection in an ea		2	Rel-5 the following re (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6))))
Reason for chang			ble showing blems in the		downlin	k code allocation	on will avoid c	ode
Summary of chan	ıge: ₩ <mark>I</mark> I	nformation	on the HSD	OPA downlink	code al	location is add	ed into Annex	E.6.
Consequences if not approved:	₩F	otential H	SDPA down	nlink code col	lision pro	oblems.		
Clauses affected:	#	Annex E.6	6					
Other specs affected:	X	X Test	er core spec t specificatio // Specificati	ons	器			
Other comments:	\mathfrak{H}	This CR is	applicable	for UE's supp	porting F	Rel-5 or later.		

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- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

E.6 Downlink Physical Channels Code Allocation (This clause is informative)

E.6.1 Downlink Physical Channels Code Allocation for non-HSDPA test cases

Table E.6.1.1 shows the downlink code allocation for non-HSDPA test cases. The numbers in the code columns indicate the code number with the respective spreading factor (SF). The Note column refers to specifications where the code allocation is defined.

Note: There is a code collision between S-CCPCH on SF=64 using code 1 and OCNS DPCH on SF=128 using code 2 which needs to be resolved.

Table E.6.1.1: Downlink Physical Channels Code Allocation for RF testing (non-HSDPA)

Code with SF=256	Code with SF=128	Code with SF=64	Note
0: P-CPICH		01 -04	TS 25.213; 34.108: 6.1.4; 34.121: E.4.2
1: P-CCPCH	0: -		TS 25.213; 34.121: E.4.2
2: PICH		0: -	TS 34.108: 6.1.0b, 6.1.1, 6.1.2, 6.1.3 (SIB5)
3: AICH	1: -		TS 34.108: 6.1.0b, 6.1.1, 6.1.2, 6.1.3 (SIB5)
4: -			OCNS: TS34.121: E.3.6
5: -	2: OCNS DPCH	4 0 000011	S-CCPCH: TS 34.108: 6.1.0b, 6.1.1, 6.1.2, 6.1.3
6: -	0.	1: S-CCPCH	
7: -	3: -		
8: -	4: S-CCPCH		4: TS 34.108: 6.1.1, 6.1.2 (PCH)
9: -	4. S-CCPCH	2: S-CCPCH	2: TS 34.108: 6.1.3 (FACH)
10: -	5: S-CCPCH	2. 3-CCPCH	5: TS 34.108: 6.1.2 (CTCH)
11: -	5. 3-CCFCIT		5. 13 34.106. 6.1.2 (CTCH)
12: -	6: S-CCPCH		TS 34.108: 6.1.3 (PCH)
13: -	0. 0 001 011	3: -	10 04.100. 0.1.0 (1 011)
14: -	7: -	0.	
15: -	, ,		
16: PICH interf.	8: -		WCDMA interferer: TS 34.121: E.4.2
17: -	0.	4: -	
18: -	9: -		
19: -	-		
20: -	10: -		
21: -		5: -	
22: -	11: OCNS DPCH		OCNS: TS 34.121: E.3.6
23: -	10.15	6-7: -	
24-31: - 32: -	12-15: -	0-7	
33: -	16: -		
34: -		8: -	
35: -	17: OCNS DPCH		OCNS: TS 34.121: E.3.6
36-43: -	18-21: -	9-10: -	
44: -		0 10.	
45: -	22: -		
46: -	00 00110 00011	11: -	0000 7004404 500
47: -	23: OCNS DPCH		OCNS: TS 34.121: E.3.6
48-59: -	24-29: -	12-14: -	
60: -			
61: -	30: -	15.	
62: -	21: OCNS DDCU	15: -	OCNS: TS 24 121: E 2 6
63: -	31: OCNS DPCH		OCNS: TS 34.121: E.3.6
64-75: -	32-37: -	16-18: -	
76: -	38: OCNS DPCH	19: -	OCNS: TS 34.121: E.3.6
77: -	30. OCNS DECIT		OONO. 10 04.121. E.J.0

