Technical Specification Group Terminals Meeting #18, New Orleans, USA, 4-6 December 2002

Source:	T1
Title:	CR's to TS 34.121 v3.10.0 for approval
Agenda item:	5.1.3
Document for:	Approval

This document contains 23 CRs to TS 34.121 v3.10.0. These CRs have been agreed by T1 and are put forward to TSG T for approval.

CRs related to corrections to RRM test cases:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version -New	Doc-2nd- Level
34.121	213	-	R99	Maintenance of FDD/TDD Cell Re-selection test case	F	3.10.0	3.11.0	T1-020632
34.121	214	-	R99	Maintenance of UE Transmit Timing test case	F	3.10.0	3.11.0	T1-020633
34.121	216	-	R99	Correction to clause 8.3.6 Cell Re-selection in CELL_PCH	F	3.10.0	3.11.0	T1-020636
34.121	217	-	R99	Maintenance of 8.4.2.4 Correct behavior when reaching maximum transit power	F	3.10.0	3.11.0	T1-020637
34.121	218	-	R99	Correction of table numbers	F	3.10.0	3.11.0	T1-020639
34.121	219	-	R99	Correction of message parameter	F	3.10.0	3.11.0	T1-020640
34.121	220	-	R99	Correction of test parameter in 8.4.2.3 Correct behavior when Time-out	F	3.10.0	3.11.0	T1-020641
34.121	221	-	R99	Modification of the Random Access Test 8.4.2.1, Correct behaviour when receiving an ACK.	F	3.10.0	3.11.0	T1-020651
34.121	223	-	R99	Correction of SCH side conditions and other corrections	F	3.10.0	3.11.0	T1-020750
34.121	225	-	R99	Text for annex F.6.2 Statistical testing of RRM delay performance	F	3.10.0	3.11.0	T1-020752
34.121	230	-	R99	Revision of table titles in Sec 8. to provide unique and unambiguous descriptions	F	3.10.0	3.11.0	T1-020757
34.121	231	-	R99	Correction to clause 8.3.2 FDD/FDD Hard Handover	F	3.10.0	3.11.0	T1-020758
34.121	232	-	R99	Correction to PHYSICAL CHANNEL RECONFIGURATION message that activates compressed mode	F	3.10.0	3.11.0	T1-020759

CRs related to introduction of test tolerance:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version -New	Doc-2nd- Level
34.121	233	-	R99	Introduction of test tolerances in Cell Reselection multi carrier test cases	F	3.10.0	3.11.0	T1-020769

CRs related to other corrections to R99 test cases:

Spec	CR	Rev	Phase	Subject	Cat	Version	Version	Doc-2nd-
						-	-New	Level
						Current		
34.121	212	-	R99	Correction of table titles of Demodulation of DCH in closed loop transmit diversity mode test case	F	3.10.0	3.11.0	T1-020631
34.121	215	-	R99	Correction of ACLR absolute power limit	F	3.10.0	3.11.0	T1-020634
34.121	222	-	R99	Modifications to the test case for Inner Loop Power Control in the Uplink in TS34.121	F	3.10.0	3.11.0	T1-020642
34.121	224	-	R99	Corrections of test for power setting in uplink compressed mode	F	3.10.0	3.11.0	T1-020751
34.121	226	-	R99	Maintenance of annex F.6.1 Statistical testing of BER BLER	F	3.10.0	3.11.0	T1-020753

				performance				
34.121	227	-	R99	Dual limit BLER tests	F	3.10.0	3.11.0	T1-020754
34.121	228	-	R99	Correction of test method: Out-of-synchronisation handling of output power	F	3.10.0	3.11.0	T1-020755
34.121	229	-	R99	Correction of table and subclause references	F	3.10.0	3.11.0	T1-020756
34.121	234	-	R99	Correction of UL reference measurement channel	F	3.10.0	3.11.0	T1-020889

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Reason for change:	# Terminology is incorrect in titles of test requirement tables
Summary of change:	# Word "feedback" is replaced by "closed loop" in titles of tables 7.6.2.2 and 7.6.2.4.
Consequences if	# Incorrect terminology may cause confusion.
not approved:	
Clauses affected:	第 7.6.2
	YN
Other specs	X Other core specifications %
affected:	X Test specifications

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Other comments:

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X O&M Specifications

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7.6.2 Demodulation of DCH in closed loop transmit diversity mode

7.6.2.1 Definition and applicability

The receive characteristic of the dedicated channel (DCH) in closed loop transmit diversity mode is determined by the Block Error Ratio (BLER). DCH is mapped into in Dedicated Physical Channel (DPCH).

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

7.6.2.2 Minimum requirements

For the parameters specified in table 7.6.2.1 the average downlink $\frac{DPCH_{-}E_{c}}{I_{or}}$ power ratio shall be below the specified

value for the BLER shown in table 7.6.2.2.

Table 7.6.2.1: Test Parameters for DCH Reception in closed loop transmit diversity mode (Propagation condition: Case 1)

Parameter	Test 1 (Mode 1)	Test 2 (Mode 2)	Unit
\hat{I}_{or}/I_{oc}	9	9	dB
I _{oc}	-60	-60	dBm / 3,84 MHz
Information data rate	12,2	12,2	kbps
Feedback error ratio	4	4	%

Table 7.6.2.2: Test requirements for DCH reception in feedback closed loop transmit diversity mode

Test Numb	$\frac{DPCH_{-}E_{c}}{I_{or}}$ (see note) BLER				
1	–18,0 dB	10 ⁻²				
2	–18,3 dB	10 ⁻²				
NOTE: T s d	This is the total power from both antennas. Power sharing between antennas are closed loop mode dependent as specified in TS 25.214 [5].					

The reference for this requirement is TS 25.101 [1] clause 8.6.2.1.

7.6.2.3 Test purpose

To verify that UE reliably demodulates the DPCH of the Node B while closed loop transmit diversity is enabled during the connection.

7.6.2.4 Method of test

7.6.2.4.1 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.

- 1) Connect SS, multi-path fading simulators and an AWGN source to the UE antenna connector as shown in figure A.12.
- 2) Set up a call according to the Generic call setup procedure.

- 3) RF parameters are set up according to table 7.6.2.1 and table E 3.5.
- 4) Enter the UE into loopback test mode and start the loopback test.
- 5) Activate closed loop Tx diversity function.
- 6) Set up fading simulators as fading condition case 1, which is described in table D.2.2.1.

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

7.6.2.4.2 Procedure

1) Measure BLER in points specified in table 7.6.2.2.

7.6.2.5 Test Requirements

For the parameters specified in table 7.6.2.3 the average downlink $\frac{DPCH - E_c}{I_{or}}$ power ratio shall be below the specified

value for the BLER shown in table 7.6.2.4.

Table 7.6.2.3: Test Parameters for DCH Reception in closed loop transmit diversity mode (Propagation condition: Case 1)

Parameter	Test 1 (Mode 1)	Test 2 (Mode 2)	Unit
\hat{I}_{or}/I_{oc}	9,8	9,8	dB
I _{oc}	-60	-60	dBm / 3,84 MHz
Information data rate	12,2	12,2	kbps
Feedback error ratio	4	4	%

Table 7.6.2.4: Test requirements for DCH reception in feedback closed loop transmit diversity mode

Test Number		$\frac{DPCH_{-}E_{c}}{I_{or}}$ (see note)	BLER		
1		–17,9 dB	10 ⁻²		
2		–18,2 dB	10 ⁻²		
NOTE: This is the total power from both antennas. Power sharing between antennas are closed loop mode dependent as specified in TS 25.214 [5].					

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.

æ	34.121 CR 213 #r	ev - # Current vers	^{sion:} 3.10.0 [#]						
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Proposed chang	affects: UICC apps ೫ M	E X Radio Access Netwo	rk Core Network						
Title:	Maintenance of FDD/TDD Cell Re-	selection test case							
Source:	T1/RF								
Work item code:	-	Date:	7/11/2002						
Category:	 F Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in a B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above cate be found in 3GPP <u>TR 21.900</u>. 	Release: # Use <u>one</u> of 2 an earlier release) R96 R97 re) R98 R99 gories can Rel-4 Rel-5 Rel-6	R99 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)						

Reason for change:	# General test parameters are not consistent in 25.133 and 34.121. This 34.121 CR is based on 25.133 CR152.
Summary of change.	:# General test parameters in 34.121 table 8.2.4.1 are aligned with 25.133 table A.4.8.
Consequences if not approved:	# 34.121 and 25.133 are inconsistent
Clauses affected:	8.2.4
Other specs affected:	Y N X Other core specifications % X Test specifications % X O&M Specifications *
Other comments:	ж

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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.

8.2.4 FDD/TDD Cell Re-selection

8.2.4.1 Definition and applicability

The cell re-selection delay is defined as the time from the cell quality levels change to the moment when this change makes the UE reselect a better ranked cell, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on the new cell.

This test is for the case where the UE camps on an FDD cell and reselects to a TDD cell.

The requirements and this test apply to UEs supporting both FDD and TDD.

8.2.4.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1,28 s. This shall be verified in more than [FFS]% of the cases with a confidence level of [FFS]%.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2.4 and A.4.4.

8.2.4.3 Test purpose

To verify that the UE meets the minimum requirement for the case where the UE camps on an FDD cell and reselects to a TDD cell.

8.2.4.4 Method of test

8.2.4.4.1 Initial conditions

This scenario implies the presence of UTRA FDD and 1 UTRA TDD cell as given in tables 8.2.4.1, 8.2.4.2 and 8.2.4.3. The maximum repetition period of the relevant system information blocks that need to be received by the UE to camp on a cell shall be 1280 ms.

Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.4.1: General test parameters for FDD/TDD Cell Re-selection

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell1	FDD cell
condition	Neighbour cells		Cell2	TDD cell
Final condition	Active cell		Cell2	TDD cell
UE TXPWR MAX RACH		<u>dBm</u>	<u>21</u>	The value shall be used for all cells in the test.
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 length		S	1.28	The value shall be used for all cells in the test.
T1		S	15	Cell 1 better ranked than cell 2
	T2	S	15	Cell2 better ranked than cell 1

Parameter	Unit	Ce	11
		T1	T2
UTRA RF Channel Number		Chan	nel 1
CPICH_Ec/lor	dB	-1	0
P-CCPCH_Ec/lor	dB	-1	2
SCH_Ec/lor	dB	-1	2
PICH_Ec/lor	dB	-1	5
OCNS_Ec/lor	dB	-0.9	941
\hat{I}_{or}/I_{oc}	dB	9	3
I _{oc}	dBm / 3.84 MHz	-70	
CPICH_RSCP	dBm	-71	-77
Propagation Condition		AW	GN
Cell_selection_and_reselection_quality_mea		CPICH	_Ec/No
sure			
Qrxlevmin	dBm	-1	15
Qoffset1 _{s,n}	dB	()
Qhyst1	dB	()
Treselection	S	()
Sintrasearch	dB	nots	sent
Sintersearch	dB	not	sent

Table 8.2.4.2: Cell 1 specific test parameters for FDD/TDD Cell Re-selection

Table 8.2.4.3: Cell 2 specific test parameters for FDD/TDD Cell Re-selection

Parameter	Unit		Cell 2		
DL timeslot number		()	8	
		T1	T2	T1	T2
UTRA RF Channel Number			Cha	nnel 2	
P-CCPCH_Ec/lor	dB	Ť	3	n.	a.
PICH_Ec/lor	dB	n.	a.	-	3
SCH_Ec/lor	dB			-9	
SCH_t _{offset}	dB			10	
OCNS_Ec/lor	dB		-3	.12	
\hat{I}_{or}/I_{oc}	dB	-4	2	-4	2
P-CCPCH RSCP	dBm	-77	-71	n.a.	n.a.
I _{oc}	dBm/ 3,84 MHz		-	70	
Propagation Condition			AV	/GN	
Qrxlevmin	dBm		-1	03	
Qoffset2 _{s,n}	dB			0	
Qhyst2	dB			0	
Treselection	S	0			
Sintrasearch dB			not	sent	
Sintersearch dB not sent					
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.					

8.2.4.4.2 Procedures

- a) The SS activates cell 1 and cell 2 with T1 defined parameters and monitors them for random access requests from the UE.
- b) The UE is switched on.
- c) The SS waits for random access requests from the UE.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for random access request from the UE.

- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for random access requests from the UE.
- h) Repeat step d) to g) [TBD] times.

8.2.4.5 Test requirements

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s in more than [FFS]% of the cases.
- 3) In step g), the UE shall respond on 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.

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Reason for change: ೫	Minimum requirements are not consistent in 25.133 and 34.121. Test procedure in 34.121 is not consistent with 25.133 A.7.1.2. This 34.121 CR is based on 25.133				
	GN23211.				
Summary of change: ₩	1) Minimum requirements in 34.121 subclause 8.5.1.2 are aligned with 25.133 subclause 7.1.2.				
	2) Test procedure in 34.121 subclause 8.5.1.4.2 is aligned with 25.133 subclause A.7.1.2.				
	3) Wording of Test requirements in 34.121 subclause 8.5.1.5 is aligned with test procedure.				
Consequences if # not approved:	34.121 and 25.133 are inconsistent				
Clauses affected: #	8.5.1				
Other specs % affected:	Y N X Other core specifications X Test specifications X O&M Specifications				
Other comments: %					

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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 significant <u>detected</u> 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 significant detected path (in time) of the corresponding downlink DPCCH/DPDCH frame is received from the reference cell plus T₀ chips. T₀ 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 ¹/₄ chip.

The minimum adjustment rate shall be 233ns per second. The maximum adjustment rate shall be 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 ±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	A	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 significant received<u>detected</u> path (in time) of the downlink DPCCH/DPDCH of cell 1.
- b) Test system introduces cell 2 into the test system at delay +2 μ s from cell 1.
- c) Test system 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 significant receiveddetected 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 significant received detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- h) Test system stops sending cell 1 signals.
- i) Test system verifies that the UE does not start to adjust its Tx timing to cell 2 before it receives an active set update message notifying the UE that cell 1 is deleted from the active set.
- j) Test system verifies that UE transmit timing adjustment starts <u>no later than the time when the whole active set</u> <u>update message is available at the UE taking the RRC procedure delay into account.with an The</u> adjustment step size and <u>an the</u> adjustment rate <u>shall be</u> 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 <u>significant received_detected</u> path <u>(in time)</u> 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 significant received<u>detected</u> path (in time) of the downlink DPCCH/DPDCH of cell 2.
- 1) Test system starts sending cell 1 signal again with its original timing.
- m) Test system 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 significant detected path (in time) of the downlink DPCCH/DPDCH of cell 2.
- o) Test system stops sending cell 2 signals.
- p) Test system verifies that the UE does not start to adjust its Tx timing to cell 1 before it receives an active set update message notifying the UE that cell 2 shall be deleted from the active set.

- q) Test system verifies that UE transmit timing adjustment starts <u>no later than the time when the whole active set</u> <u>update message is available at the UE taking the RRC procedure delay into account.with an The</u> adjustment step size and <u>an the</u> adjustment rate <u>shall be</u> 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 <u>significant received</u><u>detected</u> path <u>(in time)</u> 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 significant received<u>detected</u> path (in time) of the downlink DPCCH/DPDCH of cell 1.

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 significant received detected path (in time) of the downlink DPCCH/DPDCH of cell 1.
- 2) In step j), the adjustment step size and <u>the</u> 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 <u>significant receiveddetected</u> path (in <u>time</u>) 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 significant received<u>detected</u> path (in time) of the downlink DPCCH/DPDCH of cell 2.
- 4) In step q), the adjustment step size and <u>the</u> 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 significant received<u>detected</u> 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 significant received 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.

							CR-Form-v7
	CHANGE REQUEST						
ж <mark>Т</mark>	<mark>S34.121</mark>	CR <mark>215</mark>	жrev	- *	Current vers	^{ion:} 3.10.0	ж
For <u>HELP</u> on	using this fo	rm, see bottom of	f this page or l	ook at the	e pop-up text	over the % syn	nbols.
Proposed change	e affects:	UICC apps # 🦲	ME X	Radio Ad	ccess Networ	k Core Ne	twork
Title:	f Correction	on of ACLR absolu	ute power limit	t			
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Reason for change: # In TSG-T1#15, T1-020423(T1R020159) was approved. This relaxed the absolute adjacent channel leakage power by TT(1.5dB) as in Spectrum Emission Mask test. But the original value is already refered by ITU-R IMT.UNWANT-MS, and this causes the discrepancy between IMT.UNWANT-MS and 3GPP test spec TS34.121. It should be retrived to the original value.						absolute Mask , and spec	
Summary of char	ige:	-48,5 dBm is repl TT 1.5 dB for abs	laced with –50 olute power is),0 dBm ir s deleted f	Test require rom Table F.	ements 2.1 and Table F	4.1.
Consequences if not approved:	ж <mark>. The</mark>	regulatory require	ement may dif	fer from 3	GPP Test Sp	pecification.	
Clauses affected:	₩ <mark>5.1</mark> (0.5, F.2.1 and F.4					
Other specs affected:	ポ <mark>イト</mark> ポーズ ス ス	Other core spec Test specificatio O&M Specificat	cifications ons ions	ж			
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downloaded from the 3GPP server under <u>ftp://ftp.3gpp.org/specs/</u> 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.

5.10 Adjacent Channel Leakage Power Ratio (ACLR)

5.10.1 Definition and applicability

ACLR is the ratio of the RRC filtered mean power centred on the assigned channel frequency to the RRC filtered mean power centred on an adjacent channel frequency.

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

5.10.2 Minimum Requirements

If the adjacent channel RRC filtered mean power is greater than -50 dBm then the ACLR shall be higher than the value specified in table 5.10.1.

Power Class	UE channel	ACLR limit
3	+5 MHz or –5 MHz	33 dB
3	+10 MHz or –10 MHz	43 dB
4	+5 MHz or –5 MHz	33 dB
4	+10 MHz or –10 MHz	43 dB

Table 5.10.1: UE ACLR

NOTE 1: The requirement shall still be met in the presence of switching transients.

NOTE 2: The ACLR requirements reflect what can be achieved with present state of the art technology.

NOTE 3: Requirement on the UE shall be reconsidered when the state of the art technology progresses.

The normative reference for this requirement is TS 25.101 [1] clause 6.6.2.2.1.

5.10.3 Test purpose

To verify that the UE ACLR does not exceed prescribed limit shown in table 5.10.1.

Excess ACLR increases the interference to other channels or to other systems.

5.10.4 Method of test

5.10.4.1 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) 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.

5.10.4.2 Procedure

- 1) Set and send continuously Up power control commands to the UE until the UE output power shall be maximum level.
- 2) Measure the RRC filtered mean power.
- 3) Measure the RRC filtered mean power of the first adjacent channels and the second adjacent channels.

4) Calculate the ratio of the power between the values measured in '2)'and '3)'.

5.10.5 Test requirements

If the measured adjacent channel RRC filtered mean power, derived in step 3), is greater than -48,5-50,0 dBm then the measured ACLR, derived in step 4), shall be higher than the limit in table 5.10.2.

Power Class	UE channel	ACLR limit
3	+5 MHz or –5 MHz	32,2 dB
3	+10 MHz or –10 MHz	42,2 dB
4	+5 MHz or –5 MHz	32,2 dB
4	+10 MHz or –10 MHz	42,2 dB

Table 5.10.2: UE ACLR

- NOTE 1: The requirement shall still be met in the presence of switching transients.
- NOTE 2: The ACLR requirements reflect what can be achieved with present state of the art technology.
- NOTE 3: Requirement on the UE shall be reconsidered when the state of the art technology progresses.
- NOTE 4: 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.2.1 Transmitter

I

Table F.2.1: Test	Tolerances fo	r 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 step)
uplink - One step	0.15 dB (2 dB step)
	0.2 dB (3 dB 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: $DPCCH _ E_c$	
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
	1.5 <u>0.0</u> 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	

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.

Test	Minimum Requirement in TS	Test	Test Requirement in TS 34.121
	25.101	Tolerance	
5.014		(11)	
5.2 Maximum Output	Power class 1 (33 dBm)	0.7 dB	Formula: Upper Tolerance limit + 11
Power	10 lefance = +1/-3 dB		Lower Tolerance limit – 11
	Toleronoo +1/2 dB		For power classes 1-3:
	10 lefance = + 1/-3 dB		Upper Tolerance limit = ± 1.7 dB
	Tolorance $= \pm 1/2 dB$		Eower folerance $mm = -3.7 \text{ ub}$
	Power class 4 (21 dBm)		For power class 4.
	Tolerance $= \pm 2 dB$		Lower Tolerance limit $= -2.7 \text{ dB}$
5 3 Frequency Error	The LIE modulated carrier	10 Hz	Eormula: modulated carrier frequency
5.5 Trequency Error	frequency shall be accurate to	10112	error + TT
	within +0.1 ppm compared to the		
	carrier frequency received from		modulated carrier frequency error $- \pm (0.1)$
	the Node B		ppm + 10 Hz)
			pp
5.4.1 Open loop power	Open loop power control	1.0 dB	Formula: Upper Tolerance limit + TT
control in the uplink	tolerance ±9 dB (Normal)		Lower Tolerance limit – TT
	Open loop power control		For Normal conditions:
	tolerance ±12 dB (Normal)		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	See table 5.4.2.1 and 5,4,2,2	0.25dB	Formula: Upper Tolerance limit + TT
control in uplink		0.15 dB	Lower Tolerance limit – TT
		0.2 dB	
E 4.2 Minimum Outrast			F armendar
5.4.3 Minimum Output		1.0 dB	Formula:
FOWEI			UE minimum transmit power + 11
			$O \equiv minimum transmit power = -49 dBm$

Table F.4.1: Derivation of Test Requirements	(Transmitter tests)
Tuble 1.4.1. Derivation of Test Requirements	(manoninition toolo

Test	Minimum Requirement in TS	Test	Test Requirement in TS 34.121
	25.101	Tolerance	
		(TT)	
5.4.4 Out-of-	$\underline{DPCCH}_{-}\underline{E_{c}}$ levels	0.4 dB	Formulas:
synchronisation	I _{or}	for	Ratio between A and B + 11
nandling of output	AB: -22 dB	$\underline{DPCCH}_{\underline{H}}$	Ratio between B and D – 11
power:	BD: -28 dB	I _{or}	Ratio between D and E – 11
	DE: -24 dB		transmit ON/OFE time + TT timing
	EF: -18 dB	0 ms for	
	transmit ON/OFF time	timing	
	200ms	measurem	DPDCH F 40.0 JD
		ent	$\frac{DTDCH_{L}L_{c}}{T} = -16.6 \text{ dB}$
	$\underline{DPDCH}_{\underline{E_c}} = -16.6 \text{ dB}$		I _{or}
	I _{or}		
			I _{oc} - 60 dBm
	I - 60 dBm		
			$\hat{I}/I = -1 dB$
	^ / · · · -		
	$I_{or}/I_{oc} = -1 \text{ dB}$		DPCCH F
			$\underline{DICCH_{L_c}}$ levels:
			I _{or}
			AB: -21.6 dB
			BD: -28.4 dB
			DE: -24.4 dB
			EF: -17.6 dB
			transmit ON/OFE 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	Transmit OFF power shall be	1.0 dB	Formula: Transmit OFF power + TT
power (static case)	less than -56 dBm		Transmit OFF power = –55dBm.
	T (10)	<u> </u>	5 1 () ()
5.5.2 Transmit ON/OFF	I ransmit ON power shall be the	On power	Formula for transmit ON power:
time mask (dynamic	5.5.2.2	upper II =	On power upper TT
case)	Transmit OFF nower shall be	0.7 uB	Transmit ON power target lower limit
	less than -56 dBm	lower TT –	On power lower TT
		1000 H 1 1 -	
		1.0 0.0	To calculate Transmit ON power target
		Off power	value range take the nominal TX power
		TT [] dB	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:
			Iransmit OFF power + Off power TT
E C Charge of TEO		0.0 40	
5.6 Change of IFC:	$I \vdash C$ step size = +5 to +9 dB	0.3 dB	Formula: Upper Tolerance limit + TT
power control step size			Lower Tolerance limit – TT
			Lippor limit – 47 dP
			Upper limit = -4.7 ab
57 Power setting in	Various	TBD	TBD
uplink compressed	Valious	(Subset of	
mode		5.4.2)	

Test	Minimum Require	ement in TS	Test	Test Requirement in TS 34.121				
	25.101		Tolerance (TT)					
5.8 Occupied Bandwidth	The occupied chanr bandwidth shall be I MHz based on a chi 3.84 Mcps.	nel ess than 5 ip rate of	0 kHz	Formula: occupied channel bandwidth: + TT occupied channel bandwidth = 5.0 MHz				
5.9 Spectrum emission mask	Minimum requireme TS25.101 Table 6.1 The lower limit shall / 3.84 MHz or which higher.	nt defined in 0. be –50 dBm ever is	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				
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	If the adjacent chan greater than –50 dB ACLR shall be highe values specified bel	nel power is om then the er than the ow.	1.5<u>0.0</u> dB	Formula: Absolute power threshold + TT				
	Power Classes 3 an UE channel +5 MHz ACLR limit: 33 dB UE channel +10 MH MHz, ACLR limit: 43	nd 4: 2 or -5 MHz, Hz or -10 3 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 Require Add zero to all the values of Requirements in table 5.11 5.11.1b.	ement+ TT of Minimum .1a and			
	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 < t < 1919.6 MHz	-41dBm /300kHz	0 dB	1893.5 MHz < f < 1919.6 MHz	-41dBm /300kHz			
	925 MHZ ≤ f ≤ 935 MHz	–67dBm /100kHz	Uub	925 MHZ ≤ f ≤ 935 MHZ	–67dBm /100kHz			
	935 MHz < f ≤ 960 MHz	–79dBm /100kHz	0 dB	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 modulation: EVM	The measured EVM exceed 17.5%.	l shall not	0%	Formula: EVM limit + TT				
5.13.2 Transmit modulation: peak code	The measured Peak domain error shall n	code ot exceed	1.0 dB	Formula: Peak code domain error + TT Peak code domain error = -14 dB				
domain on or	10 UD.							

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	CHANGE REQUEST	CR-Form-v7
ж	34.121 CR 216	Current version: 3.10.0 [#]
For <u>HELP</u> or	using this form, see bottom of this page or look at the	pop-up text over the X symbols.
Proposed chang	e affects: UICC apps೫ ME Ⅹ Radio Ad	ccess Network Core Network
Title:	Correction to clause 8.3.6 Cell Re-selection in CE	LL_PCH
Source:	# Panasonic	
Work item code:	ж -	Date: ₩ 12/09/2002
Category:	 F Use <u>one</u> 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 <u>TR 21.900</u>. 	Release: # R99 Use <u>one</u> 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 change: ₩	It is not clear in the procedure what should happen in the event of an error 1) There is mention of the Tsi in TS25,133 A.5.5.1.2 and A.5.5.2.2 as follows. 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.
	NOTE: Since 1280 ms is one of the typical values for repeating system information blocks, T_{SI} of 1280 ms could be increased by the RRC procedure delay in order to allow the SIB repetition period of 1280 ms.
	As for TS34.121, the RRC procedure delay for receiving SIB is not taken into consideration.
	2) Periodical Location Updating timer and periodical Routing Area Updating timer is set up in the generic set-up procedure described in TS 34.108 subclause 7.4.2. Hence the UE may perform a Location Updating or Routing Area Updating procedure that is not expected in test procedure since UE is in CELL_PCH state, and so the test procedure is not executed correctly. Periodical cell update procedure is also initiated in CELL_PCH state according to T305.
	3) The beginning of time period T1 isn't clear in "Procedure".
	4)It is not clear how random access procedure is terminated in test procedure.
Summary of change: ¥	1) T_{SI} of 1280 ms is increased by the maximum RRC procedure delay for Broadcast of system information described in TS25.331 13.5.2. This is 100 ms as maximum. Therefore Tsi is set to 1380ms. Tsi is explained in test procedure.

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	 2) Test procedure described in TS34.108 7.3.3 in which periodical AS and NAS timers are deactivated is used in this test case with a modification as IE "RRC State Indicator" in RADIO BEARER SETUP (STEP3) is set to "CELL_PCH". 3) The timing when call set up has completed at step 3 is made the beginning of time period T1. 4) CELL UPDATE and CELL UPDATE CONFIRM message is used to terminate the random access procedure. 5) An error recovery process is proposed that avoids the possibility of double counting errors. 6) Some textual clarification is also proposed for the test purpose.
Consequences if # not approved:	This test case may give false readings which may unfairly penalise a good UE. 1)34.121 and 25.133 will be inconsistent.
	2) The test procedure cannot be executed properly with a compliant UE and test requirement cannot be met.
	3) Ability beyond Minimum requirement is required. Even "Good UE" may not pass this test.
	4) Test procedure will not terminate properly.

Clauses affected:	¥ 8.3.6
Other specs affected:	Y N % Other core specifications % Test specifications % O&M Specifications
Other comments:	x

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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.

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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 [FFS]%.

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

 TevaluateFDD
 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 and 8.3.6.1.2. 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.

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Table 8.3.6.1.1: General test parameters for Cell Re-selection in CELL_PCH

	Parameter	Unit	Value	Comment
initial	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4,	
			Cell5, Cell6	
final	Active cell		Cell1	
condition				
Access Se	rvice Class (ASC#0)			Selected so that no additional delay is caused by the
- Persisten	ce 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	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

Deremeter	Unit	Ce	ell 1	Ce	2	Cell 3		Ce	Cell 4		Cell 5		Cell 6	
Parameter	Unit	T1	T2	T1	T2	T1	T1 T2		T2	T1	T2	T1	T2	
UTRA RF Channel Number		Chann	el 1	Channel 1		Chann	el 1	Channel 1		Channel 1		Channel 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			-15	-15	
OCNS_Ec/lor	dB	-0.941		-0.941		-0.941		-0.941		-0.941		-0.941	1	
\hat{I}_{or}/I_{oc}	dB	7.3	10.27	10.27	7.3	0.27		0.27		0.27		0.27		
I _{oc}	dBm/ 3.84MHz	-70	-70											
CPICH_Ec/lo	dB	-16	-13	-13	-16	-23		-23		-23		-23		
Propagation Condition		AWGN												
Cell_selection_and_ reselection_quality_ measure		CPICH	E _c /N ₀	CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICI E _c /N ₀	Η	
Qqualmin	dB	-	20	-2	20	-20)	-20		-20		-2	20	
Qrxlevmin	dBm	-1	15	-11	15	-11	5	-115		-115		-1	15	
UE_TXPWR_ MAX_RACH	dBm	2	21	21 21 21				21	2	!1				
Qoffset2 _{s, n}	dB	C1, C1, C1, 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, C C3, C C3, C C3, C	1: 0 2: 0 4: 0 5: 0 6: 0	C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C5: 0		C5, C5, C5, C5, C5, C5,	C1: 0 C2: 0 C3: 0 C4: 0 C6: 0	C6, 0 C6, 0 C6, 0 C6, 0 C6, 0	C1: 0 C2: 0 C3: 0 C4: 0 C5: 0	
Qhyst2	dB	Í	0	Ć)	0	0 0)	0		(C	
Treselection	S		0	(0			(0		0		2	
Sintrasearch	dB	not	sent	not sent		not s	ent	not sent		not sent		not	sent	

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.

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- 3) 3) An RRC connection is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2.3.3 to place the UE in the CELL_PCH state on Cell 2 and then the SS waits for this process to complete.
- 4) The SS waits for random access requests from the UE on cell 2.
- 54) After 15 s from the completion of step 3 or the beginning of T1, the parameters are changed to those defined as described for T2 in table 8.3.6.1.3.
- 56) 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. The SS waits for random access requests from the UE.
- 76) 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 If the UE responds on cell 1 within 8 s then the number of successful tests is increased by one.
- <u>78</u>) After <u>a total of another</u> 15 <u>s from the beginning of T2</u>, the parameters are changed <u>to those defined</u> as described for T1 in table 8.3.6.1.3.
- <u>89) 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 The SS waits for random access requests from the UE.</u>
- 109) 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. If the UE responds on cell 2 within 8 s then the number of successful tests is increased by one.
- <u>4104</u>) Steps 4 to 10 are repeated until a total of [50] successes and failures have been recorded Repeat step 5) to 10) [50] times.
- 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 (STEP3)

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

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8.3.6.1.5 Test requirements

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

Parameter	Unit	Ce	ll 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		Chanr	nel 1	Channel 1		Channel 1	Channel 1	Channel 1	Channel 1			
CPICH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-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	-0,928	0.953	-0,953	-0.928	-0.941	-0.941	-0.941	-0.941			
\hat{I}_{or}/I_{oc}	dB	7	0,57	10,57	7	0,27	0,27	0,27	0,27			
I _{oc}	dBm / 3,84 MHz	-70										
CPICH_Ec/lo	dB	-16.4	-12.7	-12.7 -16.4		-23.1	-23.1	-23.1	-23.1			
Propagation Condition			AWGN									
Cell_selection_and_ reselection_quality_ measure		CPICH	I E₀/N₀			CPICH E _c /N ₀	CPICH E _c /N ₀	CPICH E _c /N ₀	CPICH E _c /N ₀			
Qqualmin	dB	-2	20	-20		-20	-20	-20	-20			
Qrxlevmin	dBm	-1	15	-1	15	-115	-115	-115	-115			
UE_TXPWR_MAX_ RACH	dB	2	21	21		21	21	21	21			
Qoffset2 _{s, n}	dB	C1, C1, C1, 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, 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	0	0	0	0			
Treselection	S		0	(0	0	0	0	0			
Sintrasearch	dB	not	sent	not sent		not sent	not sent	not sent	not sent			

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.

8.3.6.2 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 [FFS]%.

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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 and 8.3.6.2.2. 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

	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
DRX cycle	length	S	1.28	The value shall be used for all cells in the test.
T1		S	30<u>15</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 re- selection reaction time is taken into account.

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Table 8.3.6.2.2: Cell specific test parameters for Cell re-selection in CELL_PCH state

Parameter	Unit	Cell 1		Ce	ell 2	Cel	13	Ce	Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Channel 1		Channel 2		Chann	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		
\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	
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		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH	HE₀/N₀	CPICH E _c /N ₀		CPICH	H E₀/N₀	
Qqualmin	dB	-:	20	-:	20	-20		-20		-20		-2	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'	l	2	21	21		2	21	
		C1,	C2: 0	C2,	C1: 0	C3, C	:1:0	C4,	C1: 0	C5, C	1:0	C6,	C1: 0	
		C1,	C3: 0	C2,	C3: 0	C3, C	2: 0	C4,	C2: 0	C5, C	2:0	C6,	C2: 0	
Qoffset2 _{s, n}	dB	C1, C4: 0		C2, C4: 0		C3, C	4: 0	C4,	C3: 0	C5, C3: 0		C6,	C6, C3: 0	
		C1,	C5: 0	C2,	C5: 0	C3, C	5: 0	C4,	C5: 0	C5, C	4:0	C6,	C4: 0	
		C1,	C6: 0 C2, C6: 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			0	
Sintrasearch	dB	not	sent	not	sent	not s	ent	not	sent	not s	ent	not	sent	
Sintersearch	dB	not	sent	not sent not sent not sent		not sent		not sent						

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.<u>3.34.2</u> 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 T2The SS waits for random access requests from the UE on cell 2.
- 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 After 30 s, the parameters are changed as described for T2 in table 8.3.6.2.3.
- 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 The SS waits for random access request from the UE. If the UE responds on cell 1 within 8 s then the number of successful tests is increased by one.
- 7) <u>After a total of 15 s from the beginning of T2, the parameters are changed to those defined for T1</u><u>After another</u> 15 s, the parameters are changed as described for T1 in table 8.3.6.2.3.

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- 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 The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s then the number of successful tests is increased by one.
- 9) 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 Reduce T1 to 15 s and repeat step 5) to 8) [50] times.

10) Steps 4 to 10 are repeated until a total of [50] successes and failures have been recorded

- NOTE: 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: 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	<u>7</u>
Downlink information for each radio link	
- Primary CPICH info	
 Primary scrambling code 	<u>100</u>

8.3.6.2.5 Test requirements

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

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Table 8.3.6.2.3: Test	parameters for	Cell re-selection	multi carrier	multi cell
	parameters for			

Parameter	Unit	Ce	ll 1	Cell 2		Cel	3	Ce	ell 4	Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Char	Channel 2		Channel 1		nnel 1	Channel 2		Channel 2	
CPICH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-10		-10		-10		-10	
PCCPCH_Ec/lor	dB	-	12	-	12	-12		-12		-1	2	-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	-0.928	-0.953	-0.953	-0.928	-0.9	41	-0.	941	-0.9	41	-0.	941
\hat{I}_{or}/I_{oc}	dB	-3.7	2.5	2.5	-3.7	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4
I _{oc}	dBm / 3.84 MHz						-7	70					
CPICH_Ec/lo	dB	-16.3	-12.8	-12.8	-16.3	-19.9	-20.2	-19.9	-20.2	-20.2	-19.9	-20.2	-19.9
Propagation Condition			AWGN										
Cell_selection_and_ reselection_quality_ measure		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPIC	H E₀/N₀	CPICH E _c /N ₀		CPICH E _c /N ₀	
Qqualmin	dB	-2	20	-2	20	-20		-20		-20		-20	
Qrxlevmin	dBm	-1	15	-1	15	-115		-115		-115		-115	
UE_TXPWR_MAX_ RACH	dB	2	21	2	21	2	I		21	2'	1	21	
Qoffset2 _{s, n}	dB	C1, 0 C1, 0 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, 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, C5: 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	0		0		0		0	
Treselection	S	(0	(0	0		0		0		0	
Sintrasearch	dB	not	sent	not	sent	not s	ent	not	sent	not s	sent	not	sent
Sintersearch	dB	not	sent	not	sent	not sent		not sent		not sent		not sent	

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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ж	34.121 CR 217 # rev - [#]	Current version: 3.10.0	¥					
For <u>HELP</u> on	using this form, see bottom of this page or look at the	e pop-up text over the ¥ symb	bols.					
Proposed change affects: UICC apps # ME X Radio Access Network Core Network								
Title:	Maintenance of 8.4.2.4 Correct behavior when rea	aching maximum transit powe	r					
Source:	f T1/RF							
Work item code:	f -	Date:						
Category:	 F Use <u>one</u> 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 <u>TR 21.900</u>. 	Release: % R99 Use one of the following relea 2 2 (GSM Phase 2) 9) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)	ses:					

Reason for change:	Minimum Requirements and Test reqirements in 34.121 clause 8.4.2.4 are not consistent with 25.133. This 34.121 CR is based on 25.133 CR190.
Summary of change:	Minimum Requirements and Test reqirements in 34.121 clause 8.4.2.4 are aligned with 25.133 clause 6.3.2.4 and A.6.2.2.4.
Consequences if not approved:	34.121 and 25.133 are inconsistent.
Clauses affected:	¥ 8424
Other specs affected:	Y N 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 <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

8.4.2.4 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 + / [] dB (or + / [] dB in extreme conditions).

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.
- 2) 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.

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

8.4.2.4.4.2 Procedure

- 1) 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 8.4.2.1.1.
- 2) 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 +/ [] dB (or +/ [] dB in extreme conditions) with more than the tolerance specified in section 6.5 of TS 25.133.

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.

	CHANGE REQUEST										
æ		<mark>34.121</mark>	CR	218	ж rev	-	ж	Current vers	ion: <mark>3.</mark>	. <mark>10.0</mark> ^{\$}	e
For <u>HELP</u> or	n u:	sing this for	m, see	bottom of thi	s page o	r look	at the	pop-up text	over th	е ж symb	ols.
Proposed change affects: UICC apps # ME X Radio Access Network Core Network											
Title:	ж	Correction	n of tab	le numbers							
Source:	ж	T1/RF									
Work item code:	:Ж	-						<i>Date:</i> ೫	12/09	/2002	
Category:	ж	F Use <u>one</u> of F (cor A (cor B (add C (fun D (edi Detailed exp be found in	the follo rection) respond dition of ctional n torial mo blanatio 3GPP <u>1</u>	wing categorie ds to a correction feature), modification of odification) ns of the above $\overline{R 21.900}$.	s: on in an ea feature) e categorie	arlier re es can	elease	Release: % Use <u>one</u> of 2 () R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	R99 the follo (GSM F (Releas (Releas (Releas (Releas (Releas (Releas	wing releas Phase 2) te 1996) te 1997) te 1998) te 1999) te 4) te 5) te 6)	ses:

Reason for change: #	Referred table numbers are wrong.					
Summary of change: #	Table numbers are corrected.					
Consequences if 🛛 🕷	Wrong reference might cause misinterpretation in the test.					
not approved:						
Clauses affected: #	8.3.1					
Other specs % affected:	YNXOther core specifications#XTest specificationsXO&M Specifications					
Other comments: 第						

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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 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 shall be less than 60 ms in CELL_DCH state. The rate of correct soft handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

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.

The normative reference for this requirement is TS 25.133 [2] clauses 5.1.2 and A.5.1.1.

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 $8.3.\underline{12}.1.1$ and $8.3.\underline{12}.1.2$ 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 five successive time periods, with a time duration of T1, T2, T3, T4 and T5 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send an Active Set Update command 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. The RRC procedure delay is defined in TS 25.133 [2].

CHANGE REQUEST								
ж	34.121	CR 219	жrev	-	ж	Current vers	^{ion:} 3.10.	<mark>0</mark> ^ж
For <u>HELP</u> on	using this fo	rm, see bottom of this	s page or l	look a	at the	e pop-up text	over the % s	ymbols.
Proposed change affects: UICC apps# ME X Radio Access Network Core Network								
Title:	Correctio	n of message param	eter					
Source:	f T1/RF							
Work item code:	£ -					<i>Date:</i>	12/09/2002	
Category:	F Use <u>one</u> of F (coil A (coil B (ad C (fur D (ed Detailed ex be found in	the following categories rection) rresponds to a correction dition of feature), nctional modification of t itorial modification) planations of the above 3GPP <u>TR 21.900</u> .	s: on in an ear feature) e categories	<i>lier rei</i> s can	lease	Release: ₩ Use <u>one</u> of 2 8) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	R99 the following re (GSM Phase 2 (Release 1999 (Release 1998 (Release 1998 (Release 4) (Release 5) (Release 6)	eleases: 2) 5) 7) 3) 9)

Reason for change:	# IE 'Replacement activation threshold' is defined as 0 ms in MEASUREMENT CONTROL message. But the value should not have any units.
Summary of changes	fruit unit (ms) is removed
Summary of change.	
Consequences if not approved:	Wrong parameter might confuse readers of the specification.
Clauses affected:	<mark>第</mark> 8.6.1.2
Other specs affected:	Y N # X Other core specifications # X Test specifications X Q&M Specifications

Other comments:

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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		
		ТО	ТО	ТО		
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.

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

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

Parameter	Unit		Ce	Cell 1 Cell 2			Cell3						
		T1	T2	Т3	T4	T1	T2	Т3	T4	T1	T2	T3	T4
CPICH_Ec/lor	dB		-1	0			-1	0		-10			
PCCPCH_Ec/ lor	dB		-12			-12			-12				
SCH_Ec/lor	dB		-12			-12			-12				
PICH_Ec/lor	dB		-1	5		-15			-15				
DPCH_Ec/lor	dB		-1	7		N/A			N/A				
OCNS_Ec/lor	dB		-1.()49		-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						-8	5					
	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 succesfull 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 succesfull 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 succesfull 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 succesfull 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 succesful 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 [50] times.

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)	
IIF 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 Bonorting Mode (10.3.7.40)	Woully
Measurement Report Transfer Mede	
Pariadical Departing / Event Trigger Departing Made	AIVI RLC
Additional managements list (10.2.7.1)	Event trigger
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	Net Descent
-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	
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-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	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-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	TRUE
-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	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	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	0 ms

Information Element/Group name	Value/Remark					
-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 -ms					
-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 25.33	31, clause 10.3.7.6. According to TS 25.331,					
8.6.7.7, this IE is included in MEASUREMENT REPO	ORT if IE "Cell synchronisation information					
reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE ir						
MEASUREMENT CONTROL.						
NOTE 2: Reporting interval = 0 ms means no periodical report	tina.					

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%, with a confidence level of [FFS]% of the cases. 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.

CHANGE REQUEST								
ж	FS34.121 CR <mark>220</mark> # rev - ^{# C}	Current version: 3.10.0 [#]						
For <u>HELP</u> of	using this form, see bottom of this page or look at the p	oop-up text over the X symbols.						
<i>Proposed change affects:</i> UICC apps# ME X Radio Access Network Core Network								
Title:	Correction of test parameter in 8.4.2.3 Correct behave	vior when Time-out						
Source:	# T1/RF							
Work item code	ж -	Date:						
Category:	 F F Use <u>one</u> 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 <u>TR 21.900</u>. 	Release: #R99Use one of the following releases:2(GSM Phase 2)R96R97(Release 1996)R97R98(Release 1997)R99R99Release 1999)Rel-4Release 4)Rel-5Release 5)Rel-6(Release 6)						

Reason for change: ೫	In the test of correct hehaviour when Time-out, it is probable that UE transmit power may reach 0dBm limit defined by "Maximum allowed UL TX power" parameter before completing the preamble cycle. It would be very difficult to perform this test properly according to the current parameters.
Summary of change: Ж	A new table 8.4.2.1.4 is created to list parameters dedicated to this test and Maximum allowed UL TX power is set to 33dBm.
Consequences if % not approved:	A good UE may fail the test when transmit power reaches the limit before sending prescribed number of preambles.

Clauses affected:	% 8.4.2.3
Other specs affected:	Y N 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 <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

8.4.2.3 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.
- 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 8.4.2.1.23 and table 8.4.2.1.34. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no AICH.

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

Parameter	<u>Unit</u>	Value
Access Service Class		
<u>(ASC#0)</u>		
	<u>01</u>	<u>1</u>
<u>- Persistence value</u>		
Maximum number of preamble		<u>2</u>
<u>ramping cycles (M_{max}).</u>		
Maximum number of		<u>12</u>
<u>preambles in one preamble</u>		
<u>ramping cycle</u>		
(Preamble Retrans Max)		
<u>The backoff time T_{B01}</u>	<u>ms</u>	<u>N/A</u>
<u>NB01min=NB01max</u>	<u>#TTI</u>	<u>10</u>
Dower stop when no	٩D	2
Power step when ho	<u>ab</u>	<u>3</u>
acquisition indicator is		
<u>received</u>		
(Power offset P0)		0
Power offset between the last	<u>ab</u>	<u>U</u>
transmitted preamble and the		
control part of the message		
(Power offset P p-m)		
Maximum allowed UL TX	<u>dBm</u>	<u>33</u>
power		

Table 8.4.2.1.4: UE parameters for correct behaviour at Time-out test

8.4.2.3.4.2 Procedure

- 1) 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 8.4.2.1.1.
- 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.

3GPP TSG-T WG1 Meeting #17 Luton, UK, 4th-8th November, 2002

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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.

5.4.2 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 25μ s before the slot boundary to 25μ s after the slot boundary.

TPC_cmd	1	Transmitter power control range (all units are in dB)						
	1 dB st	ep size	2 dB st	ep 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

TPC_cmd group	Transmitte	r power cont TPC_cm	Transmit control rai	ter power nge after 7		
		(all units a	are in dB)		equal TI	PC_cmd
					gro	ups
					(all units	are in dB)
	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 <u>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 Uplink DPCH Power Control Info shall specify the Power Control Algorithm for the Uplink is set to as algorithm 2. for interpreting TPC commands.</u>

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

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

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 1st, 6th or 11th slots of a frame;
 - at least one set of 5 consecutive "0" commands which does not commence in the 1st, 6th or 11th 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: <u>Transmit the PHYSICAL CHANNEL RECONFIGURATION message to Reconfigure the uplink</u> channel <u>in order to set the Power Control Algorithm to algorithm 1, and the TPC step size to 1 dB. <u>Contents of the message is specified in the table 5.4.2.4.2.A.</u> <u>WhenAfter the PHYSICAL CHANNEL</u> <u>RECONFIGURATION COMPLETE message from the UE is received reconfiguration is complete</u>, transmit a sequence of TPC commands with the value 1 until the UE output power is above the maximum power threshold.</u>
- 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: <u>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. <u>WhenAfter the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE is received reconfiguration is complete</u>, 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.</u>

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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 μ s before each slot boundary and 25 μ 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.

Information Flomont	Value/Remark
	Value/Remark
message Type	
UE Information Elements	
-RRC transaction identifier	<u>0</u>
-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	Uplink DPCH info
-Uplink DPCH power control info	
<u>-CHOICE mode</u>	<u>FDD</u>
<u>-DPCCH Power offset</u>	<u>-6dB</u>
<u>-PC Preamble</u>	<u>1 frame</u>
<u>-SRB delay</u>	<u>7 frames</u>
<u>-Power Control Algorithm</u>	Algorithm 1
<u>-TPC step size</u>	<u>1dB</u>
<u>-CHOICE mode</u>	FDD
<u>-Scrambling code type</u>	Long
-Scrambling code number	$\frac{0}{2}$
-Number of DPDCH	$\left \frac{1}{2}\right $
-spreading factor	<u>64</u>
-TFCI existence	IRUE
-Number of FBI bits	Not Present(U)
-Puncturing Limit	<u>1</u>
Downlink radio resources	500
	<u>FUU</u> Nat Drasant
-DOWNIINK PUSCH INTORMATION	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.A: PHYSICAL CHANNEL RECONFIGURATION message for step D (step 5)

Information Element	Value/Remark
Message Type	value/itemark
message Type	
UE Information Elements	
-RRC transaction identifier	<u>0</u>
-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	Uplink DPCH info
-Uplink DPCH power control info	
<u>-CHOICE mode</u>	FDD
<u>-DPCCH Power offset</u>	<u>-6dB</u>
<u>-PC Preamble</u>	<u>1 frame</u>
<u>-SRB delay</u>	<u>7 frames</u>
<u>-Power Control Algorithm</u>	Algorithm 1
<u>-TPC step size</u>	<u>2dB</u>
-CHOICE mode	FDD
<u>-Scrambling code type</u>	Long
-Scrambling code number	
-Number of DPDCH	$\left \frac{1}{2}\right $
-spreading factor	<u>64</u>
-TFCI existence	IRUE
-Number of FBI bits	Not Present(U)
-Puncturing Limit	
Downlink radio resources	555
	<u>FUU</u> Nat Drasant
-DOWNIINK PUSCH INTORMATION	Not Present
Downlink information common for all radio links	Not Present
-DOWNIINK INFORMATION PER radio link list	<u>NOT Present</u>

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

5.4.2.5 Test requirements

- 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 5.4.2.1.
- 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 5.4.2.2.
- c) During Step B, the difference in mean power between adjacent slots shall be within the prescribed range given in table 5.4.2.1, given that every 5th 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 5.4.2.2.
- e) During Step C, the difference in mean power between adjacent slots shall be within the prescribed range given in table 5.4.2.1, given that every 5th 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 5.4.2.2.
- g) During Step E, the difference in mean power between adjacent slots shall be within the prescribed range given in table 5.4.2.1 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 5.4.2.2. 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 5.4.2.1 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 5.4.2.2. 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 5.4.2.1 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.
- 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 5.4.2.2. 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 5.4.2.1 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 5.4.2.2. 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.

5.4.3 Minimum Output Power

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Summary of change	:#	Indication not to verify these requirements in the section 8.4.2.1.5.
Consequences if	ж	Some requirements of TS25.101 are verified twice in the test specification.
not approved:		
Clauses affected:	ж	8.4.2.1

Other specs affected:	Ħ	Υ	N X X X	Other core specifications Test specifications O&M Specifications	¥	
Other comments:	Ħ					

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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.

8.4.2.1 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 $[\pm 2$ dB] as specified in clause 6.5.2.1 of 25.101 [1].

NOTE: In order to calculate the power difference between 10th 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.
- 2) 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

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

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

Table 8.4.2.1.1: RF Parameters for Random Access test

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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.

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		

Table 8.4.2.1.2: UE parameters for Random Access test

Parameter	Unit	Value
Primary CPICH DL TX power	dBm	-8
UL interference	dBm	-102
SIR in open loop power	dB	0
control (Constant value)		
AICH Power Offset	dB	0

Table 8.4.2.1.3: SS parameters for Random Access test

8.4.2.1.4.2 Procedure

- 1) 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 8.4.2.1.1.
- 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 absolute power and the relative power shall meet the requirements in the minimum requirements in clause 8.4.2.1.2. 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.

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.

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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Other corrections: Remaining notes of "14 slots is FFS" were removed. Extra "[" was removed in 8.7.4.2.4.1.

Consequences if # 34.121 is inconsistent with 25.133. not approved:

% 8.6.1, 8.6.2, 8.7.1, 8.7.2, 8.7.3, 8.7.4 Clauses affected: YN X Other core specifications X Test specifications ж ж

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How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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

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 $Y_{measurement intra}$ 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.

$$Y_{\text{measurement intra}} = Floor \left\{ X_{\text{basic measurement FDD}} \cdot \frac{T_{\text{Intra}}}{T_{\text{Measurement Period, Intra}}} \right\} \text{ cells}$$

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.

 $T_{\text{basic_identify}_{\text{FDD, intra}}} = 800 \text{ ms.}$ 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.

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 table 8.6.1.1.1 and 8.6.1.1.2 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 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		24	
T1	S	5	
T2	S	5	
Т3	S	5	

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			-1.049			-0.941		
\hat{I}_{or}/I_{oc}	dB	0	6.97	0	-Infinity	5.97	-Infinity	
I _{oc}	dBm/3.84 MHz	-70						
CPICH_Ec/lo	dB	-13	-13	-13	-Infinity	-14	-Infinity	
Propagation Condition		AWGN						

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

8.6.1.1.4.2 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 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 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 succesfull 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.
- 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 succesfull 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 [50] times.