Code with SF=256	Code with SF=128	Code with SF=64	Note
78: -	39: -		
79: -		20.22	
80-91: - 92: -	40-45: -	20-22: -	
93: -	46: -	00	
94: -	47: OCNS DPCH	23: -	OCNS: TS 34.121: E.3.6
95: -			0010. 10 34.121. 2.3.0
96-107: - 108: -	48-53: -	24-26: -	
108	54: -		
110: -	FF. OONE DECL	27: -	OCNIC: TC 24 424: F 2 C
111: -	55: OCNS DPCH		OCNS: TS 34.121: E.3.6
112-123: -	56-61: -	28-30: -	
124: - 125: -	62: OCNS DPCH		OCNS: TS 34.121: E.3.6
126: -		31: -	
127: -	63: -		
128-135: -	64-67: -	32-33: -	
136: -	68: -		
137: - 138: -		34: -	
139: -	69: OCNS DPCH		OCNS: TS 34.121: E.3.6
140-155: -	70-77: -	35-38: -	
156: -	78: OCNS DPCH		OCNS: TS 34.121: E.3.6
157: -	70.00110 51 011	39: -	00110.110.01.121.2.0.0
158: - 159: -	79: -		
160-167: -	80-83: -	40-41: -	
168: -	84: -		
169: -	04	42: -	
170: -	85: OCNS DPCH	12.	OCNS: TS 34.121: E.3.6
171: - 172-187: -	86-93: -	43-46: -	
188: -		45-40.	0000 7004404 500
189: -	94: OCNS DPCH	47: -	OCNS: TS 34.121: E.3.6
190: -	95: -	47	
191: -	00.		
192: DCH SRB 193: -	96: DCH 12.2		TS 34.108: 9.2.1 (DCH SRB and 12.2);
194: -	0.7	48: -	DCH 64: SF32-Code24,
195: -	97: -		DCH 144: SF16-Code12, DCH 384: SF8-Code6
196-223: -	98-111: -	49-55: -	50.1 004. 01 0 00000
224: -	112: -		
225: - 226: -		56: -	
227: -	113: OCNS DPCH		OCNS: TS 34.121: E.3.6
228-235: -	114-117: -	57-58: -	
236: -	118: -		
237: -		59: -	
238: - 239: -	119: OCNS DPCH		OCNS: TS 34.121: E.3.6
240-59: -	120-123: -	60-61: -	
248: -	124: -		
249: -	124	62: -	
250: -	125: OCNS DPCH	, <u>, </u>	OCNS: TS 34.121: E.3.6
251: - 252-255: -	126-127: -	63: -	
202 200	120 121.	50.	

E.6.2 Downlink Physical Channels Code Allocation for HSDPA test cases

Tables E.6.2.1 and E.6.2.2 show the downlink code allocation for HSDPA test cases. Table E.6.2.1 shows the complete downlink code tree for spreading factors 16, 32 and 64. Table E.6.2.2 shows details of the downlink code tree for SF=16 code=0 with spreading factors 64, 128 and 256. The numbers in the code columns indicate the code number with the respective spreading factor (SF). The Note column refers to specifications where the code allocation is defined.

Note 1: Performance requirements for test cases using 15 HS-PDSCH codes have not been defined by RAN4 yet. A specific code allocation for test cases using 15 HS-PDSCH codes needs to be aligned with assumptions taken in RAN4.

Note 2: The OCNS DPCH codes defined in Table E.5.5 use codes 2-7 (SF128) which collides with HS-SCCH and S-CCPCH. For this reason the OCNS DPCH codes 122-127 (SF128) have been used in the tables below. This needs to be confirmed with RAN4.