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 A of 34.123-1 [21], 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					
-Measurement quantity	CPICH_EC/NU				
-Intra-irequency reporting quantity (10.3.7.41)					
-Reporting quantities for active set cells (10.3.7.5)	No report				
-SFIN-SFIN ODServed time difference reporting indicator	TRUE (Noto 1)				
-Cell synchronisation information reporting indicator					
CPICH Ec/NO reporting indicator					
-CPICH RSCP reporting indicator	TRUE				
-Drift Root reporting indicator	TRUE				
-Reporting quantities for monitored set cells (10.3.7.5)	INOL				
-SEN-SEN observed time difference reporting indicator	No report				
-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	TRUE				
-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				
- I riggering condition 2	Monitored set cells				
-Reporting Range Constant	3 dB				
-CHOICE III0000 Primary CPICH info (10.3.6.60)					
-Fillinary CFICITIIIIO (10.3.0.00)	10				
-W	0.dB				
-Threshold used frequency	Not Present				
-Reporting deactivation threshold	0				
-Replacement activation threshold	Not Present				
-Time to triager	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				
-CHOICE mode	FDD				
-Primary CPICH info (10.3.6.60)					
-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				
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 25.3	31, clause 10.3.7.6. According to TS 25.331,				
8.6.7.7, this IE is included in MEASUREMENT REPO	DRT 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 report	ing				

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%, with a confidence level of [FFS]% of the cases. The number of succesfull 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.

8.6.1.2 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.

Parameter	Unit	Cell 1	Cell3		
		Т0	ТО	ТО	
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				

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

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		0	Applicable for event 1C
activation threshold			
Reporting		0	Applicable for event 1A
deactivation			
threshold			
Time to Trigger	ms	0	
Filter coefficient		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	Cell 1 Cell 2					Ce	113					
		T1	T2	Т3	T4	T1	T2	Т3	T4	T1	T2	Т3	T4
CPICH_Ec/lor	dB		-1	0			-1	0		-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.()49		-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						-8	5					
	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 succesfull 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 succesfull 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 succesfull 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 succesfull 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 succesfull 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 [50] times.

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
Additional massuraments list (10.2.7.1)	Not Procent
-CHOICE Measurement type	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	initia-inequency measurement
-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)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	IRUE
-CHOICE mode	
-CPICH EC/NO reporting indicator	
-CFICH RSCF Teporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	IROL
-SEN-SEN observed time difference reporting indicator	No report
-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	TRUE
-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
	Intra-frequency measurement reporting
-Intra-fraguency measurement reporting criteria (10.3.7.30)	Cintena
-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	Not Present
-Reporting deactivation threshold	
-Replacement activation threshold	Not Present
- Time to trigger	U IIIS Not Procent
-Amount of reporting -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	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
- I me to trigger	U ms

Information Element/Group name	Value/Remark						
-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 ms						
-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 25.33	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 i							
MEASUREMENT CONTROL.							
NOTE 2: Reporting interval = 0 ms means no periodical reporti	na.						

MEASUREMENT REPORT message for Intra frequency test cases

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

8.6.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, with a confidence level of [FFS]% of the cases. 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	As specified in C.3.1 and C.2.1
		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 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	
Т3	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	0			-1	0		-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	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 succesfull 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 succesfull 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 succesfull tests is increased by one.
- 11) After 10 seconds, the UE is switched off.

12)Repeat steps 1-11 [50] times.

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 A of 34.123-1 [21], 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)	
-Fliter coefficient (10.3.7.9)	
-CHOICE mode	
-medsurement quantity (10.2.7.41)	
Peperting quantities for active set cells (10.3.7.4.1)	
-SEN-SEN observed time difference reporting indicator	No report
-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	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-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	TRUE
-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
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	Cintenta
-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
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-W	1.0
-Hysteresis	0 dB
- I hreshold used frequency	Not Present
-Reporting deactivation threshold	U Not Droggent
-Replacement activation threshold	Not Present
- Time to trigger	U ms
-Amount of reporting	not present 0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triagering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	3 dB
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-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				
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	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					
MEASUREMENT CONTROL.					
NOTE 2: Reporting interval = 0 ms means no periodical reporti	ng.				

MEASUREMENT REPORT message for Intra frequency test cases

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

8.6.1.3.5 Test requirements

For the test to pass, the total number of successful tests shall be at least 90%, with a confidence level of [FFS]% of the cases. 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	ell 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		N/A		
OCNS		-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 succesfull 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 succesfull tests is increased by one.
- 12) After 201 seconds from the beginning of T2, the UE is switched off.
- 13)Repeat steps 1-12 [50] times.

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)	
-Fliter coefficient (10.3.7.9)	
-CHOICE mode	
-medsurement quantity (10.2.7.41)	
Peperting quantities for active set cells (10.3.7.4.1)	
-SEN-SEN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-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	TRUE
-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
	criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	cinena
-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	0 dB
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-W	1.0
-Hysteresis	0 dB
- I hreshold used frequency	Not Present
-Reporting deactivation threshold	
-Replacement activation threshold	NOT Present
- Time to trigger	120 ms
-Amount of reporting -Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1B
-Triagering condition 1	Active set cells and monitored set cells
-Reporting Range Constant	0 dB
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE mode	FDD
-Primary CPICH info (10.3.6.60)	
-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	120 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 report	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%, with a confidence level of [FFS]% of the cases. The number of succesfull 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 delay uncertainty is twice 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

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

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

$$T_{\text{measurement inter}} = Max \left\{ T_{\text{Measurement_Period Inter}}, T_{\text{basic measurement FDD inter}} \cdot \frac{T_{\text{Measurement_Period Inter}}}{T_{\text{Inter}}} \cdot N_{Freq} \right\} ms$$

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 $X_{\text{basic measurement FDD inter}}$ 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 $T_{\text{Measurement_Inter.}}$

 $X_{\text{basic measurement FDDinter}} = 6$

 $T_{Measurement_Period Inter} = 480$ ms. The period used for calculating the measurement period $T_{measurement_inter}$ for inter frequency 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

Parameter	Unit	Cell 1 Cell 2		Cell3
		ТО	Т0	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			

Table 8.6.2.1.1: Cell specific initial test parameters for Correct reporting of neighbours in AWGN propagation condition

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	As specified in C.3.1 and C.2.1
		Channel 12.2 kbps	
Power Control		On	
Compressed mode		C.5.2 set 1	As specified in C.5.
Active cell		Cell 1	
Threshold non used	dB	-18	Absolute Ec/I0 threshold for event 2C
frequency			
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		0	Applicable for event 1A
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1	Measurement control information is
		16 on channel 2	sent before the compressed mode
			pattern starts.
11	S	10	
T2	S	5	

Parameter	Unit	Ce	ell 1	Cel	12	Ce	II 3
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Cha	nnel 1	Chan	nel 1	Char	nel 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		-1.049		-0.941		-0.941	
\hat{I}_{or}/I_{oc}	dB	0	4.39	-Infinity	2.39	-1.8	-1.8
I _{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/lo	dB	-13	-13	-Infinity	-15	-14	-14
Propagation Condition	AWGN						

Table 8.6.2.1.3: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

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 succesfull 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 1036.2 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.
- 12) After 5 seconds from the beginning of T2, the UE is switched off.
- 13)Repeat steps 1-12 [50] times.

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	Not Propert
-CN Information Info	
	Not Procent
PB information elements	Not resent
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Liplink radio resources	
-Maximum allowed UL_TX power	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	Not present
-TGSN	4
-IGL1	
-1GL2	Not Present
-IGD	0
	3 Not Propert
	Mode 0
-ITP	Mode 0
-CHOICE LIL/DL mode	III and DI
-Downlink compressed mode method	SE/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
-Downlink information per radio link list	Not Present

MEASUREMENT CONTROL message (inter frequency):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	Value/Remark
IIE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	Not resent
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
Measurement Reporting Mode (10.3.7.40)	Setup
-Measurement Report Transfer Mode	AMRIC
-Periodical Reporting / Event Triager 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
-Inter-frequency measurement objects list (10.3.7.13)	
- CHOICE Inter-frequency cell removal	Not Present
- New Inter frequency cells	Not resent
- Inter frequency cell id	0
- Frequency certa	0
- CHOICE mode	FDD
	Not Present
- LIARECN downlink(Nd)	Same frequency as "Channel2" in Table
	86213
- Cell info	0.0.2.1.0
- Cell individual offset	Not Present
- Reference time difference to cell	Not Present
- Read SEN 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 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)	
-SFN-SFN observed time difference reporting indicator	No report
-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	TRUE
-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

Information Element/Group name	Value/Remark			
-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 CONTROL message (intra frequency):

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				
-Measurement quantity	CPICH_EC/NU			
-intra-irequency reporting quantity (10.3.7.41)				
-Reporting quantities for active set cells (10.3.7.5)	No report			
-Cell synchronisation information reporting indicator	TRUE (Note 1)			
-Cell Identity reporting indicator				
-CPICH Ec/N0 reporting indicator	TRUE			
-CPICH RSCP reporting indicator	TRUE			
-Pathloss reporting indicator	TRUE			
-Reporting quantities for monitored set cells (10.3.7.5)				
-SFN-SFN observed time difference reporting indicator	No report			
-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	TRUE			
-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			
Intro frequency measurement reporting criteria (10.2.7.20)	criteria			
-Intra-frequency measurement reporting chiefla (10.3.7.39)	1			
-Falameters required for each event	Fvent 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)				
-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 cell status	Not Present			
Physical channel information elements				
-DPCH compressed mode status info (10.3.6.34) Not Present				
Note 1: The SEN-CEN observed time difference is calculated	from the OFF and Tm parameters contained			
in the IF "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 MFASUREMENT REPO	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 reporting	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%, with a confidence level of [FFS]% of the cases. 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.

8.7.1.2 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 $|_{dBm} \ge -114 \text{ dBm}$.

-
$$\left| CPICH _RSCP1 \right|_{in \, dBm} - CPICH _RSCP2 \right|_{in \, dBm} \le 20 dB$$
.

- | Channel 1_Io|_{dBm/3.84 MHz} -Channel 2_Io|_{dBm/3.84 MHz} | \leq 20 dB.

$$- \left. \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in\ dB} - \left(\frac{CPICH - E_c}{I_{or}} \right)_{in\ dB} \le 20 dB \, .$$

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

		Accuracy [dB]			
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]	
CPICH_RSCP	dBm	±6	±6	-9450	

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-[14 slots is FFS] 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.

Baramotor	Paramotor Unit		Test 1		Test 2	
Falailletei	Onit	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	
CPICH_Ec/lor	dB	-1	0	-*	10	
PCCPCH_Ec/lor	dB	-1	2	-*	12	
SCH_Ec/lor	dB	-1	2	-*	12	
PICH_Ec/lor	dB	-1	5	-*	15	
DPCH_Ec/lor	dB	-15	-	-15	-	
OCNS_Ec/lor	dB	-1.11	-0.94	-1.11	-0.94	
loc	dBm/ 3.84 MHz	-60.00	-60.00	-84.00	-94.46	
Îor/loc	dB	9.54	9.54	0	-9.54	
CPICH RSCP, Note 1	dBm	-60.46	-60.46	-94.0	-114.0	
lo, Note 1	dBm/3.84 MHz	-50.00 -50.00 -81.0 -94.0			-94.0	
Propagation condition	-	- 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.						

Table 8.7.1.2.1.2: CPICH RSCP Inter frequency tests parameters

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 8.7.1.2.1.2.

8.7.1.2.1.4.2 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 for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.
- 4) UE shall transmit periodically MEASUREMENT REPORT messages.
- 5) 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.
- 6) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 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 8.7.1.2.1.2 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 5) and 6) above are repeated.
- 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 (step 1):

Message Type Literror UE Information Elements -RRC transaction identifier -Integrity check info -Integrity protection mode info -Chiptering mode info -Activation time 0 New U-RNTI -New U-RNTI -New U-RNTI -New C-RNTI -New C-RNTI -Chiformation elements -Chiformation elements -Downlink radio resources -CHOICE channel requirement -CHOICE channel requirement -Downlink ridormation common for all radio links -Downlink information common for all radio -Downlink information common for all radio -Downlink information common for all radio -Downlink information common for all radio -Transmission gap pattern sequence -TGPSI -TGPSI -TGPSI -TGPNC -TGIL -TGPNC -TGIL -TGPNC -TGPL1 -TGPNC -TGPL2 -Net Present -GGN -GHOICE UL/DL mode -Downlink informettop -TGPL2 -Net Present -GGN -GHOICE UL/DL mode -Downlink informettop -DeltaSIR1 -DeltaSIR1 -DeltaSIR2 -Net Present -TGPNC -TGPL1 -DeltaSIR2 -Net Present -TGPNC -TGPL1 -DeltaSIR2 -Net Present -DeltaSIR1 -DeltaSIR2 -Net Present -TGPNC -T	Information Element	Value/Remark
UE Information Elements 0 -RRC transaction identifier 0 -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 Not Present -RC State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present -CN Information elements - -URAI dentity Not Present -ZN Information elements - -URAI dentity Not Present -Downlink counter synchronisation info Not Present -Brick Information elements - -Uplink radio resources - -CHOICE channel requirement Not Present -CHOICE channel requirement Not Present -Downlink information common for all radio links - -Downlink information common for all radio links - -Downlink information common for all radio links - -Downlink information sequence - -TGPS Status Flag 1 -TGPS Status Flag 1 -TGPL1 3 -TGPL2 Not Present -PDCH compressed mode method SF/2	Message Type	Value/KelliarK
UE Information Elements 0 -RRC transaction identifier 0 -Integrity protection mode info Not Present -Ciphering mode info Not Present -Activation time Not Present -Activation time Not Present -Activation time Not Present -New U-RNTI Not Present -New U-RNTI Not Present -RC State Indicator CELL_DCH -UTRAN motion Elements - -CN Information Elements - -CN Information elements - -Downlink counter synchronisation info Not Present -UPIA information elements - -Frequency info Not Present Downlink radio resources - -CHOICE mode FDD -Downlink radio resources - -CHOICE mode FDD -Downlink radio resources - -CHOICE mode FDD -Downlink radio papattern sequence - -TGPS1 1 -Tansmission gap pattern sequence - -TGPS1 7 -TGL2 Not Present		
-RRC transaction identifier 0 -Integrity protection mode info Not Present -Ciphering mode info Not Present -Activation time Not Present -New U-RNTI 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 - -URA identity Not Present -Binformation elements - -URA identity Not Present -Binformation elements - -URA identity Not Present -Downlink counter synchronisation info Not Present -Ph/CH information elements - -Activate requirement Not Present -Downlink information common for all radio links - -Downlink information common for all RL - -DOWNLINK PDCH information - -TGPSI 1 -TGPSI 1 <tr< td=""><td>UE Information Elements</td><td></td></tr<>	UE Information Elements	
-Integriny credet into Not Present -Ciphering mode info Not Present -Activation time Not Present -New C-RNTI Not Present -New C-RNTI Not Present -RCS State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present -CN Information Elements Not Present -CN Information elements Not Present -URA identity Not Present Bi Information elements Not Present -Downlink counter synchronisation info Not Present PhyCH information elements - -Prequency info Not Present UPlink radio resources Not Present -Maxium allowed UL TX power Not Present -CHOICE mode FDD -Downlink radio resources FDD -CHOICE mode FDD -Downlink DPCH Information Not Present -Transmission gap pattern sequence 1 -TGPS1 7 -TGRN 4 -TGRN 4 -TGPL2 Not Present -TGPL2 Not Present -Downlink compressed mode info - -Transmission gap pattern sequence 1 -TGPS1 7 -TGRN <	-RRC transaction identifier	0 Nat Brazzat
Integriny protection mode info Not Present - Ciphering mode info Not Present - Activation time Not Present - New U-RNTI Not Present - New U-RNTI Not Present - RC State Indicator CELL_DCH - UTRAN DRX cycle length coefficient Not Present CN Information Elements - - Chi 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 Not Present - CHOICE forehannel reguimement Not Present Downlink information common for all radio links Not Present - Downlink information common for all radio links Not Present - Downlink information common for all RL - - OFCH compressed mode info - - Transmission gap pattern sequence - - TGPR Infinity - TGPRC Infinity - TGIL2 Not Present - TGPR Not Present - TGPL1 3 - TGPL2 Not Present - TGPL1 3 -	-Integrity check into	Not Present
Clipienta funde mino Not Present -Activation time Not Present -New C-RNTI Not Present -RCS State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present CN Information Elements Not Present -UTRAN mobility information elements Not Present -URA identity Not Present RB information elements - -Downlink counter synchronisation info Not Present PhyCH information elements - -Frequency info Not Present Uplink radio resources - -CHOICE channel requirement Not Present Downlink radio resources - -CHOICE mode FDD -Downlink PDSCH information Not Present -Downlink promomo for all radio links Not Present -OHOCE mode FDD -Transmission gap pattern sequence - -TGPS I 1 -TGPRC Infinitiy -TGPL1 7 -TGL2 Not Present -TGP 0 <td>-Integrity protection mode into</td> <td>Not Present</td>	-Integrity protection mode into	Not Present
Production lattice Not Present New U-RNTI Not Present -New U-RNTI Not Present -RC State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present CN Information Elements - -UTR AIM mobility information elements Not Present UR identity Not Present RB information elements - -Downlink counter synchronisation info Not Present PhyQH information elements - -Frequency info Not Present Uplink radio resources Not Present -Maximum allowed UL TX power Not Present -CHOICE mode FDD -Downlink radio resources Not Present -OHOICE mode FDD -DPCH corpressed mode info - -Transmission gap pattern sequence - -TGCFN - -TGRPC - -TGRPC Not Present -TGPL1 7 -TGPL1 7 -TGPL1 3 -TGPL1 3		Not Present
New C-RNTI Not Tresent -RRC State Indicator Ot Present -UTRAN DRX cycle length coefficient Not Present CN Information Elements Not Present -ON Information elements Not Present -URAN Draition elements Not Present -URAN mobility information elements Not Present -URAN mobility information elements Not Present -Downlink counter synchronisation info Not Present PhyCH information elements		Not Present
-RRC State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present -CN Information Elements	-New C-RNTI	Not Present
-UTRAN DRX cycle length coefficient Not Present CN Information Elements	-RRC State Indicator	CELL DCH
CN Information Elements Not Present -CN Information info Not Present UTRAN mobility information elements	-UTRAN DRX cycle length coefficient	Not Present
-CN Information info Not Present UTRAN mobility information elements	CN Information Elements	
UTRAN mobility information elements -URA identity Not Present -URA identity Not Present -Devmlink counter synchronisation info Not Present PhyCH information elements	-CN Information info	Not Present
-URA identity Not Present RB information elements - -Downlink counter synchronisation info Not Present PhyCH information elements - -Frequency info Uplink radio resources -Maximum allowed UL TX power Not Present -CHOICE channel requirement Not Present Downlink radio resources - -CHOICE mode FDD -Downlink Information common for all radio links Not Present -Downlink Information common for all RL Not Present -CHOICE mode FDD -Downlink Information gap pattern sequence 1 -TGPSI 1 -Transmission gap pattern sequence 1 -TGERC Infinity -TGERC Infinity -TGL1 7 -TGL2 Not Present -TGPL2 Not Present -RPP Mode 0 -GHOICE UL/DL mode UL and DL -Downlink frame type 3 -Downlink compressed mode method SF/2 -Downlink frame type B -Downlink compressed mode method SF/2	UTRAN mobility information elements	
RB information elements Not Present -Downlink counter synchronisation info Not Present PhyCH information elements Not Present -HollCE channel requirement Not Present Downlink radio resources Not Present -CHOICE channel requirement Not Present Downlink PDSCH information FDD -Downlink Information common for all radio links Not Present -Owowlink Information common for all radio links Not Present -Downlink PDSCH information Not Present -Downlink roformation common for all radio links Not Present -Downlink Information common for all RL Not Present -TGPC FDD -TGPS Status Flag Activate -TGCFN Activate -TGBRC Infinity -TGL1 7 -TGL2 Not Present -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -TGPL2 Not Present -TGPL3 3.0 -CHOICE UL/DL mode SF/2 -Downlink compressed mode method SF/2 -Downlink comp	-URA identity	Not Present
-Downlink counter synchronisation info Not Present PhyCH information elements -Frequency info Not Present -Maximum allowed UL TX power Not Present Not Present -CHOICE channel requirement Not Present Not Present Downlink radio resources -CHOICE mode FDD -Downlink information common for all radio links Not Present -Downlink DPCH info common for all radio links Not Present -Downlink DPCH information Not Present -Downlink DPCH information gap pattern sequence 1 -TGPS Status Flag 1 -TGPRC Infinity -TGSN 4 -TGL1 7 -TGL2 Not Present -TGPL2 Not Present -TGPL2 Not Present -TGPL2 Not Present -TGPL2 Not Present -TGPL3 3 -TGPL4 3 -TGPL2 Not Present -Downlink compressed mode method SF/2 -Downlink compressed mode method SF/2 -Downlink compr	RB information elements	
PhyCH information elements Not Present -Frequency info Not Present Uplink radio resources Not Present -CHOICE channel requirement Not Present Downlink radio resources FDD -Obwnlink DDSCH information Not Present -Downlink information common for all radio links FDD -Downlink information common for all radio links Not Present -Downlink information common for all radio links Not Present -Downlink processed mode info FDD -Transmission gap pattern sequence 1 -TGCFN (Current CFN + (256 – TTI/10msec))mod 256 -Transmission gap pattern sequence FDD measurement onfiguration parameters FDD measurement -TGFRC TGNP -TGL1 7 -TGL2 Not Present -TGPL1 3 -TGPL1 3 -TGPL2 Not Present -Pownlink compressed mode method SF/2 -Downlink compressed mode method SF/2 -DeltaSIRafter1 3.0 -DeltaSIRafter1 3.0 -DeltaSIRafter2 Not Present	-Downlink counter synchronisation info	Not Present
-Frequency info Not Present Uplink radio resources Not Present -CHOICE channel requirement Not Present Downlink radio resources FDD -CHOICE mode FDD -Downlink PDCH information Not Present -Downlink pDCH information common for all radio links Not Present -Downlink DPCH info common for all RL Not Present -Transmission gap pattern sequence 1 -TGCFN 1 -TGRPC 1 -TGRPC FDD measurement -TGRPC FDD measurement -TGL1 7 -TGL2 Not Present -TGPL2 Not Present -TPP Mode 0 -TTP Mode 0 -TTP Mode 0 -TGPL2 Not Present -Downlink compressed mode method SF/2 -Downlink compressed mode method SF/2 -Downlink former type B -DetaSIRafter1 3.0 -DetaSIRafter1 3.0 -DetaSIRafter2 Not Present -Ni dentify abort Not Present	PhyCH information elements	
Uplink radio resourcesNot Present-Maximum allowed UL TX powerNot Present-CHOICE channel requirementNot PresentDownlink radio resourcesFDD-Okumlink PDSCH information common for all radio linksNot Present-Downlink information common for all RLNot Present-CHOICE modeFDD-Downlink pPCH info common for all RLNot Present-CHOICE modeFDD-Tarasmission gap pattern sequence1-TGPSI1-TGCFNActivate-TGRRCInfinity-TGRRCInfinity-TGL17-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-ITPMode 0-Uplink compressed mode methodSF/2-Downlink trame typeB-DetaSIR23.0-DetaSIR2Not Present-DetaSIR2Not Present-TREV3.0-DetaSIR2Not Present-DetaSIR2Not Present-DetaSIR4fer13.0-DetaSIR4fer2Not Present-N Identify abortNot Present-TX Diversity ModeNot Present-TX Diversity ModeNot Present	-Frequency info	Not Present
-Maximum allowed UL TX power Not Present - CHOICE channel requirement Not Present Downlink radio resources FDD -Ownlink information common for all radio links Not Present -Downlink information common for all RL Not Present -Ownlink DDCH info common for all RL Not Present -Ownlink DPCH info common for all RL Not Present -Ownlink DPCH info common for all RL Not Present -OHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence 1 -TGCFN Activate -TGRPC Infinity -TGSN 4 -TGL1 7 -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -TFP Mode 0 -TFP Mode 0 -TFP Mode 0 -TGPL2 Not Present -Downlink frame type B -DeltaSIR1 3.0 -DeltaSIR2 Not Present -DeltaSIR4fter1 3.0 -DeltaSIR4fter1 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present	Uplink radio resources	
- CHOICE channel requirement Not Present Downlink radio resources -CHOICE mode -Downlink information common for all radio links Not Present -Downlink DPCH info common for all RL Not Present -CHOICE mode FDD -Downlink DPCH info common for all RL Not Present -CHOICE mode -Downlink information common for all RL -CHOICE mode -Downlink information common for all RL -CHOICE mode -TGPSI -TGPSI 1 -TGFS Status Flag 1 -TGGRC Current CFN + (256 – TTI/10msec))mod 256 -Transmission gap pattern sequence Configuration parameters -TGBRC FDD measurement -TGPRC Infinity -TGL2 Not Present -TGPL2 Not Present -TGPL2 Not Present -RPP Mode 0 -ITP Mode 0 -Uplink compressed mode method SF/2 -DeltaSIRAfter1 3.0 -DeltaSIRAfter1 3.0 -DeltaSIRAfter1 3.0 -DeltaSIRAfter12 Not Present -Not Present <t< td=""><td>-Maximum allowed UL TX power</td><td>Not Present</td></t<>	-Maximum allowed UL TX power	Not Present
Downlink radio resources-CHOICE mode-Downlink information common for all radio links-Downlink DPCH info common for all radio links-Downlink DPCH info common for all RL-CHOICE mode-DPCH compressed mode info-Transmission gap pattern sequence-TGPS Status Flag-TGCFN-TGCFN-TGRPC-TGRPC-TGL2-TGL2-TGPL2-RPP-CHOICE UL/DL mode-Downlink compressed mode method-Downlink frame type-DeltaSIR1-DeltaSIR2-DeltaSIR2-DeltaSIR2-DeltaSIR2-DeltaSIR2-DeltaSIR2-DeltaSIR2-DeltaSIR4fer2-N Identify abort-T Reconfirm abort-T Tope abort-T Top abort-T Reconfirm abort-T Top abort-T Reconfirm abort-T Top abort-T Reconfirm abort-T Top abort-T Top abort-T Top abort-T Top abort-T Reconfirm abort-T Top abort<	- CHOICE channel requirement	Not Present
UolUCE mode FDD -Downlink PDSCH information Not Present -Downlink PDSCH information common for all radio links Not Present -Downlink DDSCH information common for all RL Not Present -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence 1 -TGPSI 1 -TGPS Status Flag 1 -TGCFN (Current CFN + (256 – TTI/10msec))mod 256 -Transmission gap pattern sequence Current CFN + (256 – TTI/10msec))mod 256 -TGRPC Infinity -TGSN 4 -TGL1 7 -TGL2 Not Present -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -TTP Mode 0 -CHOICE UL/DL mode UL and DL -Downlink frame type B -DeitaSIR1 3.0 -DeitaSIR2 Not Present -DeitaSIR2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort </td <td>Downlink radio resources</td> <td>FRR</td>	Downlink radio resources	FRR
-Downlink PDCH information Not Present -Downlink information common for all radio links Not Present -Downlink information common for all RL Not Present -CHOICE mode -DDCH compressed mode info -Transmission gap pattern sequence 1 -TGPSI 1 -TGPS Status Flag 1 -TGCFN (Current CFN + (256 – TTI/10msec))mod 256 -Transmission gap pattern sequence formation configuration parameters -TGMP -TGBRC Infinity -TGL2 Not Present -TGD 0 -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -Uplink compressed mode method SF/2 -Downlink frame type 3.0 -DeitaSIR1 3.0 -DeitaSIR2fter1 3.0 -DeitaSIRafter1 3.0 -DeitaSIRafter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort Not Present	-CHUICE Mode	FDD Not Present
-Downlink DPCH info common for all RL -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI -TGPS Status Flag -TGCFN -Transmission gap pattern sequence configuration parameters -TGBRC -TGL1 -TGPL2 -TGPL1 -TGPL2 -TGPL2 -RPP -TGPL3 -TGPL4 -TGPL5 -TGPL5 -TGPL2 -RPP -Downlink compressed mode method -Downlink compressed mode method -DeltaSIR1 -DeltaSIR1 -DeltaSIR1fer1 -DeltaSIR2 -DeltaSIR2 -DeltaSIR2 -DeltaSIR2 -DeltaSIR2 -DeltaSIR2 -DeltaSIR2 -DeltaSIR2 -DeltaSIR2 -TR econfirm abort -T Reconfirm abort -T Reconfirm abort	-Downlink PDSCH information	NOLFIESEIIL
-CHOICE mode FDD -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI 1 -TGPS Status Flag 1 -TGCFN (Current CFN + (256 - TTI/10msec))mod 256 -Transmission gap pattern sequence (Current CFN + (256 - TTI/10msec))mod 256 -TGMP FDD measurement -TGPRC Infinity -TGL1 7 -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -ITP Mode 0 -U/DICE UL/DL mode UL and DL -Downlink compressed mode method SF/2 -Downlink frame type B -DeltaSIR1 3.0 -DeltaSIR1 3.0 -DeltaSIR2 Not Present -DeltaSIR4fer1 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort Not Present	-Downlink Information common for all RI	Not Present
DPCH compressed mode info-Transmission gap pattern sequence-TGPSI-TGPSI-TGPS-TGPS-TGFN-TGCFN-TGSN-TGL2-TGPL1-TGPL1-TGPL2-RPP-ITP-DOUTE UL/DL mode-Downlink frame type-Downlink frame type-DeltaSIR1-DeltaSIR1-DeltaSIR1-DeltaSIR2-Not Present-Downlink frame type-DeltaSIR2-DeltaSIR4<	-CHOICE mode	FDD
-Transmission gap pattern sequence-TGPSI-TGPS Status Flag-TGCFN-Transmission gap pattern sequenceconfiguration parameters-TGMP-TGSN-TGL1-TGPL2-TGPL2-RPP-TGPL2-RPP-TGPL2-Downlink frame type-DeltaSIR1-DeltaSIR1-DeltaSIR2-DeltaSIR1-DeltaSIR2-N Identify abort-T Reconfirm abort-TGP-TGPL2-TTP-TGP-TGPL3-TGPL3-TGPL4-TGPL2-TGP-TGP-TGP-TGP-TGP-TGPL2-TTP-TTTP-TTTP-TTTP <td>-DPCH compressed mode info</td> <td></td>	-DPCH compressed mode info	
TGPSI1-TGPS Status Flag1-TGCFNActivate-TGCFN(Current CFN + (256 - TTI/10msec))mod 256-Transmission gap pattern sequence configuration parametersFDD measurement-TGMPFDD measurement-TGPRCInfinity-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-TTPWode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR4ter13.0-DeltaSIR4ter2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present	-Transmission gap pattern sequence	
-TGPS Status FlagActivate (Current CFN + (256 - TTI/10msec))mod 256-Transmission gap pattern sequence configuration parametersFDD measurement (Current CFN + (256 - TTI/10msec))mod 256-TGMP-TGMP-TGPRCInfinity-TGSN4-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR2Not Present-T Reconfirm abortNot Present-T Reconfirm abortNot Present-T Reconfirm abortNot Present-T ReperistNot Present-T Reconfirm abortNot Present-T Reconfirm abortNot Present-T Reconfirm abortNot Present-T X Diversity ModeNot Present	-TGPSI	1
-TGCFN(Current CFN + (256 - TTI/10msec))mod 256-Transmission gap pattern sequence configuration parametersFDD measurement-TGMPInfinity-TGPRCInfinity-TGL17-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR2Not Present-DeltaSIR2Not Present-T Reconfirm abortNot Present-T X Diversity ModeNot Present	-TGPS Status Flag	Activate
-Transmission gap pattern sequence configuration parametersFDD measurement Infinity-TGMPFDD measurement-TGPRCInfinity-TGSN4-TGL17-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-T Reconfirm abortNot Present-T Reconfirm abortNot Present-T Keconfirm abortNot Present	-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence configuration parametersFDD measurement-TGMPFDD measurement-TGPRCInfinity-TGSN4-TGL17-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present		
configuration parametersFDD measurement-TGMPInfinity-TGPRCInfinity-TGSN4-TGL17-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR4fter13.0-DeltaSIR4fter2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-Transmission gap pattern sequence	
-TGMPFDD measurement-TGPRCInfinity-TGSN4-TGL17-TGL2Not Present-TGD0-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR13.0-DeltaSIR2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	configuration parameters	
-TGPRC Infinity -TGSN 4 -TGL1 7 -TGL2 Not Present -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -ITP Mode 0 -CHOICE UL/DL mode UL and DL -Downlink compressed mode method SF/2 -Downlink frame type B -DeltaSIR1 3.0 -DeltaSIR2 Not Present -DeltaSIR4fter1 3.0 -DeltaSIR4fter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort Not Present	-TGMP	FDD measurement
-1GSN4-TGL17-TGL2Not Present-TGD0-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-IGPRC	Infinity
-1GL17-TGL2Not Present-TGD0-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR4ter13.0-DeltaSIR4ter2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-IGSN	4
-TGL2Not Present-TGD0-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-IGLI TCL2	/ Not Present
-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 -DeltaSIR2 Not Present -DeltaSIRafter1 3.0 -DeltaSIRafter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -TX Diversity Mode Not Present		
ITGPL1O-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIRafter2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-TGPL1	3
-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 -DeltaSIR2 Not Present -DeltaSIR4fter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -TX Diversity Mode Not Present	-TGPL2	Not Present
-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 -DeltaSIR2 Not Present -DeltaSIR2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -TX Diversity Mode Not Present	-RPP	Mode 0
-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIRafter13.0-DeltaSIR2Not Present-DeltaSIRafter2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-ITP	Mode 0
-Downlink compressed mode methodSF/2-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIRafter13.0-DeltaSIR2Not Present-DeltaSIRafter2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-CHOICE UL/DL mode	UL and DL
-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	-Downlink 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	-Uplink compressed mode method	SF/2
-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	-Downlink frame type	В
-DeltaSIRatter1 3.0 -DeltaSIR2 Not Present -DeltaSIRafter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -TX Diversity Mode Not Present	-DeltaSIR1	3.0
-DeltaSIR2 Not Present -DeltaSIRafter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -TX Diversity Mode Not Present	-DeltaSIRafter1	3.0
-DeitaSIKatter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -TX Diversity Mode Not Present		Not Present
-T Reconfirm abort Not Present -TX Diversity Mode Not Present	-DeltaSIKatter2	Not Present
-TX Diversity Mode Not Present	-in identify abort	Not Present
	TX Diversity Mede	Not Present
-SSDT information Not Present		Not Present
-Oob Fillion Not Present	-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	-Downlink information per radio link list	Not Present

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	Valuo/Komaik
UE information elements	
-RRC transaction identifier	U Not Brocont
-Integrity check into	Not Present
Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	Wouldy
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	i choaloal toporting
-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 	
-SFN-SFN observed time difference reporting	
indicator	No report
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	
-Pathloss reporting indicator	IRUE
-Reporting quantities for monitored set cells	Neverent
-SFIN-SFIN observed time difference reporting	по героп
Coll synchronization information reporting	
-Cell synchronisation information reporting	FALSE
	TRUE
	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-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

Second MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	
LIE information alamanta	
DE Information elements	0
	U Not Brogont
Moscurement Information elements	Not Flesent
Moosurement Identity	0
Monsurement Command	Sotup
-Measurement Reporting Mode	Setup
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	r enouical reporting
	Not Present
	Inter-frequency measurement
-Inter-frequency measurement object list	inter nequency 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	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	
-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	
-SFN-SFN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	IRUE
-CPICH RSCP reporting indicator	
-Pathioss reporting indicator	IRUE
-Reporting cell status	
	Report all active set cells + cells within
Maximum averbar of reported calls	Monitored set on used frequency
-waximum number or reported cells	Not Procent
-Inter-frequency set undate	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
	11011100011

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

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2.1.2.

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.

8.7.2.2.1 Absolute accuracy requirement Void

[TBD]

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 $|_{dBm} \ge -114 \text{ dBm}.$

-
$$|CPICH _RSCP1|_{in \, dBm} - CPICH _RSCP2|_{in \, dBm}| \le 20 \, dB$$
.

- | Channel 1_Io|_{dBm/3.84 MHz} -Channel 2_Io|_{dBm/3.84 MHz} | \leq 20 dB.

$$- \left. \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}} \right)_{in\ dB} \le 20 dB \, .$$

Table 8.7.2.2.2.1: CPICH_Ec/lo Inter frequency relative accuracy

		Accuracy [dB	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dB	\pm 1.5 for -14 \leq CPICH Ec/lo		-9450
CPICH_Ec/lo		± 2 for -16 \leq CPICH Ec/lo < -14	±3	
		± 3 for -20 \leq 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

8.7.2.2.2.4.1 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-[14 slots is FFS] 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.

Deremeter	l Init	Test 1		Test 2		Test 3	
Parameter	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						onannor 1	onannoi 2
CPICH_Ec/lor	dB	-1	10	-1	10	-1	0
PCCPCH_Ec/lor	dB	-1	12	-1	12	-1	2
SCH_Ec/lor	dB	-1	12	-1	12	-1	2
PICH_Ec/lor	dB	-1	15	-1	15	-1	15
DPCH_Ec/lor	dB	-15	-	-6	-	-6	-
OCNS_Ec/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
loc	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
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
lo, Note 1	dBm/3.84 MHz	-50	-50	-86	-86	-94	-94
Propagation condition	-	AWGN 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.							

Table 8.7.2.2.2.2: CPICH Ec/lo Inter frequency tests parameters

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 8.7.2.2.2.2.

8.7.2.2.2.4.2 Procedure

- 1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 3) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.
- 4) UE shall transmit periodically MEASUREMENT REPORT messages.
- 5) 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.
- 6) The result of step 5) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 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 8.7.2.2.2.2 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 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 8.7.2.2.2.2 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, steps 5) and 6) above are repeated.
- After 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 1):

Information Element	Value/Remark
	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
-IGL2	Not Present
-IGPL1	
-IGPL2	Not Present Made 0
	Mode U
-ITP CUCIOE III /DL mada	
-CHOICE UL/DL mode	OL and DL
-Downlink compressed mode method	
-Oplink compressed mode method	SF/2
-DellaSIR I DoltaSIPattor1	2.0
	Not Present
-DeltaSIRaftar2	Not Present
-DellaSIRallel2	Not Present
T Reconfirm abort	Not Present
TX Diversity Mede	Not Present
-IA Diversity Wode	Not Present
	Not Present
-Devalue DF OF OF OF Set Value	Not Present

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	Valuo/Komaik
UE information elements	
-RRC transaction identifier	U Not Drocont
-Integrity check into	Not Present
Measurement Identity	1
Moasurement Command	Modify
-Measurement Reporting Mode	Wodity
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	renotical reporting
-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	
-SFN-SFN observed time difference reporting	
indicator	No report
 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	IRUE
-Reporting quantities for monitored set cells	No. non-out
-SFIN-SFIN observed time difference reporting	No report
Indicator	
-Cell synchronisation information reporting	FALSE
Coll Identity reporting indicator	TDUE
-CPICH Ec/NO reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-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

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
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setun
-Measurement Reporting Mode	Cottop
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	i onodiodi ioporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	inter nequency medearement
-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	
-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	
-SEN-SEN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-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
-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

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.

8.7.2.2.2.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.2.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) 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.

		Accuracy [dB]		Conditions
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
		-2.71.5 for -14 ≤ CPICH Ec/lo -3.22 for -16 ≤ CPICH Ec/lo < -14 -4.23 for -20 ≤ CPICH Ec/lo < -16	-4.23	-9487
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	-8750

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

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.

8.7.3 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

		Accura	acy [dB]	Conditions
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
LITEA Corrier DSSI	dBm	± 4	± 7	-9470
	dBm	± 6	± 9	-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-[14 slots is FFS] 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.

Deremeter	l Init	Test 1		Test 2		Test 3	
Parameter	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		onaniori	ename 2	onamori	enamer 2	onaniori	onanio 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	15	-1	5
DPCH_Ec/lor	dB	-15	-	-6	-	-6	-
OCNS_Ec/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
loc	dBm/ 3.84 MHz	-52.22	-52.22	-70.27	-70.27	-94.46	-94.46
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
lo, Note 1	dBm/3.84 MHz	-50	-50	-69	-69	-94	-94
Propagation condition	-	- AWGN 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.							

Table 8.7.3.1.2: UTRA Carrier RSSI Inter frequency test parameters

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.

8.7.3.1.4.2 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 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.
- 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 8.7.3.1.2 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 5) 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 5) above is 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 default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Message Type Literror UE Information Elements -RRC transaction identifier -Integrity check info -Integrity protection mode info -Chiptering mode info -Activation time 0 New U-RNTI -New U-RNTI -New U-RNTI -New C-RNTI -New C-RNTI -Chiformation elements -Chiformation elements -Downlink radio resources -CHOICE channel requirement -CHOICE channel requirement -Downlink ridormation common for all radio links -Downlink information common for all radio -Downlink information common for all radio -Downlink information common for all radio -Downlink information common for all radio -Transmission gap pattern sequence -TGPSI -TGPSI -TGPSI -TGPNC -TGIL -TGPNC -TGIL -TGPNC -TGPL1 -TGPNC -TGPL2 -Net Present -GGN -GHOICE UL/DL mode -Downlink informettop -TGPL2 -Net Present -GGN -GHOICE UL/DL mode -Downlink informettop -DeltaSIR1 -DeltaSIR1 -DeltaSIR2 -Net Present -TGPNC -TGPL1 -DeltaSIR2 -Net Present -TGPNC -TGPL1 -DeltaSIR2 -Net Present -DeltaSIR1 -DeltaSIR2 -Net Present -TGPNC -T	Information Element	Value/Remark
UE Information Elements 0 -RRC transaction identifier 0 -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 Not Present -RC State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present -CN Information elements - -UR Aid DRX cycle length coefficient Not Present -CN Information info Not Present PhyCH information elements - -UBRit dentity Not Present -Burnink counter synchronisation info Not Present -Downlink catio resources - -CHOICE channel requirement Not Present -Downlink information common for all radio links - -Downlink information common for all radio links - -Downlink information common for all radio links - -Downlink information sequence - -TGPS Status Flag 1 -TGPS Status Flag 1 -TGPL1 7 -TGL1 7 -TGPL2 Not Present -PDPCH compressed mode method SF/2	Message Type	Value/KelliarK
UE Information Elements 0 -RRC transaction identifier 0 -Integrity protection mode info Not Present -Ciphering mode info Not Present -Activation time Not Present -Activation time Not Present -Activation time Not Present -New U-RNTI Not Present -New U-RNTI Not Present -RC State Indicator CELL_DCH -UTRAN motion Elements - -CN Information Elements - -CN Information elements - -Downlink counter synchronisation info Not Present -UPIA information elements - -Frequency info Not Present Downlink radio resources - -CHOICE mode FDD -Downlink radio resources - -CHOICE mode FDD -Downlink radio resources - -CHOICE mode FDD -Downlink radio papattern sequence - -TGPS1 1 -Tansmission gap pattern sequence - -TGPS1 7 -TGL2 Not Present		
-RRC transaction identifier 0 -Integrity protection mode info Not Present -Ciphering mode info Not Present -Activation time Not Present -New U-RNTI 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 - -URA identity Not Present -Binformation elements - -URA identity Not Present -Binformation elements - -URA identity Not Present -Downlink counter synchronisation info Not Present -Ph/CH information elements - -Activate requirement Not Present -Downlink information common for all radio links - -Downlink information common for all RL - -DOWNLINK PDCH information - -TGPSI 1 -TGPSI 1 <tr< td=""><td>UE Information Elements</td><td></td></tr<>	UE Information Elements	
-Integriny credet into Not Present -Ciphering mode info Not Present -Activation time Not Present -New C-RNTI Not Present -New C-RNTI Not Present -RCS State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present -CN Information Elements Not Present -CN Information elements Not Present -URA identity Not Present Bi Information elements Not Present -Downlink counter synchronisation info Not Present PhyCH information elements - -Prequency info Not Present UPlink radio resources Not Present -Maxium allowed UL TX power Not Present -CHOICE mode FDD -Downlink radio resources FDD -CHOICE mode FDD -Downlink DPCH Information Not Present -Transmission gap pattern sequence 1 -TGPS1 7 -TGRN 4 -TGRN 4 -TGPL2 Not Present -TGPL2 Not Present -Downlink compressed mode info - -Transmission gap pattern sequence 1 -TGPS1 7 -TGRN <	-RRC transaction identifier	0 Nat Brazzat
Integriny protection mode info Not Present - Ciphering mode info Not Present - Activation time Not Present - New U-RNTI Not Present - New U-RNTI Not Present - RC State Indicator CELL_DCH - UTRAN DRX cycle length coefficient Not Present CN Information Elements - - Chindromation info Not Present - Re State Information elements - - UTRAN mobility information elements - - Dawnlink counter synchronisation info Not Present - PhyCH information elements - - Frequency info Not Present Uplink radio resources Not Present - CHOICE forehannel reguimement Not Present Downlink information common for all radio links Not Present - Downlink information common for all radio links Not Present - Downlink information common for all RL - - OFCH compressed mode info - - Transmission gap pattern sequence - configuration parameters - - TGPS - - TGPR - - TGRR Not Present - TGPL1 7 - TGPL2 Not Present - TGPL2 Not Present <td>-Integrity check into</td> <td>Not Present</td>	-Integrity check into	Not Present
Clipienta funde mino Not Present -Activation time Not Present -New C-RNTI Not Present -RCS State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present CN Information Elements Not Present -UTRAN mobility information elements Not Present -URA identity Not Present RB information elements - -Downlink counter synchronisation info Not Present PhyCH information elements - -Frequency info Not Present Uplink radio resources - -CHOICE channel requirement Not Present Downlink radio resources - -CHOICE mode FDD -Downlink PDSCH information Not Present -Downlink promomo for all radio links Not Present -OHOCE mode FDD -Transmission gap pattern sequence - -TGPS I 1 -TGPRC Infinitiy -TGPL1 7 -TGL2 Not Present -TGP 0 <td>-Integrity protection mode into</td> <td>Not Present</td>	-Integrity protection mode into	Not Present
Production lattice Not Present New U-RNTI Not Present -New U-RNTI Not Present -RC State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present CN Information Elements - -URA identity Not Present RB Information elements - -Downlink counter synchronisation info Not Present PhyQH information elements - -Frequency info Not Present Uplink radio resources Not Present -Maximum allowed UL TX power Not Present -CHOICE mode FDD -Downlink radio resources Not Present -OHOICE mode FDD -Downlink DPCH info common for all RL Not Present -OHOICE mode FDD -DPCH compressed mode info - -Transmission gap pattern sequence - -TGCFN (Current CFN + (256 – TTI/10msec))mod 256 -TGPR 7 -TGRD 0 -TGPL1 7 -TGL2 Not Present <		Not Present
New C-RNTI Not Tresent -RRC State Indicator Ot Present -UTRAN DRX cycle length coefficient Not Present CN Information Elements Not Present -ON Information elements Not Present -URAN Draition elements Not Present -URAN mobility information elements Not Present -URAN mobility information elements Not Present -Downlink counter synchronisation info Not Present PhyCH information elements		Not Present
-RRC State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present -CN Information Elements Not Present -UTRAN mobility information elements -UR identity -UR identity Not Present RB information elements -UR identity -Downlink counter synchronisation info Not Present PhyCH information elements	-New C-RNTI	Not Present
-UTRAN DRX cycle length coefficient Not Present CN Information Elements	-RRC State Indicator	CELL DCH
CN Information Elements Not Present -CN Information info Not Present UTRAN mobility information elements	-UTRAN DRX cycle length coefficient	Not Present
-CN Information info Not Present UTRAN mobility information elements	CN Information Elements	
UTRAN mobility information elements -URA identity Not Present -URA identity Not Present -Devmlink counter synchronisation info Not Present PhyCH information elements	-CN Information info	Not Present
-URA identity Not Present RB information elements - -Downlink counter synchronisation info Not Present PhyCH information elements - -Frequency info Uplink radio resources -Maximum allowed UL TX power Not Present -CHOICE channel requirement Not Present Downlink radio resources - -CHOICE mode FDD -Downlink Information common for all radio links Not Present -Downlink Information common for all RL Not Present -CHOICE mode FDD -Downlink Information gap pattern sequence 1 -TGPSI 1 -Transmission gap pattern sequence 1 -TGERC Infinity -TGERC Infinity -TGL1 7 -TGL2 Not Present -TGPL2 Not Present -RPP Mode 0 -GHOICE UL/DL mode UL and DL -Downlink frame type 3 -Downlink compressed mode method SF/2 -Downlink frame type B -Downlink compressed mode method SF/2	UTRAN mobility information elements	
RB information elements Not Present -Downlink counter synchronisation info Not Present PhyCH information elements Not Present -HollCE channel requirement Not Present Downlink radio resources Not Present -CHOICE channel requirement Not Present Downlink PDSCH information FDD -Downlink Information common for all radio links Not Present -Owowlink Information common for all radio links Not Present -Downlink PDSCH information Not Present -Downlink roformation common for all radio links Not Present -Downlink Information common for all RL Not Present -TGPC FDD -TGPS Status Flag Activate -TGCFN Activate -TGBRC Infinity -TGL1 7 -TGL2 Not Present -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -TGPL2 Not Present -TGPL3 3.0 -CHOICE UL/DL mode SF/2 -Downlink compressed mode method SF/2 -Downlink comp	-URA identity	Not Present
-Downlink counter synchronisation info Not Present PhyCH information elements -Frequency info Not Present -Maximum allowed UL TX power Not Present Not Present -CHOICE channel requirement Not Present Not Present Downlink radio resources -CHOICE mode FDD -Downlink information common for all radio links Not Present -Downlink DPCH info common for all RL Not Present -CHOICE mode FDD -Downlink DPCH information Not Present -Downlink DPCH information gap pattern sequence 1 -TGPS Status Flag 1 -TGPRC Infinity -TGSN 4 -TGL1 7 -TGL2 Not Present -TGPL2 Not Present -TGPL2 Not Present -TGPL2 Not Present -TP Mode 0 -CHOICE UL/DL mode SF/2 -Downlink compressed mode method SF/2 -Downlink compressed mode method SF/2 -Downlink compressed mode method SF/2	RB information elements	
PhyCH information elements Not Present -Frequency info Not Present Uplink radio resources Not Present -CHOICE channel requirement Not Present Downlink radio resources FDD -Obwnlink information common for all radio links FDD -Downlink information common for all radio links Not Present -Downlink information common for all radio links Not Present -Downlink pPCH info common for all RL Not Present -CHOICE mode FDD -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI 1 -TGCFN (Current CFN + (256 – TTI/10msec))mod 256 -Transmission gap pattern sequence FDD measurement onfiguration parameters FDD measurement -TGPRC 7 -TGL1 7 -TGL2 Not Present -TGPL1 3 -TGPL1 3 -TGPL2 Not Present -Downlink compressed mode method SF/2 -DeltaSIR1 3.0 -DeltaSIR4ter1 3.0 -DeltaSIR4ter1 3.0 -De	-Downlink counter synchronisation info	Not Present
-Frequency info Not Present Uplink radio resources Not Present -CHOICE channel requirement Not Present Downlink radio resources FDD -CHOICE mode FDD -Downlink PDCH information Not Present -Downlink pDCH information common for all radio links Not Present -Downlink DPCH info common for all RL Not Present -Transmission gap pattern sequence 1 -TGCFN 1 -TGRPC 1 -TGRPC FDD measurement -TGRPC FDD measurement -TGL1 7 -TGL2 Not Present -TGPL2 Not Present -TPP Mode 0 -TTP Mode 0 -TTP Mode 0 -TGPL2 Not Present -Downlink compressed mode method SF/2 -Downlink compressed mode method SF/2 -Downlink former type B -DetaSIRafter1 3.0 -DetaSIRafter1 3.0 -DetaSIRafter2 Not Present -Ni dentify abort Not Present	PhyCH information elements	
Uplink radio resourcesNot Present-Maximum allowed UL TX powerNot Present-CHOICE channel requirementNot PresentDownlink radio resourcesFDD-Okumlink PDSCH information common for all radio linksNot Present-Downlink information common for all RLNot Present-CHOICE modeFDD-Downlink pPCH info common for all RLNot Present-CHOICE modeFDD-Tarasmission gap pattern sequence1-TGPSI1-TGCFNActivate-TGRRCInfinity-TGRRCInfinity-TGL17-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-ITPMode 0-Uplink compressed mode methodSF/2-Downlink trame typeB-DetaSIR23.0-DetaSIR2Not Present-DetaSIR2Not Present-TREV3.0-DetaSIR2Not Present-DetaSIR2Not Present-DetaSIR4fer13.0-DetaSIR4fer2Not Present-N Identify abortNot Present-TX Diversity ModeNot Present-TX Diversity ModeNot Present	-Frequency info	Not Present
-Maximum allowed UL TX power Not Present - CHOICE channel requirement Not Present Downlink radio resources FDD -Ownlink information common for all radio links Not Present -Downlink information common for all RL Not Present -Ownlink DDCH info common for all RL Not Present -Ownlink DPCH info common for all RL Not Present -Ownlink DPCH info common for all RL Not Present -OHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence 1 -TGCFN Activate -TGRPC Infinity -TGSN 4 -TGL1 7 -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -TFP Mode 0 -TFP Mode 0 -TFP Mode 0 -TGPL2 Not Present -Downlink frame type B -DeltaSIR1 3.0 -DeltaSIR2 Not Present -DeltaSIR4fter1 3.0 -DeltaSIR4fter1 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present	Uplink radio resources	
- CHOICE channel requirement Not Present Downlink radio resources -CHOICE mode -Downlink information common for all radio links Not Present -Downlink DPCH info common for all RL Not Present -CHOICE mode FDD -Downlink DPCH info common for all RL Not Present -CHOICE mode -Downlink information common for all RL -CHOICE mode -Downlink information common for all RL -CHOICE mode -TGPSI -TGPSI 1 -TGFS Status Flag 1 -TGGRC Current CFN + (256 – TTI/10msec))mod 256 -Transmission gap pattern sequence Configuration parameters -TGBRC FDD measurement -TGPRC Infinity -TGL2 Not Present -TGPL2 Not Present -TGPL2 Not Present -RPP Mode 0 -ITP Mode 0 -Uplink compressed mode method SF/2 -DeltaSIRAfter1 3.0 -DeltaSIRAfter1 3.0 -DeltaSIRAfter1 3.0 -DeltaSIRAfter12 Not Present -Not Present <t< td=""><td>-Maximum allowed UL TX power</td><td>Not Present</td></t<>	-Maximum allowed UL TX power	Not Present
Downlink radio resources-CHOICE mode-Downlink information common for all radio links-Downlink DPCH info common for all radio links-Downlink DPCH info common for all RL-CHOICE mode-DPCH compressed mode info-Transmission gap pattern sequence-TGPS Status Flag-TGCFN-TGCFN-TGRPC-TGRPC-TGL2-TGL2-TGPL2-RPP-CHOICE UL/DL mode-Downlink compressed mode method-Downlink frame type-DeltaSIR1-DeltaSIR2-DeltaSIR2-DeltaSIR2-DeltaSIR2-DeltaSIR2-DeltaSIR2-DeltaSIR2-DeltaSIR4fer2-N Identify abort-T Reconfirm abort-T T P-T Reconfirm abort-T Reconfirm abort-T T Core abort-T T P-T Reconfirm abort-T Reconfirm abort-T Reconfirm abort-T T Devent abort-T	- CHOICE channel requirement	Not Present
UolUCE mode FDD -Downlink PDSCH information Not Present -Downlink PDSCH information common for all radio links Not Present -Downlink DDSCH information common for all RL Not Present -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence 1 -TGPSI 1 -TGPS Status Flag 1 -TGCFN (Current CFN + (256 – TTI/10msec))mod 256 -Transmission gap pattern sequence Current CFN + (256 – TTI/10msec))mod 256 -TGRPC Infinity -TGSN 4 -TGL1 7 -TGL2 Not Present -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -TTP Mode 0 -CHOICE UL/DL mode UL and DL -Downlink frame type B -DeitaSIR1 3.0 -DeitaSIR2 Not Present -DeitaSIR2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort </td <td>Downlink radio resources</td> <td>FRR</td>	Downlink radio resources	FRR
-Downlink PDCH information Not Present -Downlink information common for all radio links Not Present -Downlink information common for all RL Not Present -CHOICE mode -DDCH compressed mode info -Transmission gap pattern sequence 1 -TGPSI 1 -TGPS Status Flag 1 -TGCFN 1 -TGRPC Infinity -TGSN 4 -TGL1 7 -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -ITP Mode 0 -CHOICE UL/DL mode SF/2 -Downlink compressed mode method SF/2 -Downlink frame type 3.0 -DeitaSIR21 3.0 -DeitaSIR21 3.0 -DeitaSIR21 3.0 -DeitaSIRafter1 3.0 -DeitaSIRafter2 Not Present -N Identify abort Not Present -T Reconfirm abort N	-CHUICE Mode	FDD Not Present
-Downlink DPCH info common for all RL -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI -TGPS Status Flag -TGCFN -Transmission gap pattern sequence configuration parameters -TGBRC -TGL1 -TGPL2 -TGPL3 -TGPL4 -TGPL4 -TGPL5 -TGPL3 -TGPL4 -TGPL3 -TGPL3 -TGPL4 -TGPL5 -TGPL4 -TGPL5 -TGPL4 -TP -Downlink compressed mode method -Downlink compressed mode method -Downlink frame type -DeltaSIR1 -DeltaSIR1 -DeltaSIR2 -DeltaSIR2 -DeltaSIR2 -DeltaSIR2 -DeltaSIR2 -TR econfirm abort -T Reconfirm abort -T Reconfirm abort	-Downlink PDSCH information	NOLFIESEIIL
-CHOICE mode FDD -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI 1 -TGPS Status Flag 1 -TGCFN (Current CFN + (256 - TTI/10msec))mod 256 -Transmission gap pattern sequence (Current CFN + (256 - TTI/10msec))mod 256 -TGMP FDD measurement -TGPRC Infinity -TGL1 7 -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -ITP Mode 0 -U/DICE UL/DL mode UL and DL -Downlink compressed mode method SF/2 -Downlink frame type B -DeltaSIR1 3.0 -DeltaSIR1 3.0 -DeltaSIR2 Not Present -DeltaSIR4fer1 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort Not Present	-Downlink Information common for all RI	Not Present
DPCH compressed mode info-Transmission gap pattern sequence-TGPSI-TGPSI-TGPS-TGPS-TGFN-TGCFN-TGSN-TGL2-TGPL1-TGPL1-TGPL2-RPP-ITP-DOUTE UL/DL mode-Downlink frame type-Downlink frame type-DeltaSIR1-DeltaSIR1-DeltaSIR1-DeltaSIR2-Not Present-Downlink frame type-DeltaSIR2-DeltaSIR4<	-CHOICE mode	FDD
-Transmission gap pattern sequence-TGPSI-TGPS Status Flag-TGCFN-Transmission gap pattern sequenceconfiguration parameters-TGMP-TGSN-TGL1-TGPL2-TGPL2-RPP-TGPL2-RPP-TGPL2-Downlink frame type-DeltaSIR1-DeltaSIR1-DeltaSIR2-DeltaSIR1-DeltaSIR2-N Identify abort-T Reconfirm abort-TGP-TGPL2-TTP-TGP-TGPL3-TGPL3-TGPL4-TGPL2-TGP-TGP-TGP-TGP-TGP-TGPL2-TTP-TTTP-TTP<	-DPCH compressed mode info	
TGPSI1-TGPS Status Flag1-TGCFNActivate-TGCFN(Current CFN + (256 - TTI/10msec))mod 256-Transmission gap pattern sequence configuration parametersFDD measurement-TGMPFDD measurement-TGPRCInfinity-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-TTPWode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR4ter13.0-DeltaSIR4ter2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present	-Transmission gap pattern sequence	
-TGPS Status FlagActivate (Current CFN + (256 - TTI/10msec))mod 256-Transmission gap pattern sequence configuration parametersFDD measurement (Current CFN + (256 - TTI/10msec))mod 256-TGMP-TGMP-TGPRCInfinity-TGSN4-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR2Not Present-T Reconfirm abortNot Present-T Reconfirm abortNot Present-T Reconfirm abortNot Present-T ReperistNot Present-T Reconfirm abortNot Present-T Reconfirm abortNot Present-T Reconfirm abortNot Present-T X Diversity ModeNot Present	-TGPSI	1
-TGCFN(Current CFN + (256 - TTI/10msec))mod 256-Transmission gap pattern sequence configuration parametersFDD measurement-TGMPInfinity-TGPRCInfinity-TGL17-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR2Not Present-DeltaSIR2Not Present-T Reconfirm abortNot Present-T X Diversity ModeNot Present	-TGPS Status Flag	Activate
-Transmission gap pattern sequence configuration parametersFDD measurement Infinity-TGMPFDD measurement-TGPRCInfinity-TGSN4-TGL17-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-T Reconfirm abortNot Present-T Reconfirm abortNot Present-T Keconfirm abortNot Present	-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence configuration parametersFDD measurement-TGMPFDD measurement-TGPRCInfinity-TGSN4-TGL17-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present		
configuration parametersFDD measurement-TGMPInfinity-TGPRCInfinity-TGSN4-TGL17-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR4fter13.0-DeltaSIR4fter2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-Transmission gap pattern sequence	
-TGMPFDD measurement-TGPRCInfinity-TGSN4-TGL17-TGL2Not Present-TGD0-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR13.0-DeltaSIR2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	configuration parameters	
-TGPRC Infinity -TGSN 4 -TGL1 7 -TGL2 Not Present -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -ITP Mode 0 -CHOICE UL/DL mode UL and DL -Downlink compressed mode method SF/2 -Downlink frame type B -DeltaSIR1 3.0 -DeltaSIR2 Not Present -DeltaSIR4fter1 3.0 -DeltaSIR4fter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort Not Present -T Reconfirm abort Not Present	-TGMP	FDD measurement
-1GSN4-TGL17-TGL2Not Present-TGD0-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-IGPRC	Infinity
-1GL17-TGL2Not Present-TGD0-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-IGSN	4
-TGL2Not Present-TGD0-TGPL13-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIR2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-IGLI TCL2	/ Not Present
-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 -DeltaSIR2 Not Present -DeltaSIRafter1 3.0 -DeltaSIRafter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -TX Diversity Mode Not Present		
ITGPL1O-TGPL2Not Present-RPPMode 0-ITPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-DeltaSIRafter2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-TGPL1	3
-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 -DeltaSIR2 Not Present -DeltaSIR4fter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -TX Diversity Mode Not Present	-TGPI 2	Not Present
-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 -DeltaSIR2 Not Present -DeltaSIR2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -TX Diversity Mode Not Present	-RPP	Mode 0
-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIRafter13.0-DeltaSIR2Not Present-DeltaSIRafter2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-ITP	Mode 0
-Downlink compressed mode methodSF/2-Uplink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIRafter13.0-DeltaSIR2Not Present-DeltaSIRafter2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present-TX Diversity ModeNot Present	-CHOICE UL/DL mode	UL and DL
-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	-Downlink 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	-Uplink compressed mode method	SF/2
-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	-Downlink frame type	В
-DeltaSIRatter1 3.0 -DeltaSIR2 Not Present -DeltaSIRafter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -TX Diversity Mode Not Present	-DeltaSIR1	3.0
-DeltaSIR2 Not Present -DeltaSIRafter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -TX Diversity Mode Not Present	-DeltaSIRafter1	3.0
-DeitaSIKatter2 Not Present -N Identify abort Not Present -T Reconfirm abort Not Present -TX Diversity Mode Not Present		Not Present
-T Reconfirm abort Not Present -TX Diversity Mode Not Present	-DeltaSIKatter2	Not Present
-TX Diversity Mode Not Present	-in identify abort	Not Present
	TX Diversity Mede	Not Present
-SSDT information Not Present		Not Present
-Oob Fillion Not Present	-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	-Downlink information per radio link list	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
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	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-SFN-SFN observed time difference reporting	Type 1
indicator	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-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
-Inter-frequency set undate	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
	Not rosent