Table E.6.2.1: HSDPA Downlink Physical Channels Code Allocation for RF testing

Code with	Code with SF=32	Code with	Note		
SF=64		SF=16			
<u>0: -</u>	0: -		P-CPICH, P-CCPCH, PICH, AICH on SF256		
<u>1: -</u>	0	0: -	HS-SCCH1 and HS-SCCH2 on SF128		
2: S-CCPCH	1: -	<u>0</u>	S-CCPCH: TS 34.108: 6.1.0b		
<u>3: -</u>	1		HS-SCCH3 and HS-SCCH4 on SF128		
<u>4: -</u>	2: -				
<u>5: -</u>	<u>Z</u>	1: HS-PDSCH	1st HS-PDSCH code		
<u>6: -</u>	3: -	1.110-1 DOC11	13t 113-1 DOCT COde		
<u>7: -</u>	<u>5</u>				
<u>8: -</u>	- <u>4: -</u>				
<u>9: -</u>	11. 1	2: HS-PDSCH	2nd HS-PDSCH code		
<u>10: -</u>	<u>5: -</u>	<u>2.110-1 DOOL1</u>	ZHOTIO-I DOOLI CODE		
<u>11: -</u>	<u>u. </u>				
<u>12: -</u>	<u>6: -</u>				
<u>13: -</u>	<u>u.</u>	3: HS-PDSCH	3rd HS-PDSCH code		
<u>14: -</u>	<u>7: -</u>	<u> </u>	<u>ord file i Beeli tode</u>		
<u>15: -</u>	<u> </u>				
<u>16: -</u>	8: -				
<u>17: -</u>	<u>u.</u>	4: HS-PDSCH	4th HS-PDSCH code		
<u>18: -</u>	9: -	1.1101 00011	TATTIOT BOOT COUG		
<u>19: -</u>	<u>o.</u>				
<u>20: -</u>	10: -				
<u>21: -</u>	10.	5: HS-PDSCH	5th HS-PDSCH code		
<u>22: -</u>	11: -	<u>0.1101 D0011</u>	<u> </u>		
<u>23: -</u>					
<u>24: -</u>	12: -				
<u>25: -</u>		6: HS-PDSCH	6th HS-PDSCH code		
<u>26: -</u>	<u>13: -</u>	<u> </u>	<u> </u>		
<u>27: -</u>					
<u>28: -</u>	14: -				
<u>29: -</u>		7: HS-PDSCH	7th HS-PDSCH code		
30: -	15: -				
<u>31: -</u>					
<u>32: -</u>	16: -				
33: -		8: HS-PDSCH	8th HS-PDSCH code		
<u>34: -</u>	<u>17: -</u>				
<u>35: -</u>					
<u>36: -</u>	18: -				
<u>37: -</u>		9: HS-PDSCH	9th HS-PDSCH code		
38: -	<u> 19: -</u>				
<u>39: -</u>		40 110 000011	1011 110 000011		
<u>40: -</u>	20: -	10: HS-PDSCH	10th HS-PDSCH code		
41: -					
<u>42: -</u>	<u>21: -</u>				

Code with SF=64	Code with SF=32	Code with SF=16	<u>Note</u>
43: -			
<u>44: -</u> <u>45: -</u>	<u>22: -</u>	44.	
<u>46: -</u> <u>47: -</u>	<u>23: -</u>	<u>11: -</u>	
<u>48: -</u> <u>49: -</u>	<u>24: -</u>	12: -	A-DPCH on code 192 (SF256) is the associated dedicated channel and contains
<u>50: -</u> <u>51: -</u>	<u>25: -</u>	12	the SRB from call setup (TS 34.108: 9.2.1)
<u>52: -</u> <u>53: -</u>	<u> 26: -</u>	<u> 13: -</u>	
<u>54: -</u> <u>55: -</u>	<u>27: -</u>	10.	
<u>56: -</u> <u>57: -</u>	<u>28: -</u>	<u> 14: -</u>	
<u>58: -</u> <u>59: -</u>	<u>29: -</u>	1.11	
<u>60: -</u> <u>61: -</u>	<u>30: -</u>	<u> 15: -</u>	OCNS DPDCH on codes 122-127 (SF128)
<u>62: -</u> <u>63: -</u>	<u>31: -</u>	10.	

Table E.6.2.2: HSDPA Downlink Physical Channels Code Allocation for SF=16 code=0

Code with SF=256	Code with SF=128	Code with SF=64	<u>Note</u>
<u>0: P-CPICH</u> <u>1: P-CCPCH</u>	<u>0: -</u>	0.	<u>TS 25.213; 34.108: 6.1.4; 34.121: E.4.2</u> <u>TS 25.213; 34.121: E.4.2</u>
2: PICH 3: AICH	1:-	<u>0: -</u>	TS 34.108: 6.1.0b (SIB5) TS 34.108: 6.1.0b (SIB5)
4: - 5: - 6: -	2: HS-SCCH1	1.	TS 34.108: 9.2.1 RB Setup message
<u>6: -</u> <u>7: -</u>	3: HS-SCCH2	<u>1: -</u>	TS 34.108: 9.2.1 RB Setup message
<u>7: -</u> <u>8: -</u> <u>9: -</u>	<u>4: -</u>	2: S CCDCH	C CCDCH: TC 24 400: C 4 0b (CIDE)
<u>10: -</u> <u>11: -</u>	<u>5: -</u>	2: S-CCPCH	S-CCPCH: TS 34.108: 6.1.0b (SIB5)
<u>12: -</u> <u>13: -</u>	6: HS-SCCH3	2.	TS 34.108: 9.2.1 RB Setup message
<u>14: -</u> 15: -	7: HS-SCCH4	<u>3: -</u>	TS 34.108: 9.2.1 RB Setup message