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) shall be added into the required accuracy defined in subclause 8.7.3.1.2 as shown in table 8.7.3.1.3.
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	Unit	Accura	Conditions	
Parameter		Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dBm	-45.2	-78.2	-9487
UTRA Carrier RSSI	dBm	± 4	± 7	-8770
	dBm	± 6	± 9	-7050

Table 8.7.3.1.3: UTRA Carrier RSSI absolute accuracy

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

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.

8.7.3.2 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 condition	Extreme condition	lo [dBm/3.84 MHz]
	UTRA Carrier RSSI	dBm	± 7	± 11	-9450

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-[14 slots is FFS] 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.

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 8.7.3.1.2.

8.7.3.2.4.2 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 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.
- 6) The result of step 5) is compared to actual power level difference of UTRA Carrier RSSI of Channel 1 and Channel 2.
- 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, 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 8.7.3.1.2 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, 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 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) shall be added into the required accuracy defined in clause 8.7.3.2.2 as shown in table 8.7.3.2.2.

		Accura	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
UTRA Carrier RSSI	dBm	-45.2	-78.2	-9487
	dBm	± 4	± 7	-8770
	dBm	± 6	± 9	-7050

Table 8.7.3.2.2: UTRA Carrier RSSI relative accuracy

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

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.

8.7.3A GSM Carrier RSSI

Void.

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.

Parameter		Accuracy [dB]	
		PUEMAX 24dBm	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

Table 8.7.3C.2.1 UE transmitted power absolute accuracy

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, the UE L1 shall respond with a value of -50 dBm.

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.

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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.

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement	As specified in TS 25.101 section A.3.1
		Channel 12.2 kbps	
Power Control		On	
Target quality value on	BLER	0.01	
DTCH			

Table 8.7.3C.4.2: Cell Specific parameters for UE transmitted pow

Parameter	Unit	Cell 1		
CPICH_Ec/lor	dB	-10		
PCCPCH_Ec/lor	dB	-12		
SCH_Ec/lor	dB	-12		
PICH_Ec/lor	dB	-15		
DPCH_Ec/lor	dB	Note1		
OCNS		Note 2		
\hat{I}_{or}/I_{oc}	dB	0		
I _{oc}	dBm/3.84 MHz	-70		
CPICH_Ec/lo	dB	-13		
Propagation 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.}				

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 [100] 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-11.

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] and Annex A of 34.123-1 [21] 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
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-CHOICE Measurement type	UE Internal measurement
-UE Internal measurement quantity	
-CHOICE mode	FDD
-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	
-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	
 Intra-frequency measured results 	
- Cell measured results	
- Cell Identity	Not present
 SFN-SFN observed time difference 	Checked that this IE is absent
 Cell synchronisation information 	Checked that this IE is absent
- Primary CPICH info	
 Primary scrambling code 	150
- 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	
 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
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
-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.

Deservator	11	Mean Power range [dB]	
Parameter	Unit	PUEMAX 24dBm	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} \geq -114 dBm.

$$\left| CPICH _RSCP1 \right|_{in \, dBm} - CPICH _RSCP2 \right|_{in \, dBm} \le 20 dB$$

$$\frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dB} \le 20dB$$

$$\frac{I_o}{(\hat{I}_{or})}\Big|_{in\ dB} - \left(\frac{P - CCPCH _ E_c}{I_{or}}\right)\Big|_{in\ dB}$$
 is low enough to ensure succe

essful SFN decoding.

Table 8.7.4.1.1

			Conditions
Parameter	Unit	Accuracy [chip]	lo [dBm/3.84 MHz1
SFN-CFN observed time difference	chip	± 1	-9450

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

Devementer	l la it	Test 1	Test 2	Test 3		
Parameter	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		
DPCH_Ec/lor	dB	-15	-15	-15		
OCNS_Ec/lor	dB	-1.11	-1.11	-1.11		
Îor/loc	dB	10.5	10.5	10.5		
		$I_0 - 13.7 dB = I_{0C}$, $I_0 - 13.7 dB = I_{0C}$, I_0		lo -13.7 dB = loc,		
100	UBIN/ 5.04 IVITIZ	Note 1	Note 1	Note 1		
lo	dBm/3.84 MHz	-50 -72 -94				
Relative delay of path received			v			
from cell 2 with respect to cell	chip		Note 2			
1			1000 2	1		
Propagation condition	-	AWGN AWGN AWGN				
NOTE 1: <i>loc</i> level shall be adjusted according the total signal power <i>lo</i> at receiver input and the geometry factor						
lor/loc.						
NOTE2: For example, x= 491520 or 9830399						
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 sec	onds so that UE does	2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.				

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 8.7.4.1.2.

8.7.4.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT message.
- 3) 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.
- 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 8.7.4.1.2 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 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE, the RF parameters are set up according to table 8.7.4.1.2 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 from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the 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:

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
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	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 	
-SFN-SFN observed time difference reporting	
indicator	No report
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	IRUE
-CPICH RSCP reporting indicator	
-Pathioss reporting indicator	IRUE
-Reporting quantities for monitored set cells	No report
-SFN-SFN Observed time difference reporting	No report
Coll synchronication information reporting	TDUE
indicator	IKOL
-Cell Identity reporting indicator	TRUF
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-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.

8.7.4.1.5 Test requirements

The SFN-CFN observed time difference measurement accuracy shall meet the requirements in clause 8.7.4.1.2.

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.

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 $|_{dBm} \ge -114 \text{ dBm}.$

$$\left| CPICH _RSCP1 \right|_{in \, dBm} - CPICH _RSCP2 \right|_{in \, dBm} \le 20 dB$$

| Channel 1_Io|_{dBm/3.84 MHz} -Channel 2_Io|_{dBm/3.84 MHz} | \leq 20 dB.

$$\frac{I_o}{\left(\hat{I}_{or}\right)}\Big|_{in\ dB} \quad - \quad \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB$$

Table 8.7.4.2.1

			Conditions
Parameter	Unit	Accuracy [chip]	lo [dBm/3.84 MHz]
SFN-CFN observed time difference	chip	± 1	-9450

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.

Baramotor	Unit	Tes	Test 1		Test 2		Test 3	
Falailletei	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
LITRA RE Channel number		Channel	Channel	Channel	Channel	Channel	Channel	
		1	2	1	2	1	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	5	-1	5	-1	5	
DPCH_Ec/lor	dB	-1	5	-1	5	-1	5	
OCNS_Ec/lor	dB	-1.11		-1.11		-1.11		
Îor/loc	dB	10.1		10.1		10).1	
	dBm/ 2.84 MHz	lo –10.6	dB = loc,	Io - 10.6 dB = Ioc,		Io -10.6 dB = Ioc,		
		Not	e 1	Note 1		Note 1		
lo	dBm/3.84 MHz	-50 -72 -94)4			
Relative delay of path received				,	~			
from cell 2 with respect to cell	chip			Not	n to 2			
1								
Propagation condition - AWGN AWGN AWGN					GN			
NOTE 1: <i>loc</i> level shall be adjusted in each carrier frequency according the total signal power <i>lo</i> at receiver input								
and the geometry factor <i>lor/loc</i> .								
NOTE2: For example, x= 491520 or 9830399								
Tests shall be done sequentially.	Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests					arameters		

Table 8.7.4.2.2: SFN-CFN observed time difference Inter frequency tests parameters

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 8.7.4.2.2.

8.7.4.2.4.2 Procedure

- 1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

- 3) SS shall transmit MEASUREMENT CONTROL message.
- 4) UE shall transmit periodically MEASUREMENT REPORT messages.
- 5) 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.
- 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 8.7.4.2.2 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 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.2.2 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, 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:

PHYSICAL CHANNEL RECONFIGURATION message for inter frequency measurement

Message Type IUE Information Elements RRC transaction identifier 0 Integrity protection mode info Not Present -Ciphering mode info Not Present -Activation time Not Present -RC State Indicator CELL_DCH -URAN motion Elements Not Present -Downlink calor resources FDD -Maximum allowed UL TX power Not Present -CHOICE channel requirement Not Present -Downlink information common for all radio links Not Present -Downlink information common for all radio links Not Present -Downlink information common for all RL -CHOICE mode -DORCH compressed mode info -Transmission gap pattern sequence -TGPS I -TGPRC -TGPRC	Information Element	Value/Remark
UE Information Elements 0 -Integrity check into Not Present -Integrity protection mode info Not Present -Ciphering mode info Not Present -Activation time Not Present -New U-RNTI Not Present -New U-RNTI Not Present -New C-RNTI Not Present -RC State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present -CN Information elements -CH Information elements -URA identity Not Present -Binformation elements -Ownlink counter synchronisation info -Prequency info Not Present -CHOICE Channel requirement Not Present -Downlink radio resources FDD -CHOICE Channel requirement Not Present -Downlink radio resources FDD -TGRPS Transmission gap pattern sequence Co	Message Type	
UE information Elements 0 HRC transaction identifier 0 Integrity check info Not Present -Ciphering mode info Not Present -Activation time Not Present -New U-RNTI Not Present -New U-RNTI Not Present -New U-RNTI Not Present -New C-RNTI Not Present -CN Information Elements Not Present -CN Information elements Not Present -UTRAN mobility information elements Not Present -Downlink counter synchronisation info Not Present -Prequency info Not Present Uplink radio resources FDD -CHOICE mode FDD -Downlink PDSCH information Not Present -Downlink NPDSCH information Not Present -TGPS 1 -TGPSI 1		
-RRC transaction loop line 0 -Integrity protection mode info Not Present -Ciphering mode info Not Present -Activation time Not Present -Activation time Not Present -New U-RNTI Not Present -RRC State indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present CN Information file Not Present -UTRAN mobility information elements -UTRAN mobility information elements -Downlink counter synchronisation info Not Present PhyCH information elements - -Frequency info Not Present Downlink radio resources FDD -CHOICE channel requirement Not Present Downlink radio resources FDD -CHOICE channel requirement Not Present Downlink information common for all RL - -CHOICE channel requirement Not Present -Downlink DPCH information equence - -TGPSI 1 -Transmission gap pattern sequence 1 -TGPSI 1 -TGPSI	UE Information Elements	9
-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 -RCS State Indicator CELL_DCH -UTRAN Moltiky information elements Not Present -UTRAN moltiky information elements Not Present -URAN moltiky information elements Not Present -Dwollink counter synchronisation info Not Present -PhyCH information elements Not Present -Downlink radio resources FDD -ChOICE mode DD -Downlink information common for all radio links Not Present -Downlink information sequence TGPS -Transmission gap pattern sequence 1 -TGPS I 1 -TGPS I Not Present -TGPCI Tompressed mode info -Transmission gap pattern sequence 1 -TGPS I 1 -TGPS I 1 -TGPCI I 7 -TGPC I Not Present	-RRC transaction identifier	U Not Procent
Filteging platector induce into Not Present - Ciphering mode info Not Present -Activation time Not Present -New U-RNTI Not Present -RC State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present CN Information lifements CELL_DCH -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 - -CHOICE channel requirement Not Present -Downlink radio resources - -CHOICE mode FDD -Downlink pPSCH information Not Present -Downlink compressed mode info - -Transmission gap pattern sequence - -TGPS Status Flag 1 -TGPS Status Flag 1 -TGPS C - -TGRE 1 -TGPS C - -TGRE 1 -TGPS C - -TGPS C - -TGPL1 7 -TGL2 Not Present -TGPD	-Integrity check info	Not Present
C-Dipleting induce info Not Present -Activation time Not Present -New C-RNTI Not Present -RC State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present CN Information Elements Not Present -ON Information elements Not Present -URAN DRX cycle length coefficient Not Present Bi information elements Not Present -URAN DRX dentity Not Present Bi information elements Not Present -Dwonlink counter synchronisation info Not Present PhyCH information elements Not Present -Hirding resources Not Present -Maximum allowed UL TX power Not Present -CHOICE channel requirement Not Present Downlink information common for all radio links Not Present -Downlink information common for all RL Not Present -DPCH compressed mode info -Transmission gap pattern sequence -TGCFN Infinity -TGPSI Activate -TGPSI Activate -TGPSI Not Present -TGPSI Activate -TGPSI Activate -TGCFN GOP -TGPL1 TGN -TGPL2 Not Present	-Integrity protection mode into	Not Present
Pactivation lime Not Present New U-RNTI Not Present -RRC State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present CM Information Elements Not Present -URA identity Not Present -URA identity Not Present -Re State Information elements	-Cipnering mode into	Not Present
New C-RNTI Not Present -RRC State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present CN Information Elements Not Present -ON Information elements Not Present -URAN DRV information elements Not Present -URAN DRV information elements Not Present -Deminik counter synchronisation info Not Present -Prequency info Not Present -Frequency info Not Present -Maximu allowed UL TX power Not Present -Maximu allowed UL TX power Not Present -CHOICE rhandel requirement Not Present Downlink radio resources FDD -CHOICE mode FDD -Downlink DPCH information Not Present -Demoning in ano common for all RL CHOICE mode -TGPSI -TGPSI -TGPSI staus Flag 1 -TGPS staus Flag 1 -TGPS Staus Flag 1 -TGPSI - TGPSI 1 -TGSN 4 -TGL1 7 -TGEL1 7 <td></td> <td>Not Present</td>		Not Present
New CHN11 Not Present CRRC State Indicator CELL_DCH -UTRAN DRX cycle length coefficient Not Present CN Information Elements		Not Present
-TTRAN DRX cycle length coefficient Not Present -CN Information info Not Present UTRAN mobility information elements Not Present -URA identity Not Present B information elements Not Present -Dwmlink counter synchronisation info Not Present PhyCH information elements Not Present -Transmission resources	-New C-RNTI	
OTHAT DIAY DIAY Diversity in control info Not Present CN Information Elements Not Present UTRAN mobility information elements Not Present -URAN mobility information elements Not Present -Downlink counter synchronisation info Not Present PhyCPL information elements	-LITRAN DRX cycle length coefficient	Not Present
-CN Information info Not Present UTRAN mobility information elements -URA identity -URA identity Not Present RB information elements -Downlink counter synchronisation info -PhyCH information elements Not Present -Frequency info Not Present Uplink radio resources Not Present -Odownlink PDSCH information Not Present -Downlink radio resources FDD -Obwnlink PDSCH information Not Present -Downlink DPCH information Not Present -Downlink DPCH information Not Present -Downlink DPCH info common for all RL Not Present -CHOICE mode -FDD -Downlink DPCH information gap pattern sequence 1 -TGPS Status Flag 1 -TGPS Status Flag 1 -TGCFN FDD measurement -TGSN 4 -TGL2 Not Present -TGPL1 3 -TGPL2 Not Present -POwnlink compressed mode method SF/2 -Downlink rame type B -Downlink rame type 3.0 -ObeltaSIRafter1 3.0 -DeltaSIRafter2 Not Present -DeltaSIRafter1 3.0 -DeletasIRafter1 <td< td=""><td>CN Information Elements</td><td></td></td<>	CN Information Elements	
UTRAN mobility information elements Not Present -URA identity Not Present -RB information elements	-CN Information info	Not Present
URA identity Not Present RB information elements - -Downlink counter synchronisation info Not Present PhyCH information elements - -Frequency info Uplink radio resources -CHOICE channel requirement Not Present Downlink radio resources - -CHOICE mode FDD -Downlink information common for all radio links Not Present -Downlink DPCH information common for all RL Not Present -CHOICE mode FDD -Downlink DPCH information common for all RL Not Present -CHOICE mode FDD -TGPSI Activate -TGPS Status Flag Activate -TGSR FDD measurement -TGSR 4 -TGL1 7 -TGL2 Not Present -TGPL2 Not Present -TGPL3 7 -TGL4 7 -TGPL2 Not Present -TGPL3 3 -TopL4 7 -TGPL2 Not Present	UTRAN mobility information elements	
RB information elements Not Present -Downlink counter synchronisation info Not Present PhyCH information elements	-URA identity	Not Present
-Downlink counter synchronisation info Not Present PhyCH information elements - Frequency info Not Present Uplink radio resources - -CHOICE channel requirement Not Present Downlink radio resources - -CHOICE mode FDD -Downlink PDSCH information Not Present Not Present -Downlink DPCH information for all radio links - Downlink DPCH information for all RL Not Present -Downlink DPCH information for all RL - -CHOICE mode FDD -Downlink DPCH information gap pattern sequence 1 Activate -TGPS I Activate -TGFR 1 Activate -TGFRC 1 Activate -TGBPC 1 Activate -TGBPL1 7 7 -TGPL2 Not Present 0 -TGPL3 7 Not Present -TGPL4 7 7 -TGL3 7 7 -TGBPC 1 1 -TGPL1 3 3 -TGPL2 Not Present 1	RB information elements	
PhyCH information elements -Frequency info Not Present -Frequency info Not Present Uplink radio resources Not Present -CHOICE channel requirement Not Present Downlink radio resources FDD -Obwnlink PDSCH information Not Present -Downlink PDSCH information common for all RL Not Present -CHOICE mode FDD -Downlink PDSCH information common for all RL Not Present -CHOICE mode FDD -Tassmission gap pattern sequence 1 -TGGFN Current CFN + (256 – TTI/10msec))mod 256 -Transmission gap pattern sequence FDD measurement -TGPRC Infinity -TGPRC FDD measurement -TGL1 7 -TGL2 Not Present -TGPL1 3 -TGPL2 Not Present -RPP Mode 0 -ITP Mode 0 -ITP Mode 0 -Downlink compressed mode method SF/2 -Downlink frame type B -DeltaSIR2 Not Present -DeltaSIR2 Not Present<	-Downlink counter synchronisation info	Not Present
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-Transmission gap pattern sequence configuration parametersFDD measurement-TGMPInfinity-TGPRCInfinity-TGSN4-TGL17-TGL2Not Present-TGPL13-TGPL2Not Present-RPPMode 0-ITFPMode 0-CHOICE UL/DL modeUL and DL-Downlink compressed mode methodSF/2-Downlink frame typeB-DeltaSIR13.0-DeltaSIR2Not Present-N Identify abortNot Present-T Reconfirm abortNot Present <th></th> <th></th>		
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-Default DPCH Offset Value Not Present	- I A Diversity Wode	Not Present
	-Default DPCH Offset Value	Not Present
-Downlink information per radio link list I Not Present	-Downlink information per radio link list	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
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 into list	Not Descent
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Inter frequency reporting oritoria
-Inter-frequency measurement quantity	inter-frequency reporting cittena
-CHOICE reporting chiena	0
Moasurement quantity for frequency quality	
estimate	CFICIT KOCF
-Inter-frequency reporting quantity	
-LITRA Carrier RSSI	TRUE
-Erequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-SEN-SEN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-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
-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

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

The SFN-CFN observed time difference measurement accuracy shall meet the requirements in clause 8.7.4.2.2.

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.

	CHANGE REQUEST	CR	?-Form-v7
æ	34.121 CR 224 # rev - ^{# C}	Current version: 3.10.0 #	3
For <u>HELP</u> or	using this form, see bottom of this page or look at the	pop-up text over the X symbo	ols.
Proposed chang	e affects: UICC apps# ME X Radio Acc	cess Network Core Netw	ork
Title:	Corrections of test for power setting in uplink comp	pressed mode	
Source:	f T1/RF		
Work item code:	£ -	Date:	
Category:	 F Use <u>one</u> 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 <u>TR 21.900</u>. 	Release: R99 Use one of the following releas 2 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)	es:

Reason for change: ೫	Permissible compressed mode patterns have changed in the core specification (TS25.133). Actual signalling procedures for the test case should also be specified.
Summary of change: ℜ	A permissible compressed mode pattern is used for the test. Signalling messages and contents for - activation of compressed mode - changing of power control algorithm and step size are introduced in the "Procedure" of the test case for Power setting in uplink compressed mode.
Consequences if #	UEs may not support the compressed mode pattern used for the test, and actual signalling procedures for the test would be left unclear.
not approved.	signaling procedures for the test would be fort unoreal.
Clauses affected: 米	5.7
	YN
Other specs अ 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 <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

5.7 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 $10Log_{10}(N_{pilot.prev} / N_{pilot.curr})$ 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 μ s before the slot boundary to 2 5 μ 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.

Power difference (Up or down) ∆P [dB]	Transmitter power step tolerance after a transmission gap [dB]	
$\Delta P \leq 2$	+/- 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	

Table 5.7.1: Transmitter power difference tolerance after a transmission gap of up to 14 slots

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.

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	

able 5.7.2: Transmitte	r power co	ntrol range t	for 3dB step size
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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 0.04 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 paragraph step (43) below, set the output power of the UE, measured at the UE antenna connector, to be in the range $-3\underline{64} \pm 9$ 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.
- Transmit the PHYSICAL CHANNEL RECONFIGURATION message to setSignal the uplink power control parameters to use Algorithm 1 and a step size of 2 dB₃.
- 3) Signal the set of and to set the compressed mode parameters shown in table 5.7.5. <u>The contents of the message</u> 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 <u>downward</u> 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.

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	<u>2</u> 10
TGL1	Length of first transmission gap within the transmission gap pattern	740 slots
TGL2	Length of second transmission gap within the transmission gap pattern	75 slots
TGD	Duration between the starting slots of two consecutive	1520 slots
	transmission gaps within a transmission gap pattern	
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	A
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

Table 5.7.5: Parameters for	pattern A for com	pressed mode test
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41

The resulting compressed mode pattern is shown in figure 5.7.2.



Figure 5.7.2: Pattern A for compressed mode test

43) After the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE is received, <u>T</u>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	4 <u>0</u> 1 4 <u>-</u> 4 <u>-</u> 4 <u>-</u> 4 <u>-</u> 4 <u>-</u> 4 <u>-</u> 1 <u>-1</u> <u>-1</u> <u>-1</u> <u>-1</u> <u>-1</u>
1	<u>-1 -1 + + + + + + 1 +0 1 +0 +1 0</u>
2	- <u>1</u> - <u>0</u> - <u>1</u> 0101010101

54) 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 <u>+0</u>: Slots # <u>5,6,7,8,</u>9,10,11,12,<u>13,</u>14 CFN <u>+1</u>: Slot<u>s</u> # <u>50,1,9</u>

- 65) Re-start the test. Before proceeding with step (87) below, set the output power of the UE, measured at the UE antenna connector, to be in the range 32 ± 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.
- 76) Repeat steps (2) and (3) above, with the exception that TGCFN = 3 in table 5.7.5 and table 5.7.9.
- <u>87</u>) <u>After the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE is received,</u> <u>T</u>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	0 0 <u>0</u> 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
4	<u>-0</u> - <u>0</u> 0 <u>0</u> 0 0 0 0 0 0 0 1 1 0 0 1
5	- <u>0</u> - <u>1</u> - <u>0</u> - <u>1</u> - <u>0</u> 1 0 1 0 1 0 1 0 1 0

98) Measure the mean power in the following slots, not including the 25 µs transient periods at the start and end of each slot:

CFN 4<u>3</u>: Slots # 5,6,7,8,9,10,11,12,<u>13,</u>14 CFN 54: Slot<u>s</u> # 50,1,9

- **10**<u>9</u>) Re-start the test. Before proceeding with step (131) 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.
- 140) <u>Transmit the PHYSICAL CHANNEL RECONFIGURATION message to set</u>Signal the uplink power control parameters to use Algorithm 1 and a step size of 1 dB, and to set the-
- 12)Signal the set of 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.

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	0
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	А
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

Table 5.7.8: Parameters for	pattern B for com	pressed mode test
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43

The resulting compressed mode pattern is shown in figure 5.7.3.



Figure 5.7.3: Pattern B for compressed mode test

¹³¹⁾ After the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE is received, <u>**T**</u>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	1111111
8	00000000
9	00011111111111

142) 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

Information Element	Value/Pomark
Message Type	Value/Nethark
incodigo i ypo	
UE Information Elements	
-RRC transaction identifier	<u>U</u> Not Present
-Integrity check Into	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
	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 into	
DPCCH Power offset	E E E E E E E E E E E E E E E E E E E
-DFCCTTFOWEIOIISEL	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	<u>0</u>
-Number of DPDCH	$\frac{1}{2}$
-spreading factor	
-IFCI existence	IRUE Not Present(0)
-Puncturing Limit	1
Downlink radio resources	<u> </u>
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
<u>-CHOICE mode</u>	<u>FDD</u>
<u>-UPCH compressed mode info</u>	
- mansmission gap pattern sequence	1
-TGPS Status Flag	Activate
-TGCFN	0
-Transmission gap pattern sequence	-
configuration parameters	
<u>-TGMP</u>	FDD measurement
-TGPRC	$\left \frac{1}{2}\right $
-TGL2	/ 7
-TGD	15
-TGPL1	3
-TGPL2	Not Present
RPP	Mode 1
<u>ITP</u>	Mode 1
<u>-CHOICE UL/DL mode</u>	UL and DL
-Downlink compressed mode method	<u>SF/2</u>
-Uplink compressed mode method	$\frac{S\Gamma/2}{\Lambda}$

Table 5.7.9: PHYSICAL CHANNEL RECONFIGURATION message (step 2)

-DeltaSIR1	<u>0</u>
-DeltaSIRafter1	<u>0</u>
-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	<u>100</u>
-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	<u>128</u>
<u>-Code number</u>	<u>0</u>
-Scrambling code change	No code change
-TPC combination index	<u>0</u>
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

Information Element	Value/Remark
Message Type	value///emark
UE Information Elements	
-RRC transaction identifier	U Not Procent
-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 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	Net Present
-Maximum allowed UL TX power	Not Present
-CHOICE Channel requirement	
-CHOICE mode	FDD
-DPCCH Power offset	-6dB
-PC Preamble	1 frame
-SRB delay	7 frames
-Power Control Algorithm	Algorithm 1
<u>-TPC step size</u>	<u>1dB</u>
-CHOICE mode	FDD
<u>-Scrampling code type</u>	Long
-Scrambing code number	
-spreading factor	
-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 PL	Not Procent
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
<u>-TGPS Status Flag</u>	Activate
<u> </u>	<u>7</u>
- I ransmission gap pattern sequence	
Configuration parameters	EDD moasurement
TGPRC	1
-TGSN	
-TGL1	14
-TGL2	Not Present
<u>-TGD</u>	<u>0</u>
<u>-TGPL1</u>	4
<u>-rGPL2</u>	Not Present
	Mode 0
	III. and DI
-Downlink compressed mode method	SE/2
-Uplink compressed mode method	SF/2
-Downlink frame type	Ā

Table 5.7.10: PHYSICAL CHANNEL RECONFIGURATION message (step 10)

-DeltaSIR1	<u>0</u>
-DeltaSIRafter1	<u>0</u>
-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	<u>100</u>
-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	<u>FDD</u>
-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	<u>128</u>
-Code number	<u>0</u>
-Scrambling code change	No code change
-TPC combination index	<u>0</u>
-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:

- Pg 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 μs 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 #59 of CFN 21, the power difference $P_d P_c$ from the power in slot #14 of CFN 1 shall be within the range $-\frac{116}{5} \pm \frac{34}{5}$ dB.
- 3. In slot #59 of CFN 54, the power difference $P_d P_c$ from the power in slot #14 of CFN 4 shall be within the range $+\underline{116} \pm \underline{34}$ 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 ± 2 dB.
- 7. In the slots between slot #610 of CFN 40 and slot #12 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 #59 of CFN 10 to slot #12 of CFN 1 shall be within the range given in table 5.7.3 for TPC_cmd = +1.
- 9. In the slots between slot #610 of CFN 43 and slot #12 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 #59 of CFN 43 to slot #12 of CFN 4 shall be within the range given in table 5.7.3 for TPC_cmd = -1.

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F.6.2 Statistical testing of RRM delay performance

Delay tests in clause 8.2 shall be repeated [50] times in order to determine the required success ratio NOTE: A statistical approach needs to be developed. The number of repetitions required for the test will target towards a good compromise between test time and wrong decision risk.

F.6.2.1 Test Method

Each test is performed in the following manner: <u>a)</u> Setup the required test conditions.

b) Measure the delay repeated times. Start each repetition after sufficient time, such that each delay test is independent from the previous one. The delay-times, measured, are simplified to:

<u>a good delay, if the measured delay is \leq limit.</u> <u>a bad delay, if the measured delay is > limit</u>

c) Record the number of delays (ns), tested, and the number of bad delays (ne)

d) Stop the test at an early pass or an early fail event.

e) Once the test is stopped, decide according to the pass fail decision rules (subclause F.6.2.7)

F.6.2.2 Bad Delay Ratio (ER)

The Bad Delay Ratio (ER) is defined as the ratio of bad delays (ne) to all delays (ns). (1-ER is the success ratio)

F.6.2.3 Test Criteria

The test shall fulfil the following requirements: <u>a) good pass fail decision</u>

1) to keep reasonably low the probability (risk) of passing a bad unit for each individual test;

2) to have high probability of passing a good unit for each individual test;

b) good balance between test-time and statistical significance

3) to perform measurements with a high degree of statistical significance;

4) to keep the test time as low as possible.

F.6.2.4 Calculation assumptions

F.6.2.4.1 Statistical independence It is arranged by test conditions, that bad delays are independent statistical events.

F.6.2.4.2 applied formulas

The specified ER is 10% in most of the cases. This stipulates to use the binomial distribution to describe the RRM delay statistics. With the binomial distribution optimal results can be achieved. However the inverse cumulative operation for the binomial distribution is not supported by standard mathematical tools. The use of the Poisson or Chi Square Distribution requires ER \rightarrow 0. Using one of this distributions instead of the binomial

distribution gives sub-optimal results in the conservative sense: a pass fail decision is done later than optimal and with a lower wrong decision risk than predefined.

The formulas, applied to describe the RRM delay statistics test, are based on the following experiment: (1) After having observed a certain number of bad delays (**ne**) the number of all delays (**ns**) are counted to calculate ER. Provisions are made (note 1) such that the complementary experiment is valid as well: (2) After a certain number of delays (**ns**) the number of bad delays (**ne**), occurred, are counted to calculate ER. Experiment (1) stipulates to use the Chi Square Distribution with degree of freedom ne: 2*dchisq(2*NE,2*ne). Experiment (2) stipulates to use the Poisson Distribution: dpois(ne,NE)

(NE: mean value of the distribution)

To determine the early stop conditions, the following inverse cumulative operation is applied:

0.5 * qchisq(D,2*ne) for experiment (1) and (2)

D: wrong decision risk per test step

Note: other inverse cumulative operations are available, however only this is suited for experiment (1) and (2).

F.6.2.4.3 approximation of the distribution

The test procedure is as follows:

During a running measurement for a UE ns (Number of Delays) and ne (Number of bad delays) are accumulated and from this the preliminary ER is calculated. Then new samples up to the next bad delay are taken. The entire past and the new samples are basis for the next preliminary ER. Depending on the result at every step, the UE can pass, can fail or must continue the test.

As early pass- and early fail-UEs leave the statistical totality under consideration, the experimental conditions are changed every step resulting in a distribution that is truncated more and more towards the end of the entire test. Such a distribution can not any more be handled analytically. The unchanged distribution is used as an approximation to calculate the early fail and early pass bounds.

F.6.2.5 Definition of good pass fail decision.

This is defined by the probability of wrong decision F at the end of the test. The probability of a correct decision is 1- F.

The probability (risk) to fail a good DUT shall be $\leq F$ according to the following definition: A DUT is failed, accepting a probability of $\leq F$ that the DUT is still better than the specified bad delay ratio (Test requirement). The probability (risk) to pass a bad DUT shall be $\leq F$ according to the following definition: A DUT is passed, accepting a probability of $\leq F$ that the DUT is still worse than M times the specified bad delay ratio. (M>=1 is the bad DUT factor).

This definitions lead to an early pass and an early fail limit: Early fail: $er \ge er \lim_{fail}$

$$er \lim_{n \to \infty} (D, ne) = \frac{2 * ne}{2 + ne}$$

$$qchisq(D,2*ne)$$

For ne \geq [5]

Early pass: $er \leq erlimbad_{pass}$

 $er \lim bad_{pass}(D, ne) = \frac{2 * ne * M}{qchisq(1-D, 2*ne)}$

(2)

(1)

For ne ≥ 1

With

er (normalized ER): ER according to F.6.2.2 divided by specified ER

D: wrong decision probability for a test step . This is a numerically evaluated fraction of F, the wrong decision probability at the end of the test. see table F.6.2.6.1

ne: Number of bad delays

M: bad DUT factor see table F.6.2.6.1

<u>qchisq: inverse cumulative chi squared distribution</u>

F.6.2.6 Good balance between test-time and statistical significance

Two independent test parameters are introduced into the test and shown in Table F.6.2.6.1. These are the obvious basis of test time and statistical significance. From them four dependent test parameters are derived.

Table F.6.2.6 independent and dependent test parameters

Independent test pa	rameters		Dependent test parameters			
Test Parameter	<u>Value</u>	<u>Reference</u>	Test parameter	Value	<u>Reference</u>	
Bad DUT factor M	[1.5]	<u>Table F.6.1.8</u>	Early pass/fail condition	Curves	Subclause F.6.2.5 Figure 6.2.9	
<u>Final probability of</u> wrong pass/fail	<u>[5%]</u>	<u>Table F.6.2.8</u>	Target number of bad delays	[154]	<u>Table 6.2.8</u>	
decision F			Probability of wrong pass/fail decision per test step D	<u>[0.6 %]</u>		
			Test limit factor <u>TL</u>	[1.236]	<u>Table 6.2.8</u>	

F.6.2.7 Pass fail decision rules

The required confidence level 1-F (= correct decision probability) shall be achieved. This is fulfilled at an early pass or early fail event. Sum up the number of all delays (ns) and the number of bad delays from the beginning of the test and calculate:

<u>ER₁ (including the artificial error at the beginning of the test (Note 1))and</u>

 $\underline{ER_0}$ (excluding the artificial error at the beginning of the test (Note 1)).

 $\underline{If ER_0}$ is on or above the early fail limit, fail the DUT.

If $\overline{\text{ER}_1}$ is on or below the early pass limit, pass the DUT.

Otherwise continue the test

F.6.2.8 Test conditions for RRM delay tes	sts
---	-----

Table F.6.2.8: Test conditions for a single RRM delay tests						
<u>Type of test</u>	<u>Test</u> <u>requirement</u> <u>Delay (s)</u>	<u>Test</u> requirement (ER)	Testlimit(ER) = Test requirement (ER)x TL TL	<u>Target</u> <u>number of</u> <u>bad</u> <u>delays</u>	Prob that good unit will <u>fail</u> = Prob that bad unit will pass [%]	<u>Bad unit</u> <u>factor M</u>
A.4.2 Cell recelection	<u>8</u>	<u>0.1</u>	<u>[1.236]</u>	<u>[154]</u>	[5]	<u>[1.5]</u>
A.4.3.1 UTRAN to GSM cell reselection, scenario 1	<u>27.9</u>	<u>0.1</u>	<u>[1.236]</u>	[154]	[5]	<u>[1.5]</u>
A.4.3. UTRAN to GSM cell reselection, scenario 2	<u>9.6</u>	<u>0.1</u>	<u>[1.236]</u>	[154]	[5]	[1.5]
A.4.4 FDD/TDD Cell reselection	<u>8</u>	<u>0.1</u>	[1.236]	<u>[154]</u>	[5]	[1.5]
A.5.1 FDD/FDD Soft handover	<u>50+10*KC</u> +100*OC ms	<u>0.1</u>	<u>[1.236]</u>	<u>[154]</u>	[5]	[<u>1.5]</u>
A.5.2 FDD FDD Hard Handover <u>A.5.2.1</u> Handover to intra frequency <u>cell</u>	<u>70 ms</u>	<u>0.1</u>	[1.236]	[154]	[5]	[1.5]
<u>A.5.2.2.</u> <u>Handover to</u> <u>interfrequency</u> <u>cell</u>	<u>100ms</u>	<u>0.1</u>	<u>[1.236]</u>	[154]	[5]	[1.5]

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F.6.2.9 Practical Use (informative)

See figure F.6.2.9:

See ingate TricitionThe early fail limit represents formula (1) in F.6.2.5The range of validity is $[ne \ge 5]$ to [ne = 154]The early pass limit represents the formula (2) in F.6.2.5The range of validity is ne=1 to [ne = 154]. See note

1. The intersection co-ordinates of both curves are : target number of bad delays ne = [154] and test limit TL = [1.236].

A typical delay test, calculated form the number of samples and errors (F.6.2.2) using experimental method (1) or (2) (see F.6.2.4.2. calculation assumptions) runs along the yellow trajectory. With an good delay the trajectory goes down vertically. With a bad delay it jumps up right. The tester checks if the ER test intersects the early fail or early pass limits.



Figure F.6.2.9

- Note 1:At the beginning of the test, an artificial bad delay is introduced. This ensures that an ideal DUTmeets the valid range of the early pass limit. In addition this ensures that the complementary
experiment (F.6.2.4.2. bullet point (2)) is applicable as well. For the check against the early fail
limit the artificial bad delay sample, introduced at the beginning of the test, is disregarded.
 - Due to the nature of the test, namely discrete bad delay events, the early fail condition shall not bevalid, when fractional bad delays <1 are used to calculate the early fail limit: Any early fail</td>decision is postponed until number of errors ne $\geq [5]$.

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Other comments:	ж						

F.6 General rules for statistical testing

F.6.1 Statistical testing of receiver BER/BLER performance

F.6.1.1 Error Definition

1) Bit Error Ratio (BER)

The Bit Error Ratio is defined as the ratio of the bits wrongly received to all data bits sent. The bits are the information bits above the convolutional/turbo decoder

2) Block Error Ratio (BLER)

A Block Error Ratio is defined as the ratio of the number of erroneous blocks received to the total number of blocks sent. An erroneous block is defined as a Transport Block, the cyclic redundancy check (CRC) of which is wrong.

F.6.1.2 Test Method

Each test is performed in the following manner:

- a) Setup the required test conditions.
- b) Record the number of samples tested and the number of occurred events (bit error or block error)
- c) Stop the test at a stop criterion which is minimum test time or an early pass or an early fail event.
- d) Once the test is stopped decide according to the pass fail decision rules (subclause F.6.1.7)

F.6.1.3 Test Criteria

The test shall fulfil the following requirements:

- a) good pass fail decision
 - 1) to keep reasonably low the probability (risk) of passing a bad unit for each individual test;
 - 2) to have high probability of passing a good unit for each individual test;
- b) good balance between testtime and statistical significance
 - 3) to perform measurements with a high degree of statistical significance;
 - 4) to keep the test time as low as possible.

F.6.1.4 Calculation assumptions

F.6.1.4.1 Statistical independence

(a) It is assumed, that error events are <u>rare (lim BER BLER \rightarrow 0)</u>independent statistical events. <u>However the memory of</u> the convolutional /turbo coder is terminated after one TTI. Samples and errors are summed up every TTI. So the assumption of independent error events is justified. Due to the memory of the convolutional / turbo coder in the BER tests this is not quite true. Due to lack of information the assumption of independent error events is applied. (b) In the BLER test with fading there is the memory of the multipath fading channel which interferes the statistical independenc<u>ey</u>. Independent error events are assumed but <u>Aa</u> minimum test time is introduced to average fluctuations of the multipath fading channel. So the assumption of independent error events is justified approximately.

F.6.1.4.2 applied formulas

The formulas, applied to describe the BER BLER test, are primarily based on the following experiments: (1) After having observed a certain number of errors (**ne**) the number of samples are counted to calculate BER BLER. Provisions are made (note 1) such that the complementary experiment is valid as well: (2) After a certain number of samples (**ns**) the number of errors, occurred, are counted to calculate BER BLER.

Experiment (1) stipulates to use the following Chi Square Distribution with degree of freedom ne: 2*dchisq(2*NE,2*ne) for all calculations.

Experiment (2) stipulates to use the Poisson Distribution: dpois(ne,NE) (NE: meanaverage of the distribution)

To determine the early stop conditions, the following inverse cumulative operation is applied: 0.5 * qchisq(D,2*ne). This is applicable for experiment (1) and (2). D: wrong decision risk per test step Note: other inverse cumulative operations are available, however only this is suited for experiment (1) and (2).

F.6.1.4.3 Approximation of the distribution

The test procedure is as follows:

During a running measurement for a UE ns (number of samples) and ne (number of errors) are accumulated and from this the preliminary BER BLER is calculated. Then new samples up to the next error are taken. The entire past and the new samples are basis for the next preliminary BER BLER. Depending on the result at every step, the UE can pass, can fail or must continue the test.

As early pass- and early fail-UEs leave the statistical totality under consideration, the experimental conditions are changed every step resulting in a distribution that is truncated more and more towards the end of the entire test. Such a distribution can not any more be handled analytically. The unchanged distribution is used as an approximation to calculate the early fail and early pass bounds.

F.6.1.5 Definition of good pass fail decision.

This is defined by the probability of wrong decision $\frac{DF}{E}$ at the end of the test. The probability of a correct decision is 1-<u>F</u> $\frac{D}{E}$.

The probability (risk) to fail a good DUT shall be $\leq \leftarrow ED$ according to the following definition: A DUT is failed, accepting a probability of $\leq \leftarrow ED$ that the DUT is still better than the specified error ratio (Test requirement). The probability to pass a bad DUT shall be $\leq \leftarrow ED$ according to the following definition: A DUT is passed, accepting a probability of $\leq \leftarrow ED$ that the DUT is still worse than M times the specified error ratio. (M>=1 is the bad DUT factor). This definitions lead to an early pass and an early fail limit:

Early fail: ber
$$\geq \rightarrow =$$
 berlim_{fail}

$$ber \lim_{fail} (D, ne) = \frac{2 * ne}{qchisq(D, 2 * ne)}$$
(1)
For ne>2[75]

Early pass: ber <a>=-berlimbad_{pass}

$$ber \lim bad_{pass}(D, ne) = \frac{2 * ne * M}{qchisq(1 - D, 2 * ne)}$$
(2)

With

ber (normalized BER, BLER): BER, BLER according to F.6.1.1 divided by Test requirement

D: wrong decision probability for a test step . This is a numerically evaluated fraction of F, the wrong decision probability at the end of the test. see table F.6.1.6.1.TBD

ne: Number of error events

M: bad DUT factor see table <u>F.6.1.6.1.</u>TBD

qchisq: inverse cumulative chi squared distribution

F.6.1.6 Good balance between testtime and statistical significance

Three independent test parameters are introduced into the test and shown in Table F.6.1.6.1. These are the obvious basis of test time and statistical significance. From the first two of them <u>four three</u> dependent test parameters are derived. The third independent test parameter is justified separately.
Independe	ent test para	ameters	De	pendent test parar	neters
Test Parameter	Value	Reference	Test parameter	Value	Reference
Target number of	[200]	Table TBD	Early pass/fail	curves	Subclause F.6.1.5
error events			condition		Figure 6.1.9
Probability of wrong	[0.2%]	Subclause F.6.1.5	Bad DUT factor M	[1.5]	Table 6.1.8
pass/fail decision D	[0.02%]				
			Test limit factor TL	[1.24]	Table 6.1.8
Minimum test time		Table F.6.1.6.2			
Independe	ent test par	<u>ameters</u>	Der	pendent test para	meters
Test Parameter	<u>Value</u>	<u>Reference</u>	Test parameter	Value	<u>Reference</u>
Bad DUT factor M	[1.5]	Table F.6.1.8	Early pass/fail	Curves	Subclause F.6.1.5
			condition		Figure 6.1.9
Final probability of	[0.2%]	Subclause F.6.1.5	Target number of	[345]	Table 6.1.8
wrong pass/fail	[0.02%,		error events		
decision F	note 2]				
			Probability of	[0.0085%]	
			wrong pass/fail	[0.0008% and	
			decision per test	0.008%, note 2]	
			step D		
			Test limit factor	[1.234]	Table 6.1.8
			<u>TL</u>		
Minimum test time		Table F.6.1.6.2			

Table F.6.1.6.1 independent and dependent test parameters

The minimum test time is derived from the following justification:

1) For no propagation conditions and static propagation condition

No early fail calculated from fractional number of errors <1

2) For multipath fading condition

No stop of the test until 990 wavelengths are crossed with the speed given in the fading profile.