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ж	34.121 CR 430	#rev - [#]	Current version:	5.4 *
For <u>HELP</u> on u	using this form, see bottom of the	is page or look at the	pop-up text over the	e ж symbols.
Proposed change	affects: UICC apps米	ME <mark>X</mark> Radio Ac	cess Network C	ore Network
Title: ૠ	Maximum Input Level for HSI	OPA		
Source: #	Siemens AG			
Work item code: ₩	Rel-5		Date: Ж	
Category: ₩	Use one of the following categories F (correction) A (corresponds to a correction B (addition of feature), C (functional modification) Detailed explanations of the above be found in 3GPP TR 21.900.	es: on in an earlier release, feature)	Release: # Rel-5 Use one of the follow 2 (GSM Pl) R96 (Release R97 (Release R98 (Release R99 (Release Rel-4 (Release Rel-5 (Release Rel-6 (Release	hase 2) e 1996) e 1997) e 1998) e 1999) e 4) e 5)
Reason for change	e: 米 Addition of Rel 5 HSDPA	A requirements.		
Summary of chang	ge:	ut overload power tes	st for 16QAM	
Consequences if not approved:	₩ Incomplete test, not cove	ering HSDPA cases.		
Clauses affected:	策 6.3, 6.3A			
Other specs affected:	Y N Other core specific Test specifications O&M Specification	3		
Other comments:	策 This CR originally preser	nted at T1 no.23 but	not incorporated.	

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3)	3) With "track changes" disabled, paste the entire CR form (the clause containing the first piece of changed text. Dele the change request.	use CTRL-A to select it) into the specification just in front of te those parts of the specification which are not relevant to

6.3 Maximum Input Level

6.3.1 Definition and applicability

This is defined as the maximum mean power received at the UE antenna port, which shall not degrade the specified BER performance.

The requirements and this test apply to all types of UTRA for the FDD UE.

6.3.2 Minimum requirements

The BER shall not exceed 0.001 for the parameters specified in table 6.3.

The reference for this requirement is TS 25.101 [1] clause 7.4.1.

NOTE: Since the spreading factor is large (10log(SF)=21dB), the majority of the total input signal consists of the OCNS interference. The structure of OCNS signal is defined in clause E.3.3.

6.3.3 Test purpose

To verify that the UE BER shall not exceed 0,001 for the parameters specified in table 6.3.

An inadequate- maximum input level causes loss of coverage near the Node B

The lack of the maximum input level decreases the coverage area at the near side from Node B.

6.3.4 Method of test

6.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect the SS to the UE antenna connector as shown in figure A.3.
- 2) RF parameters are set up according to table 6.3.3. and table E.3.3.
- 3) A call is set up according to the Generic call setup procedure specified in TS34.108[3] sub clause 7.3.2, with the following exception for information elements in RADIO BEARER SETUP message. With this exception, the Power Control Algorithm for the Uplink is set to algorithm 2.
- 4) Enter the UE into loopback test mode and start the loopback test.

Table 6.3.1A Contents of RADIO BEARER SETUP message: AM or UM

Information Element	Value/Remark
CHOICE channel requirement	Uplink DPCH info
- Power Control Algorithm	Algorithm2

See TS 34.108 [3] and TS 34.109 [4] for details regarding generic call setup procedure and loopback test.

Table 6.3.24: Test parameters for Maximum Input Level

Parameter	Level / Status	Unit
î _{or}	-25	dBm / 3,84MHz
$\frac{DPCH_E_c}{I_{or}}$	-19	dB
UE transmitted mean power	20 (for Power class 3) 18 (for Power class 4)	dBm

6.3.4.2 Procedure

- 1) Set the power level of UE according to the table 6.3B.3 or send the power control commands (1dB step size should be used.) to the UE until UE output power measured by Test System shall be kept at the specified power level with ±1dB tolerance.
- 2) Measure the BER of DCH received from the UE at the SS.

6.3.5 Test requirements

The measured BER, derived in step 1), shall not exceed 0,001.