3) For birth death propagation conditions

No stop of the test until 200 birth death transitions occur

4) For moving propagation conditions: 628 sec

This is necessary in order to pass all potential critical points in the moving propagation profile 4 times:

Maximum rake window Maximum adjustment speed Intersection of moving taps

Table	F.6.1.6.2	:	minimum	٦	Test time

Fading profile	Minimum test time
Multipath propagation 3 km/h	164 sec
Multipath propagation 50 km/h	9.8 sec
Multipath propagation 120 km/h	4.1 sec
Multipath propagation 250 km/h	2 sec
Birth Death propagation	38.2 sec
Moving propagation	628 sec

In table <u>F.6.1.8</u> the minimum test time is converted in minimum number of samples.

F.6.1.7 Pass fail decision rules

(see note 1)

No decision is allowed before the minimum test time is elapsed.

1) If minimum Test time < time for target number of error events then the following applies: The required confidence level 1-F (= correct decision probability) shall be achieved. This is fulfilled at an early pass or early fail event.

For BER:

For every TTI (Transmit Time Interval) sum up the number of bits (ns) and the number if errors (ne) from the beginning of the test and calculate

BER1 (including the artificial error at the beginning of the test (Note 1))and

<u>BER₀</u> (excluding the artificial error at the beginning of the test (Note 1)).

If BER₀ is above the early fail limit, fail the DUT.

If BER₁ is below the early pass limit, pass the DUT.

Otherwise continue the test

For BLER:

For every block sum up the number of blocks (ns) and the number of erroneous blocks (ne) from the beginning of the test and calculate

BLER1 (including the artificial error at the beginning of the test (Note 1))and

<u>BLER₀</u> (excluding the artificial error at the beginning of the test (Note 1)).

If \underline{BLER}_1 is below the early pass limit, pass the DUT. If \underline{BLER}_0 is above the early fail limit, fail the DUT.

Otherwise continue the test

<u>2</u>) If the minimum test time \geq time for target error events, then the test runs for the minimum test time and the decision is done by comparing the result with the test limit.

For BER:

For every TTI (Transmit Time Interval) sum up the number of bits (ns) and the number if errors (ne) from the beginning of the test and calculate BER_0

For BLER:

For every block sum up the number of blocks (ns) and the number of erroneous blocks (ne) from the beginning of the test and calculate $BLER_0$

<u>If $BER_0/BLER_0$ is above the test limit, fail the DUT.</u> <u>If $BER_0/BLER_0$ is on or below the test limit, pass the DUT.</u>

F.6.1.8 Test conditions for BER, BLER tests

TBD

	Table I	F.6.1.8: Test c	onditions fo	r a single BER	BLER tests	
Type of test (BER)	<u>Test</u> <u>requirement</u> (BER/BLER)	<u>Test limit</u> (<u>BER/BLER)</u> <u>= Test</u> requirement (<u>BER/BLER)</u> <u>x TL</u> <u>TL</u>	<u>Target</u> <u>number of</u> <u>error</u> <u>events</u> (<u>time)</u>	<u>Minimum</u> <u>number of</u> <u>samples</u>	Prob that good unit will <u>fail</u> Prob that bad unit will pass [%]	Bad unit BER/BLE R factor M
Reference Sensitivity Level	<u>0.001</u>	[1.234]	[<u>345]</u> (<u>22.9s)</u>	Note 1	[0.2]	[1.5]
Maximum Input Level	0.001	[1.234]	[<u>345]</u> (22.9s)	Note 1	[0.2]	[1.5]
<u>Adjacent</u> <u>Channel</u> <u>Selectivity</u>	<u>0.001</u>	<u>[1.234]</u>	[<u>345]</u> (22.9s)	<u>Note 1</u>	[0.2]	[<u>1.5]</u>
Blocking Characteristics Pass condition Note 2	<u>0.001</u>	[1.251]	[<u>403]</u> (<u>26.4s)</u>	<u>Note 1</u>	[0.2]	[<u>1.5]</u>
Blocking Characteristics Fail condition Note 2	<u>0.001</u>	[1.251]	[<u>403]</u> (<u>26.4s)</u>	<u>Note 1</u>	[0.02]	[<u>1.5]</u>
<u>Spurious</u> Response	0.001	[1.234]	[<u>345]</u> (22.9s)	Note 1	[0.2]	[1.5]
Intermodulation Characteristics	<u>0.001</u>	[1.234]	[<u>345]</u> (22.9s)	Note 1	[0.2]	[1.5]
	•	•	· · · · · · · · · · · · · · · · · · ·			•

Table F.6.1.8: Test conditions for a single BER/BLER tests

	Table	F.6.1.8-2: Te	<u>st conditi</u>	ons for BLER test	<u>s</u>		
<u>Type of test</u> (<u>BLER</u>)	Information Bit rate	<u>Test</u> <u>requirement</u> (BER/BLER)	Test limit (BER/B LER)= Test require <u>ment</u> (BER/B LER)x TL	Target number of error events (time)	<u>Minimum</u> <u>number of</u> <u>samples</u>	Prob that bad unit will pass = Prob that good unit will fail [%]	Bad unit BER/BL ER factor M
Demodulation in Static Propagation conditions	<u>12.2</u> <u>64</u> <u>144</u> <u>384</u>	0.01 0.1 0.01 0.1 0.01 0.1 0.01	<u>TL</u> [1.234]	[345] (559.16s) (55.92s) (559.16s) (55.92s) (559.16s) (27.96s) (279.58s)	<u>Note1</u>	[0.2]	[1.5]
Demodulation of DCH in Multi-path Fading Propagation conditions							
<u>3km/h</u> (<u>Case 1, Case 2,</u> <u>Case 4)</u>	<u>12.2</u> <u>64</u> <u>144</u> <u>384</u>	0.01 0.1 0.01 0.1 0.01 0.01 0.01	[1.234]	[345] (559.16s) (55.92s) (559.16s) (55.92s) (55.92s) (559.16s) (27.96s) (279.58s)	[8200] [8200] [8200] [8200] [8200] [16400] [16400]	[0.2]	[1.5]
<u>120 km/h</u> (Case3)	<u>12.2</u> <u>64</u> <u>144</u> <u>384</u>	0.01 0.1 0.01 0.1 0.1 0.01 0.1 0.01	[1.234]	[345] (559.16s) (559.2s) (559.16s) (559.2s) (559.16s) (559.16s) (27.96s) (279.58s)	[205] [205] [205] [205] [205] [410] [410]	[0.2]	[1.5]
<u>250 km/h</u> (Case 6)	<u>12.2</u> <u>64</u> <u>144</u> <u>384</u>	0.01 0.1 0.01 0.1 0.1 0.01 0.1 0.01	[1.234]	[345] (559.16s) (55.92s) (55.92s) (55.92s) (55.92s) (559.16s) (27.96s) (279.58s)	[100] [100] [100] [100] [100] [200] [200]	[0.2]	[1.5]
Demodulation of DCH in Moving Propagation conditions	<u>12.2</u> <u>64</u>	<u>0.01</u> <u>0.01</u>	[1.234]	[<u>345]</u> (<u>559.16)</u>	[<u>31400]</u> [<u>31400]</u>	[<u>0.2]</u>	[1.5]
Demodulation of DCH in Birth-Death Propagation conditions	<u>12.2</u> <u>64</u>	<u>0.01</u> <u>0.01</u>	[1.234]	[<u>345]</u> (<u>559.16s)</u> (<u>559.16s)</u>	<u>[1910]</u> [1910]	<u>[0.2]</u>	[1.5]
Demodulation of DCH in Base Station Transmit diversity modes (3 km/h, case1)	<u>12.2</u>	<u>0.01</u>	[1.234]	[<u>345]</u> (<u>559.16s)</u>	[8200]	[0.2]	<u>[1.5]</u>

Demodulation of DCH			[1.234]	[345]		[0.2]	[1.5]
in closed loop			1	10.001		10.001	1
transmit diversity							
mode $(3 \text{ km/h} \text{ case1})$							
Mode 1	12.2	0.01		(550,16c)	[8200]		
	12.2	0.01		<u>(333.103)</u>	102001		
Mode 2	12.2	0.01		(559,16s)	[8200]		
Demodulation of DCH			[1 234]	[345]	[8200]	[0 2]	[1.5]
in Site Selection	12.2	0.01	[1.201]	(559.16)	102001	[0.2]	11.01
Diversity	12.2	0.01		1000.107			
Transmission Power							
Control mode			14.00.41	10.151		[0, 0]	5 4 F 7
Demodulation of DCH			[1.234]	[345]		0.2	1.5
in Inter-Cell Soft	<u>12.2</u>	<u>0.01</u>		<u>(559.16s)</u>	205		
<u>Handover</u>	<u>64</u>	<u>0.1</u>		<u>(55.92s)</u>	[205]		
<u>(120 km/h, case3)</u>		<u>0.01</u>		<u>(559.16s)</u>	[205]		
	144	0.1		(55.92s)	[205]		
		0.01		(559.16s)	[205]		
	384	0.1		(27.96s)	410		
		0.01		(279.58s)	[410]		
Combining of TPC				Not applicable			
commands from radio							
links of different radio							
Deven a set set in the				Mat any Bashla			
Power control in the				Not applicable			
downlink, constant							
BLER target							
Power control in the				Not applicable			
downlink, initial							
<u>convergence</u>							
Power control in the				Not applicable			
downlink, wind up							
effects							
Downlink compressed				Not applicable			
mode				<u></u>			
Blind transport format							
detection				[345]			
	Static		[1 22/]			[0 2]	[1 5]
	<u>3 3 10 2</u>	$\frac{DLEN}{10^{-2}}$ 10^{-4}	[1.234]	550.160.022min	Note 1	0.2	1.5
	7.05	$\frac{10}{10^{-2}}$ 10^{-4}		559.105 932min	Note 1		
	<u>7.95</u>	$\frac{10}{10^{-2}}$ $\frac{10}{10^{-4}}$		<u>559.165 932min</u>	Note 1		
	<u>1.95</u>	<u>10 10 ¹</u>		<u>559.165 932min</u>	<u>Note 1</u>		
	Multipath	2 - 1					
	<u>12.2</u>	<u>10⁻² 10⁻⁴</u>		<u>559.16s 932min</u>	[205]		
	<u>7.95</u>	10^{-2} 10^{-4}		<u>559.16s 932min</u>	[205]		
	<u>1.98</u>	<u>10⁻² 10⁻⁴</u>		559.16s 932min	[205]		

F.6.1.9 Practical Use (informative)

TBD

See figure F.6.1.9:

The early fail limit represents formula (1) in F.6.1.5 The range of validity is $[ne \ge 7, \ge 8 \text{ in case of blocking test}]$ to [ne = 345]

The early pass limit represents the formula (2) in F.6.1.5 The range of validity is ne=1 to [ne = 345]. See note 1 The intersection co-ordinates of both curves are : number of errors ne = [345] and test limit TL = [1.234]. The range of validity for TL is ne>345.

A typical BER BLER test, calculated form the number of samples and errors (F.6.1.2.(b)) using experimental method (1) or (2) (see F.6.1.4. calculation assumptions) runs along the yellow trajectory. With an errorless sample the trajectory goes down vertically. With an erroneous sample it jumps up right. The tester checks if the BER BLER test intersects the early fail or early pass limits. The real time processing can be reduced by the following actions:

<u>BLER₀</u> (excluding the artificial error at the beginning of the test (Note 1)). is calculated only in case of an error <u>event.</u>

<u>BER₀ (excluding the artificial error at the beginning of the test (Note 1)). is calculated only in case of an error event within a TTL</u>

So the early fail limit cannot be missed by errorless samples.

The check against the early pass limit may be done by transforming formula (2) in F.6.1.5 such that the tester checks against a Limit-Number-of-samples (NL(ne)) depending on the current number of errors (including the artificial error at the beginning of the test (Note 1))

Early pass if

 $NL(ne) \ge \frac{qchisq(1-D,2*ne)}{2*TR*M}$

TR: test requirement (0.001)



Figure F.6.1.9

Note 1: At the beginning of the test, an artificial error is introduced. This ensures that an ideal DUT meets the valid range of the early pass limit. In addition this ensures that the complementary experiment (F.6.1.4. bullet point (2)) is applicable as well.

For the check against the early fail limit the artificial erroneous sample, introduced at the beginning of the test, is disregarded.

Due to the nature of the test, namely discrete error events, the early fail condition shall not be valid, whenfractional errors <1 are used to calculate the early fail limit: Any early fail decision is postponed until</td>number of errors ne \geq [7]. In the blocking test any early fail decision is postponed until number of errorsne \geq [8].



The blocking test contains approx. 12750 single BER tests. A DUT on the limit will fail approx. 25 to 26 times due to statistical reasons (wrong decision probability at the end of the test F= [0.2]%). 24 fails are allowed in the blocking test but they are reserved for spurious responses. This shall be solved by the following rule:
 All passes (based on F=[0.2]%) are accepted, including the wrong decisions due to statistical reasons.
 An early fail limit based on F=[0.02%] instead of [0.2%] is established, that ensures that wrong decisions due to statistical reasons are reduced to 2 to 3.
 These asymmetric test conditions ensure that a DUT on the test limit consumes hardly more test time for a blocking test than in the symmetric case and on the other hand discriminates sufficiently between statistical fails and spurious response cases.

F.6.2 Statistical testing of RRM delay performance

Delay tests in clause 8.2 shall be repeated [50] times in order to determine the required success ratio

NOTE: A statistical approach needs to be developed. The number of repetitions required for the test will target towards a good compromise between test time and wrong decision risk.

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F.6.1.10 Dual limit BLER tests

This annex is applicable for subclause 7.8.1 Power control in the downlink constant BLER target and subclause 7.9 Downlink compressed mode. In this tests the BLER shall stay between two limits



F.6.1.10.1. Description of the parameters for dual limit BLER tests

(refer figure F.6.1.10)

The origin

1 (black horizontal line in the centre): this is the normalised origin BLER

The assymptotes

1.3 (red horizontal line): this is the specified upper limit of the range (BLER +30%) (upper test requirement) 0.7(blue horizontal line): this is the specified lower limit of the range (BLER-30%)(lower test requirement) 1.3*M (black horizontal line): this is M times the specified upper limit of the range (Bad DUT BLER) 0.7/M (brown horizontal line): this is 1/M times the specified lower limit. (Bad DUT BLER)

The pass/fail limits

 Fail high (bold red curve):

 Definition: A momentary BLER value above this curve is with high probability above the specified upper limit:

 BLER +30%.

 Verdict: Above: Fail due to bad BLER

 Below: continue

 It approaches towards 1.3(red).

 Validity range 7< errors <345.</td>

 Formula:

fail_high(ne, D) := $2 \cdot \frac{\text{ne} \cdot 1.3}{\text{qchisq}(D, 2 \cdot \text{ne})}$

 Fail low (bold blue curve) :

 Definition: A momentary BLER value below this curve is with high probability below the specified lower limit:

 BLER -30%).

 Verdict: Above: continue

 Below: Fail due to too good BLER

 It approaches towards 0.7(blue).

 Validity range 1≤ errors <343.</td>

 Formula:

fail_low(ne, D) := $2 \cdot \frac{\text{ne} \cdot 0.7}{\text{qchisq}(1 - D, 2 \cdot \text{ne})}$

 Pass high (bold black curve):

 Definition: a momentary BLER value on and below this curve is with high probability below M times the specified upper limit.

 Verdict: Above: continue

 Below: pass for ne ≥ 29

 continue for ne < 29</td>

 It approaches 1.3*M(black).

 Validity range 1≤ errors <345.</td>

 Formula:

pass_high (ne, D) := $2 \cdot \frac{\text{ne}}{\text{qchisq}(1 - D, 2 \cdot \text{ne})} \cdot M \cdot 1.3$

Pass_low (bold brown curve): Definition: a momentary BLER value on and above this curve is with high probability above 1/M times the specified lower limit of the range. Verdict: Above: pass for ne ≥ 29, continue for ne < 29</td> Below: continue It approaches 0.7/M(brown). Validity range 7< errors <343.</td>

pass_low (ne, D) :=
$$2 \cdot \frac{\text{ne} \cdot \frac{0.7}{M}}{\text{gchisg}(D, 2 \cdot \text{ne})}$$

Legende formulas: D: wrong decision risk per test step: 0.000085 M: bad DUT factor: 1.5 ne: number of errors qchisq: inverse cumulative chi square function

Upper test limit (boarder between pink and green)1.3*1.234 = 1.6 Validity range: 345 ≤ errors. Verdict: Above: fail due to bad BLER Below: pass

Lower test limit (boarder between green and orange) 0.7/1.234 = 0.567Validity range: $343 \le \text{errors}$ Verdict: Above: pass Below: fail due to too good BLER

The intersection co-ordinates:

Fail high (bold red curve) and Pass high (bold black curve):Upper target number of errors (345) and upper test limit: 1.3* 1.234

Fail low (bold blue curve) and Pass high (bold black curve):Lower target number of errors (343) and lower test limit: 0.7 / 1.234

Pass high (bold black curve) and Pass low (bold brown curve) Minimum number of errors (29) and optimum normalised BLER (1.049)

The ranges:

Range(pink): in this range the measurement can be stopped and the DUT is failed due to too high BLER

Range (orange): in this range the measurement can be stopped and the DUT is failed due to too low BLER

Range (yellow): in this range the measurement is undecided and must be continued.

Range (green): in this range the measurement can be stopped and the DUT is passed. No final BLER result is achieved.

F.6.1.10.2. Pass fail decision rules

No decision is allowed before the minimum test time (Table F.6.1.6.2) has elapsed 1) If minimum Test time < time for target number of error events then the following applies: The required confidence level 1-F (= correct decision probability, Table F.6.1.6.2) shall be achieved. This is fulfilled at fail high pass_high pass low f<u>ail low</u> For every block sum up the number of blocks (ns) and the number of erroneous blocks (ne) from the beginning of the test and calculate BLER₁ (including the artificial error at the beginning of the test (Note 1, F.6.1.9))and BLER₀ (excluding the artificial error at the beginning of the test (Note 1, F.6.1.9)). If BLER₀ is above *fail_high*, fail the test due to too bad BLER If BLER₁ is below fail low, fail the test due to too good BLER If $BLER_0$ is on or below *fail high* and if $BLER_1$ is above *pass high*, continue the test If $BLER_0$ is below pass low and if $BLER_1$ is above or on fail low, continue the test If $BLER_1$ is below or on *pass high* and if $BLER_0$ is on or above *pass high*, pass the test 2) If the minimum test time \geq time for target error events, then the test runs for the minimum test time and the decision is done by comparing the result with the upper and lower test limit. If BLER₀ is above the upper test limit, fail the DUT due to too bad BLER If BLER₁ is below the lower test limit, fail the DUT due to too good BLER If BLER₀ is on or below the upper test limit and if BLER₁ is on or above the lower test limit, pass the DUT

F.6.1.10.3. Test conditions for dual limit BLER tests

<u>Type of test (BLER)</u>	<u>Data rate,</u> <u>Propagation</u> <u>condition</u>	<u>Test</u> <u>requirement</u> (BLER)	<u>Test limit =</u> <u>Test</u> <u>requirement</u> <u>* TL</u> <u>TL</u>	<u>Target</u> <u>number of</u> <u>error</u> <u>events</u> (<u>time)</u>	<u>Minimum</u> <u>number of</u> <u>samples</u>	Prob that a good unit will fail = prob that a bad unit will pass: F[%]	<u>Bad unit</u> <u>factor</u> <u>M</u>
Power control in the downlink, constant BLER target	<u>12.2 kbit/s,</u> <u>3km/h</u> (case4)	<u>0.01±30%</u>	<u>Upper TL:</u> <u>1.3*1.234</u> <u>Lower TL</u> <u>0.7/1.234</u>	<u>Upper: 345</u> (<u>431.25s)</u> Lower 343 (<u>1191s)</u>	<u>8200</u>	<u>0.2</u>	<u>Upper:</u> <u>1.5</u> <u>Lower</u> <u>1/1.5</u>
Downlink compressed mode	<u>12.2kbit/s,</u> <u>3km/h</u> (<u>case 2)</u>	<u>0.01±30%</u>	<u>Upper TL:</u> 1.3*1.234 <u>Lower TL</u> 0.7/1.234	<u>Upper: 345</u> (431.25s) Lower 343 (1191s)	<u>8200</u>	<u>0.2</u>	<u>Upper:</u> <u>1.5</u> <u>Lower</u> <u>1/1.5</u>

Table F.6.1.10.3 Test conditions for dual limit BLER tests

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** 34.121 CR 228 ** rev - ** Current version: 3.10.0 ** 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 ** Radio Access Network Core Network Title: ** Correction of test method: Out-of-synchronisation handling of output power Source: ** T1/RF Work item code: ** - Date: ** 7/11/2002 Category: ** F Release: ** R99 Use one of the following categories: Use one of the following releases: F (correction) A (corresponds to a correction in an earlier release) R96 (Release 1997) B (addition of feature), R97 (Release 1997) C (functional modification) R98 (Release 1997) D (editional modification) R98 (Release 6) Rel-6 (Release 6) Reason for change: ** In the test specified in 34.121 subclause 5.4.4.4 for Out-of-synchronisation handling of output power, T313 and N313 should be set so that the Radio Link Failure criterion is not triggered during the test. 34.121 refers to 34.108 to define the generic call setup procedure which in turm defines the used SIB1. Now 3
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 Title: % Correction of test method: Out-of-synchronisation handling of output power Source: % T1/RF Work item code: % - Date: % 7/11/2002 Category: % F Release: % R99 Use one of the following categories: Use one of the following releases: F (correction) R97 (Release 1996) B (addition of feature) R99 C (functional modification) R99 Detailed explanations of the above categories can be found in 3GPP TR 21.900. Rel-6 (Release 5) Reason for change: % In the test specified in 34.121 subclause 5.4.4.4 for Out-of-synchronisation handling of output power , T313 and N313 should be set so that the Radio Link Failure criterion is not triggered during the test. 34.121 refers to 34.108 to define the generic call setup procedure which in turn defines the used SIB1. Now 34.108-3.9.0 (Section 6.1.0b) says that for 'Contents of System Informatio Block type 1 (supported PLMN type is GSM-MAP)' the timers are: - T313 Not Present (3 seconds: default value) - N313 Not Present (20: default value) -N313 Not Present (20: default value)
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With these values, the Radio Link Failure criterion is triggered latest between points C and D. This is due to the fact that the DPCCH quality criterion for out-or sync is fulfilled and thus, CPHY-Out-of-Sync-IND primitive is reported to higher layers as specified in 25.214. However, as the power of DPCCH and DPDCH and defined to be equal, between the time instants A and F, there is a large probab that the CRC criteria for out-of-sync is fulfilled. Thus, T313 and N313 should be set to their maximum values to prevent triggering the Radio Link Failure Criterio during the test.
Summary of change: # Exceptions for default values (defined in TS34.108 subclause 6.1.0b) of timers T313 and N313 are specified in 34.121 subclause 5.4.4.4 Consequences if # Radio Link Failure criterion is triggered during the test, and thus, the correct

Clauses affected: Other specs affected:	% 5.4.4 % X % X Other core specifications % X Test specifications X O&M Specifications
Other comments:	*

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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 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.

5.4.4 Out-of-synchronisation handling of output power

5.4.4.1 Definition and applicability

The UE shall monitor the DPCCH quality in order to detect a loss of the signal on Layer 1, as specified in TS 25.214 [5]. The thresholds Q_{out} and Q_{in} specify at what DPCCH quality levels the UE shall shut its power off and when it shall turn its power on respectively. The thresholds are not defined explicitly, but are defined by the conditions under which the UE shall shut its transmitter off and turn it on, as stated in this clause.

The DPCCH quality shall be monitored in the UE and compared to the thresholds Q_{out} and Q_{in} for the purpose of monitoring synchronization. The threshold Q_{out} should correspond to a level of DPCCH quality where no reliable detection of the TPC commands transmitted on the downlink DPCCH can be made. This can be at a TPC command error ratio level of e.g. 30%. The threshold Q_{in} should correspond to a level of DPCCH quality where detection of the TPC commands transmitted on the downlink DPCCH is significantly more reliable than at Q_{out} . This can be at a TPC command error ratio level of e.g. 20%.

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

5.4.4.2 Minimum Requirements

When the UE estimates the DPCCH quality over the last 160 ms period to be worse than a threshold Q_{out} , the UE shall shut its transmitter off within 40 ms. The UE shall not turn its transmitter on again until the DPCCH quality exceeds an acceptable level Q_{in} . When the UE estimates the DPCCH quality over the last 160 ms period to be better than a threshold Q_{in} , the UE shall again turn its transmitter on within 40 ms.

The UE transmitter shall be considered "off" if the transmitted power is below the level defined in subclause 6.5.1 (Transmit off power). Otherwise the transmitter shall be considered as "on".

The normative reference for this requirement is TS 25.101 [1] clause 6.4.4.1.

The quality levels at the thresholds Q_{out} and Q_{in} correspond to different signal levels depending on the downlink conditions DCH parameters. For the conditions in table 5.4.4.1, a signal with the quality at the level Q_{out} can be generated by a DPCCH_Ec/Ior ratio of -25 dB, and a signal with Q_{in} by a DPCCH_Ec/Ior ratio of -21 dB. The DL reference measurement channel (12.2) kbps specified in subclause C.3.1 and with static propagation conditions. The downlink physical channels, other than those specified in table 5.4.4.1, are as specified in table E.3.3 of Annex E.

Parameter	Value	Unit
\hat{I}_{or}/I_{oc}	-1	dB
I _{oc}	-60	dBm / 3,84 MHz
$\frac{DPDCH_E_c}{I_{or}}$	See Figure 5.4.4.1: Before point A –16,6 After point A Not defined ¹⁾	dB
$\frac{DPCCH_E_c}{I_{or}}$	See table 5.4.4.2	dB
Information Data Rate	12,2	kbps

Table 5.4.4.1: DCH parameters for test of Out-of-synch handling test case

Table 5.4.4.2: Minimum Requirements for DPCCH_Ec/lor leve	els
---	-----

Clause from figure 5.4.4.1	DPCCH_Ec/lor	Unit
Before A	-16,6	dB
A to B	-22,0	dB
B to D	-28,0	dB
D to E	-24,0	dB
After E	-18,0	dB

Figure 5.4.4.1 shows an example scenario where the DPCCH_Ec/Ior ratio varies from a level where the DPCH is demodulated under normal conditions, down to a level below Q_{out} where the UE shall shut its power off and then back up to a level above Q_{in} where the UE shall turn the power back on.