Table 6.3.B3: Test requirements for Maximum Input Level

Parameter	Level / Status	Unit
Îor	-25.7	dBm / 3,84MHz
$DPCH_{-}E_{c}$	-19	dB
I_{or}		
UE transmitted mean power	20 (for Power class 3)	dBm
	18 (for Power class 4)	

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

6.3A Maximum Input Level for HS-PDSCH Reception (16QAM)

6.3A.1 Definition and applicability

Maximum input level is defined as the maximum mean HS-PDSCH power received at the UE antenna port, which shall not degrade the specified HSDPA throughput performance. The requirements and this test apply to all types of UTRA FDD UE that support HSDPA(16QAM).

6.3A.2 Minimum requirements

For the parameters specified in Table 6.3A.1, the requirements are specified in terms of a minimum information bit throughput R as shown in Table 6.3A.2 for the DL reference channel H-Set 1 specified in Annex C.8. with the addition of the parameters added in the end of Table 6.3A.1,

The throughput shall meet or exceed the minimum level the for the parameters specified in table 6.3A.1.

The reference for this requirement is TS 25.101 [1] clause 7.4.1.

Table 6.3A.1 Minimum requirement parameters for 16QAM Maximum Input Level

<u>Parameter</u>	<u>Unit</u>	Test
Phase reference		<u>P-CPICH</u>
<u>Î</u> or	<u>dBm/3.84 MHz</u>	<u>-25 *</u>
UE transmitted mean	dBm	20 (for Power class 3)
<u>power</u>	<u>udiii</u>	18 (for Power class 4)
<u>DPCH</u>	DPCH_Ec/lor	<u>-13</u>
HS-SCCH 1	HS-SCCH_Ec/lor	<u>-13</u>
Redundancy and		<u>6</u>
constellation version		
Maximum number of		<u>1</u>
HARQ transmissions		
Note: The HS-DSCH shall be transmitted continuously with constant power		
but only every third TTI shall be sent to the UE under test.		

Table 6.3A.2 Minimum throughput requirement

$\frac{\text{HS-PDSCH}}{E_c/I_{or}} \underline{\text{(dB)}}$	<u>T-put_R_(kbps) *</u>
<u>-3</u>	700

NOTE: The structure of OCNS signal is defined in clause E.3.3.

6.3A.3 Test purpose

To verify that the UE HSDPA throughput for the parameters specified in table 6.3A.4

An inadequate maximum input level causes loss of coverage near the Node B.

6.3A.4 Method of test

6.3A.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

RF parameters are given in tables 6.3A.4 and table E.3.3.

Table 6.3A.3 Contents of RADIO BEARER SETUP message: AM or UM

Information Element	<u>Value/Remark</u>
CHOICE channel requirement	Uplink DPCH info
- Power Control Algorithm	Algorithm2

6.3A.4.2 Procedure

Connect the SS to the UE antenna connector as shown in figure A.3.

1) The UE is switched on.

- 2) An RRC connection is set-up according to the generic HSDPA set-up procedure specified in TS 34.108 [3]. (The Power Control Algorithm for the Uplink is set to algorithm 2). Additional radio bearer message definition is in table 6.3A.3
- 3) Set the power level of UE according to the table 6.3A.4 and send power control commands to the UE. The UE output power measured by Test System shall be kept at the specified power level with ±1dB tolerance.
- 4). Measure the HSDPA throughput received from the UE at the SS, by counting the number of NACK, ACK and DTX on the UL HS-DPCCH (Throughput = blocksize*number of blocks acknowledged/time).
- 5) The UE is switched off.

6.3A.5 Test requirements

The measured throughput, as derived in step 4), shall meet or exceed 700Kbit/second. The minimum number of measurements required for a statistically significant result to this test are clarified in annex F.6.3

Table 6.3A.4: Test conditions for 16QAM Maximum Input Level

<u>Parameter</u>		<u>Value</u>
Phase reference		P-CPICH
<u>Îor</u>	dBm/3.84 MHz	<u>-25.7</u>
UE transmitted mean power	<u>dBm</u>	20 (for Power class 3) 18 (for Power class 4)
DPCH	DPCH_Ec/lor	<u>-13</u>
HS-SCCH 1	HS-SCCH_Ec/lor	<u>-13</u>
Redundancy and constellation version		<u>6</u>
Maximum number of HARQ transmissions		1

Note: The HS-DSCH shall be transmitted continuously with constant power but only every third TTI shall be sent to the UE under test.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.