Figure 5.4.4.1: Test case for out-of-synch handling in the UE.

In this test case, the requirements for the UE are that:

- 1. The UE shall not shut its transmitter off before point B.
- 2. The UE shall shut its transmitter off before point C, which is Toff = 200 ms after point B.
- 3. The UE shall not turn its transmitter on between points C and E.
- 4. The UE shall turn its transmitter on before point F, which is Ton = 200 ms after point E.

The reference for this test case is TS 25.101 [1] clause 6.4.4.2.

5.4.4.3 Test purpose

To verify that the UE monitors the DPCCH quality and turns its transmitter on or off according to DPCCH level diagram specified in figure 5.4.4.1.

NOTE: DPDCH_Ec/I_{or} after point A is not defined in table 5.4.4.1. However it is assumed that DPDCH and DPCCH power level are same on DL 12,2 kbps reference measurement channel for testing. (PO1, PO2, and PO3 are zero.)

5.4.4.4 Method of test

5.4.4.4.1 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.1.

2) 2) A call is set up according to the Generic call setup procedure, with the following exception for information elements in System Information Block type 1 specified in TS 34.108 [3] subclause 6.1.0b.

Table 5.4.4.2A System Information Block type 1 message:

Information Element	Value/Remark
UE Timers and constants in connected mode	
<u>- T313</u>	<u>15 seconds</u>
<u>- N313</u>	200

and

<u>3)</u> DCH parameters are set up according to table 5.4.4.1 with DPCCH_Ec/Ior ratio level at -16,6 dB. The other RF parameters are set up according to clause E.3.3.

34)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.

5.4.4.4.2 Procedure

- 1) The SS sends continuously Up power control commands to the UE until the UE transmitter power reach maximum level.
- 2) The SS controls the DPCCH_Ec/Ior ratio level according to clause 'A to B' as defined in table 5.4.4.3. The SS monitors the UE transmitted power for 5 seconds and verifies that the UE transmitter is not switched off during this time.
- 3) The SS controls the DPCCH_Ec/Ior ratio level according to clause 'B to D' as defined in table 5.4.4.3. The SS waits 200 ms and then verifies that the UE transmitter has been switched off.
- 4) The SS monitors the UE transmitted power for 5 seconds and verifies that the UE transmitter is not switched on during this time.
- 5) The SS controls the DPCCH_Ec/Ior ratio level according to clause 'D to E' as defined in table 5.4.4.3. The SS monitors the UE transmitted power for 5 s and verifies that the UE transmitter is not switched on during this time.
- 6) The SS controls the DPCCH_Ec/Ior ratio level according to clause 'After E' as defined in table 5.4.4.3. The SS waits 200 ms and then verifies that the UE transmitter has been switched on.

5.4.4.5 Test requirements

Clause from figure 5.4.4.1	DPCCH_Ec/lor	Unit
Before A	-16,6	dB
A to B	-21,6	dB
B to D	-28,4	dB
D to E	-24,4	dB
After E	-17,6	dB

Table 5.4.4.3: Test Requirements for DPCCH_Ec/lor levels

To pass the test, steps 1 through 6 of the procedure in clause 5.4.4.4.2 must be fulfilled.

The UE transmitter off criterion and its tolerances is defined in clause 5.5.1 (Transmit off power).

The UE transmitter on criterion and its tolerances is defined in clause 5.4.3 (Minimum Output Power). The UE transmitter is considered to be on if the UE transmitted power is higher than minimum output power.

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 Test Requirement has been relaxed by the Test Tolerance is given in clause F.4.

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Tdoc **#***T1-020756*

ж	34.121 CR	<mark>229</mark>	ж rev	-	ж	Current vers	^{ion:} 3.1	<mark>0.0</mark> ^ж
For <mark>HELP</mark> on l	ising this form, se	e bottom of this	s page or l	look a	at th	e pop-up text	over the a	₭ symbols.
Proposed change affects: UICC apps # ME X Radio Access Network Core Network								
Title:	Correction of ta	able and subcla	use refere	ences	;			
Source: ೫	T1/RF							
Work item code: भ	-					<i>Date:</i>	7/11/200	02
Category: #	F					Release: ೫	R99	
	Use <u>one</u> of the fo F (correction A (correspond) B (addition C (functional) D (editorial) Detailed explanate be found in 3GPF	llowing categories n) nds to a correctio of feature), nl modification of t modification) ions of the above <u>TR 21.900</u> .	s: In in an ear feature) categories	lier re s can	lease	Use <u>one</u> of 2 R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	the followir (GSM Pha (Release 1 (Release 1 (Release 1 (Release 4 (Release 5 (Release 5	ng releases: se 2) 1996) 1997) 1998) 1999) 4) 5)
Reason for change	e: ೫ Incorrect ta	<mark>ables or subclau</mark>	ises are re	eferre	<mark>d in</mark>	the test cases	6	

Summary of change: ₩	 Subclause 6.7.4.1, initial condition, step 2): Table 6.7.4 is referred twice. The first reference is replaced by table 6.7.3. Table 8.3.3.1: References to 25.101 and 25.102 Annex A are replaced by references to 34.121 and 34.122 Annex C. "34.121" and "34.122" are specifically written in order to make clear, if Annex C of 34.121 or 34.122 is referred. Table 8.4.1.3: The references to Annex A are incorrect. These are replaced by reference to Annex C. Table 8.7.3.C.4.1: References to 25.101 Annex A are replaced by references to Annex C. 					
Consequences if # not approved:	34.121 contains incorrect references and way to refer Annexes is not aligned within 34.121.					
Clauses affected: %	6.7, 8.3.3, 8.4.1.2, 8.7.3C					
Other specs भ affected:	Y N X Other core specifications # X Test specifications # X O&M Specifications •					
Other comments: ೫						

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

6.7 Intermodulation Characteristics

6.7.1 Definition and applicability

Third and higher order mixing of the two interfering RF signals can produce an interfering signal in the band of the desired channel. Intermodulation response rejection is a measure of the capability of the receiver to receive a wanted signal on its assigned channel frequency in the presence of two or more interfering signals which have a specific frequency relationship to the wanted signal.

The requirements and this test apply to all types of UTRA for the FDD UE. The test parameters in tables 6.7.2 and 6.7.4 applies to the FDD UE supporting Band II and Band III.

6.7.2 Minimum Requirements

The BER shall not exceed 0,001 for the parameters specified in table 6.7.1 and in table 6.7.2.

The normative reference for this requirement is TS 25.101 [23] clause 7.8.1 and clause 7.8.2.

NOTE: I_{ouw2} (modulated) 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.

Table 6.7.1: Test	parameters for	Intermodulation	Characteristics

Parameter	Level		Unit		
DPCH_Ec	<refsens> +3 dB</refsens>		<refsens> +3 dB</refsens>		dBm / 3,84 MHz
Îor	<refî<sub>or> +3 dB</refî<sub>		<refî<sub>or> +3 dB</refî<sub>		dBm / 3,84 MHz
I _{ouw1} (CW)	-46		dBm		
I _{ouw2} mean power (modulated)	-46		dBm		
F _{uw1} (offset)	10 -10		MHz		
F _{uw2} (offset)	20 -20		MHz		
UE transmitted mean power	20 (for Power class 3)		dBm		
	18 (for Pow	ver class 4)			

Table 6.7.2: Test parameters	for narrow band	intermodulation	characteristics
------------------------------	-----------------	-----------------	-----------------

Parameter	Unit	Band II		Band III	
DPCH_Ec	dBm/3.84 MHz	<refsens>+ 10 dB</refsens>		REFSENS>+ 10 dB <refsens>+ 10 d</refsens>	
Î _{or}	dBm/3.84 MHz	<refî<sub>or> + 10 dB</refî<sub>		[<refî<sub>or> +10 dB</refî<sub>	
I _{ouw1} (CW)	dBm	-44		-43	
I _{ouw2} (GMSK)	dBm	-44		-43	
F _{uw1} (offset)	MHz	3.5	-3.5	3.6	-3.6
F _{uw2} (offset)	MHz	5.9 -5.9		6.0	-6.0
UE transmitted mean	dBm	20 (for Power class 3)			
power	ubiii	18 (for Power class 4)			

NOTE: I_{ouw2} (GMSK) is an interfering signal as defined in TS 45.004. It is a GMSK modulated carrier following the structure of the GSM signals, but with all modulating bits (including the midamble period) derived directly from a random or pseudo random data stream.

6.7.3 Test purpose

To verify that the UE BER does not exceed 0,001 for the parameters specified in table 6.7.1 and in table 6.7.2.

The lack of the intermodulation response rejection ability decreases the coverage area when two or more interfering signals, which have a specific frequency relationship to the wanted signal, exist.

6.7.4 Method of test

6.7.4.1 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.7.
- 2) RF parameters are set up according to table 6.7.4-<u>3</u> and table 6.7.4.
- 3) A call is set up according to the Generic call setup procedure specified in TS 34.108 [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 6.7.2A 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.

6.7.4.2 Procedure

- 1) Set the parameters of the CW generator and interference signal generator as shown in table 6.7.3 and in table 6.7.4.
- Set the power level of UE according to the tables 6.7.3, and table 6.7.4 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.

6.7.5 Test requirements

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

Table 6.7.3: Test parameters for Intermodulation Characteristics

Parameter	Level		Unit
DPCH_Ec	<refsens> +3 dB</refsens>		dBm / 3.84 MHz
Î _{or}	<refî<sub>or> +3 dB</refî<sub>		dBm / 3.84 MHz
I _{ouw1} (CW)	-46		dBm
I _{ouw2} mean power (modulated)	-46		dBm
F _{uw1} (offset)	10 -10		MHz
F _{uw2} (offset)	20 -20		MHz
UE transmitted mean power	20 (for Power class 3)		dBm
	18 (for Pov	ver class 4)	

Parameter	Unit	Band II		Band III			
DPCH_Ec	DdBm/3.84 MHz	<refsens>+ 10 dB</refsens>		<refsens>+ 10 dB <refse< td=""><td><refsen< td=""><td>IS>+ 10 dB</td></refsen<></td></refse<></refsens>		<refsen< td=""><td>IS>+ 10 dB</td></refsen<>	IS>+ 10 dB
Î _{or}	DdBm/3.84 MHz	<refî<sub>or> + 10 dB</refî<sub>		dB [<refî<sub>or> +10 dB</refî<sub>			
I _{ouw1} (CW)	dBm	-44		-43			
I _{ouw2} (GMSK)	dBm	-44		-44 -43			
F _{uw1} (offset)	MHz	3.5	-3.5	3.6	-3.6		
F _{uw2} (offset)	MHz	5.9 -5.9		6.0	-6.0		
UE transmitted mean	dBm 20 (for Power class 3)						
power	ubiii	18 (for Pov		ver class 4)			

Table 6.7.4: Test parameters for narrow band intermodulation characteristics

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.

8.3.3 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 [FFS]%.

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.

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UTRAN shall send a PHYSICAL CHANNEL RECONFIGURATION with activation time at beginning of T3 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

Parameter		Unit	Value	Comment
DCH pai	rameters		DL Reference Measurement	As specified in TS 25.10134.121 section
			Channel 12.2 kbps	clause CA.3.1 and in TS 25.102
				section34.122 clause CA.2.2
Power	Control		On	
Target qual DT	ity value on CH	BLER	0.01	
Compress	sed mode		A.22 set 3	As specified in TS_25.101 section34.121
				<u>clause</u> <u>C</u> A.5
Initial	Active cell		Cell 1	FDD cell
conditions	Neighbour cell		Cell 2	TDD cell
Final	Active cell		Cell 2	TDD cell
condition				
Ó		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	dBm	-75	Applicable for Event 2C
frequ	iency			
Filter co	efficient		0	
Monitored cell list size			6 FDD neighbours on Channel 1	
			6 TDD neighbours on Channel 2	
T _{SI}		S	1.28	The value shall be used for all cells in the test
T1		S	5	
Т	2	S	15	
Т	3	S	5	

Parameter	Unit	Cell 1			
		T1, T2	Т3		
UTRA RF Channel		Channel 1			
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			
OCNS_Ec/lor	dB	Note 2			
\hat{I}_{or}/I_{oc}	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					

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

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Table 8.3.3.3: Cell Specific	parameters for Ha	indover to TDD cell (cell 2)
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Parameter	Unit	Cell 2								
DL timeslot number			0			2			8	
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel			Channel 2							
Number						Chan				
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		0 Note 2		-3.12			
\hat{I}_{or}/I_{oc}	dB	-Inf 6		-Inf	-Inf 6		-Inf	6	6	
P-CCPCH RSCP	dBm	-Inf -67		n.a.			n.a.			
dBm										
I_{oc}	3,84					-7	0			
	MHz									
Propagation Condition						AW	GN			

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.

8.3.3.4.1 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] 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 at T3

- 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 [TBD] times

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 A of 34.123-1 [21], with the following exceptions:

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

Information Element/Group name	Value/Remark
Message Type (10.2.17)	Value/Remark
UF 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)	Wearry
-Measurement Report Transfer Mode	AMRIC
-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 nequency measurement
-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)	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	Type 1
-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
	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
- I hreshold used frequency	Not Present
-W used frequency	Not Present
-Hysteresis	0 dB
- Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	Depart calls within manitaned act on non
-CHOICE reported cell	Report cells within monitored set on non-
Maximum number of reported calls per reported rest	used frequency
-iviaximum number or reported cells per reported non-used	'
Decomptore required for each per used frequency	1
-raiameters required for each non-used frequency	1 -80 dBm
	-00 ubiii 1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
	I NOL I IGGENIL

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Cinbering mode info	Not Present
	ALTS Not Propert
	Not Present
	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 mode	TDD
-LIARECN (Nt)	Same LIARECN as used for cell 2
	33 dBm
-CHOICE channel requirement	Unlink DPCH info
-Oplink DFCH init (10.3.0.00)	
-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)	
-CHOICE TDD option	3.84 Mcps TDD
-Timeslot number	10
- UL Timeslot Interference	-90 dBm
-CHOICE mode	
-Uplink timing advance control (10.3.6.96)	
	Disabled
	1
-OL Target SIR	
Activation Time	То
-Activation Time	
-Duration	Infinite
	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)	
-CHOICE TDD option	3.84 Mcps
-CHOICE Burst Type	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE TOD option	3.84 Mone
First timeslat code list	
Channelisation code	
	0/ I No more timeolete
-UHUICE more timesiots	INO MORE TIMESIOTS

Information Element	Value/Remark
Downlink radio resources	
-CHOICE mode	TDD
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-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 svnc 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	ТЗ
-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 Burst Type	Type 1
- Midamble Allocation Mode	Default
- Midamble configuration burst type 1 and 3	16
- Midamble shift	Not present
- CHOICE TDD option	3.84 Mcps
- First timeslot channelisation codes (10.3.6.17)	
- 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% with a confidence level of [FFS]% of the cases.

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 ($T_{UE-E-ESTABLISH-REQ}$) 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.

 $T_{UE-RE-ESTABLISH-REQ}$ 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}
```

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

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.

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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.

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference measurement channel 12.2 kbps	As specified in clause AC.3.1 and AC.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 8.4.1.3 General test parameters for RRC re-establishment delay, Test 2

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

Parameter	Unit	Cell 1		Cel	12
		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		-15	
DCH_Ec/lor	dB	-17	-Infinity	Not app	licable
OCNS_Ec/lor	dB	-1.049	-0.941	-0.9)41
\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			A	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.

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

- 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 [TBD] times
- 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% with a confidence level of [FFS]% of the cases.

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.

8.7.3C 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.

Parameter		Accuracy [dB]		
		PUEMAX 24dBm	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	

Table 8.7.3C.2.1 UE transmitted power absolute accuracy

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, the UE L1 shall respond with a value of -50 dBm.

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.

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Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement	As specified in TS 25.101
		Channel 12.2 kbps	sectionclause AC.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	

Table 8.7.3C.4.1: General test parameters for UE transmitted power

Table 8.7.3C.4.2: Cell Specific parameters for UE transmitted power

Parameter	Unit	Cell 1		
CPICH_Ec/lor	dB	-10		
PCCPCH_Ec/lor	dB	-12		
SCH_Ec/lor	dB	-12		
PICH_Ec/lor	dB	-15		
DPCH_Ec/lor	dB	Note1		
OCNS		Note 2		
\hat{I}_{or}/I_{oc}	dB	0		
I _{oc}	dBm/3.84 MHz	-70		
CPICH_Ec/lo	dB	-13		
Propagation				
Condition		AWGIN		
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 are				

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 [100] 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-11.

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] and Annex A of 34.123-1 [21] 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
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-CHOICE Measurement type	UE Internal measurement
-UE Internal measurement quantity	
-CHOICE mode	FDD
-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	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
DDCH compressed mode status info	Not Brocont
-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	
 Intra-frequency measured results 	
- Cell measured results	
- Cell Identity	Not present
 SFN-SFN observed time difference 	Checked that this IE is absent
 Cell synchronisation information 	Checked that this IE is absent
- Primary CPICH info	
 Primary scrambling code 	150
- 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	
 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
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
-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.

Deservation	11	Mean Power range [dB]				
Parameter	Unit	PUEMAX 24dBm	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.

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Other comments:	ж <mark>N</mark> c	ote: the cha	nges in this	CR shou	<mark>ld be ap</mark>	plied after othe	er CRs from T1/RF#27	7							

8 Requirements for support of RRM

- 8.1 General
- 8.2 Idle Mode Tasks
- 8.2.1 Cell Selection

Void.

- 8.2.2 Cell Re-Selection
- 8.2.2.1 Scenario 1: Single carrier case

8.2.2.1.1 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 RRC CONNECTION REQUEST message to perform a Location Updating procedure (MM) or Routing Area Updating procedure (GMM) on the new cell.

The requirements and this test apply to the FDD UE.

8.2.2.1.2 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 [FFS]%.

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

TevaluateFDD	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 4.2.2.2 and A.4.2.1.

8.2.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.2.1.4 Method of test

8.2.2.1.4.1 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.

This scenario implies the presence of 1 carrier and 6 cells as given in tables 8.2.2.1.1 and 8.2.2.1.2. 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. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.1.1: Scenario 1: General test parameters for Cell Re-selection single carrier multi-cell case

	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 1 - CN common GSM-MAP NAS system information		-	00 80(H) → Cell 1 00 81(H) → Cell 2	This identity should be set as different value from the neigbour cell so that a Location Updating procedure(MM) or a Routing Area Updating procedure(GMM) is performed when UE selects more suitable cell in idle state.				
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	length	S	1,28	The value shall be used for all cells in the test.				
Τ1		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.				

Parameter	Unit	C	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 Number		Chan	nel 1	Channel 1		Channe	Channel 1		1	Chanr	iel 1	Chann	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		-15			
OCNS_Ec/lor	dB	-0,94	1	-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			
I _{oc}	dBm / 3,84 MHz	-70)												
CPICH_Ec/lo	dB	-16	-13	-13	-13 -16			-23		-23		-23			
Propagation Condition							AWG	ЗN							
Cell_selection_and_ reselection_quality_ measure		CPIC	H E _c /N ₀	CPICH	E _c /N ₀	CPICH E ₂ /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICF	ΗE₀/N₀		
Qqualmin	dB	-	20	-2	20	-20		-20		-2	20	-20			
Qrxlevmin	dBm	- ^	115	-1	15	-115	5	-115		-1	15	-115			
UE_TXPWR_MAX_ RACH	dB	:	21	2	21	21		21		2	1	2	21		
Qoffset2 _{s, n}	dB	C1, C1, C1, C1,	C2: 0 C3: 0 C4: 0 C5: 0	C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0		C3, C C3, C C3, C C3, C C3, C	1: 0 2: 0 4: 0 5: 0	C4, C C4, C C4, C C4, C	1: 0 2: 0 3: 0 5: 0	C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0			
Obvet2	dB		0		<u>00.0</u>). U	04, 0	5. 0	0, 06:0		0,0	0		
Tracolaction			0		0	0		0		0		0			
Sintrasparch	dB	not	sent	not	sent	0 not se	nt	0 not se	nt	U not cont		U not sont			
UnitasealUl	uD	10	John	not	JOIN	101 30	7110	101 30	7111	not sent		HOL	not sent		

 Table 8.2.2.1.2:
 Scenario 1:
 Test parameters for Cell re-selection single carrier multi cell, initial conditions

8.2.2.1.4.2 Procedure

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.2.2.1.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) The SS and the UE shall perform a first registration procedure on cell2.
- 4) 15 s after step3 has completed, the parameters are changed to that as described for T2 in table 8.2.2.1.3.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 1 within 8 s from the beginning of time period T2 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) on cell1.
- 6) After 15 s from the beginning of time period T2, the parameters are changed to that as described for T1 in table 8.2.2.1.3.
- 7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s from the beginning of time period T1 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure(MM) or a Routing Area Updating procedure (GMM) on cell2.
- 8) After 15 s from the beginning of time period T1, the parameters are changed to that as described for T2.
- 9) Repeat step 5) to 8) [TBD] times.
- 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.

8.2.2.1.5 Test requirements

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

Parameter	Unit	C	ell 1	Ce	ell 2	C	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		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		
CPICH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-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	-0.928	-0.953	-0.953	-0.928	-0.94	1	-0.941		-0.941	1	-0.941		
\hat{I}_{or}/I_{oc}	dB	7	10.57	10.57	7	0.27		0.27		0.27		0.27		
I _{oc}	dBm / 3.84 MHz	-70)											
CPICH_Ec/lo	dB	-16.4	-12.7	-12.7 -16.4		-23.1		-23.1		-23.1		-23.1		
Propagation Condition							AW	GN						
Cell_selection_and_ reselection_quality_ measure		CPIC	H E₀/N₀	CPICH	E _c /N ₀	CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH	ΗE₀/N₀	
Qqualmin	dB	-	20	-2	20	-	20	-2	0	-	20	-2	20	
Qrxlevmin	dBm	-1	115	-1	15	-1	115	-11	5	-1	15	-1	15	
UE_TXPWR_MAX_ RACH	dB		21	2	21		21	2	ļ		21	2	21	
Qoffset2 _{s, n}	dB	C1, C1, C1, 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		: 0 C4, C1: 0 : 0 C4, C2: 0 : 0 C4, C3: 0 : 0 C4, C5: 0 : 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		0	0		0		0		
Treselection	S		0		0		0	0	0		0		0	
Sintrasearch	dB	not	sent	not	sent	not	not sent		not sent		not sent		not sent	

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.

8.2.2.2 Scenario 2: Multi carrier case

8.2.2.2.1 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 RRC CONNECTION REQUEST message to perform a Location Updating procedure(MM) or Routing Area Updating procedure (GMM) on the new cell.

The requirements and this test apply to the FDD UE.

8.2.2.2.2 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 [FFS]%.

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

TevaluateFDD	See table 4.1 in TS 25.133 [2] clause 4.2.2.
Tsi	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 4.2.2.3 and A.4.2.2.

8.2.2.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.2.2.4 Method of test

8.2.2.2.4.1 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.

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.2.2.2.1 and 8.2.2.2.2. 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. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.2.1: Scenario 2: General test parameters for Cell Re-selection in multi carrier case

F	Parameter	Unit	Value	Comment
Initial	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4,	
			Cell5, Cell6	
Final	Active cell		Cell1	
condition				
SYSTEM INFORMATION			00 80(H) → Cell 1	This identity should be set as different value from
BLOCK TY	PE 1	-	00 81(H) → Cell 2	the neigbour cell so that a Location Updating
- CN comm	on GSM-MAP NAS			procedure (MM) or a Routing Area Updating
system information				procedure (GMM) is performed when UE selects
				more suitable cell in idle state.
Access Ser	vice Class (ASC#0)			Selected so that no additional delay is caused by
- Persistend	ce value	-	1	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	30	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.

Parameter	Unit	Cel	11	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		Chan	ool 1	Chan	ool 2	Chapr	1 امر	Cha	nnel 1	Chan	nol 2	Cha	nnol 2	
Number		Charmer				Ondriner		Onanner i		Ghan		Cha		
CPICH_Ec/lor	dB	-1	0	-1	0	-1	0	-	10	-1	-10		10	
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2	-	12	-1	2	-	12	
SCH_Ec/lor	dB	-1	2	-1	2	-1	2	-	12	-1	2	-12		
PICH_Ec/lor	dB	-1	5	-1	5	-1	5	-	15	-1	5	-	15	
OCNS_Ec/lor	dB	-0.9	41	-0.9	41	-0.9	41	-0.	941	-0.9	41	-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	
I _{oc}	dBm / 3.84 MHz		-70											
CPICH_Ec/lo	dB	-16	-13	-13 -16		-20)	-20		-20		-20		
Propagation														
Condition							~~~	GN						
Cell_selection_and_														
reselection_quality_		CPICH	E _c /N ₀	CPICH	E _c /N ₀	CPICH	CPICH E ₀ /N ₀ CPICH E ₀ /N ₀		H E₀/N₀	CPICH E _c /N ₀		CPICH E _c /N ₀		
measure														
Qqualmin	dB	-20	0	-20	0	-20)	-	20	-20		-20		
Qrxlevmin	dBm	-11	5	-11	5	-11	5	-1	15	-11	5	-1	15	
UE_TXPWR_MAX_ RACH	dB	21	I	21	1	21		2	21	2	1	2	21	
		C1, C	2: 0	C2, C	:1:0	C3, C	1:0	C4,	C1: 0	C5, C	21:0	C6,	C1: 0	
		C1, C	3: 0	C2, C	3: 0	C3, C	2: 0	C4,	C2: 0	C5, C	2:0	C6,	C2: 0	
Qoffset2 _{s, n}	dB	C1, C	:4: 0	C2, C	:4: 0	C3, C	4: 0	C4,	C3: 0	C5, C	3: 0	C6,	C3: 0	
		C1, C	5: 0	C2, C	5: 0	C3, C	5: 0	C4, C5: 0		C5, C	24: 0	C6,	C4: 0	
		C1, C	6: 0	C2, C	C2, C6: 0		6: 0	C4,	C6: 0	C5, C	6: 0	C6,	C5: 0	
Qhyst2	dB	0		0		0			0	0			0	
Treselection	S	0		0		0			0	0		0		
Sintrasearch	dB	not s	ent	not s	ent	not s	ent	not	sent	not sent		not sent		
Sintersearch	dB	not s	ent	not s	ent	not s	not sent		sent	not s	not sent		sent	

 Table 8.2.2.2.2:
 Scenario 2: Test parameters for Cell re-selection multi carrier multi cell, initial contitions

8.2.2.2.4.2 Procedures

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.2.2.2.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) The SS and the UE shall perform a first location registration procedure on cell2.
- 4) 30 s after step3 has completed, the parameters are changed to that as described for T2 in table 8.2.2.2.3.
- 5) The SS waits for random access request from the UE. If the UE responds on cell 1 within 8 s from the beginning of time period T2 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) on cell1.
- 6) After another 15 s from the beginning of time period T2, the parameters are changed to that as described for T1 in table 8.2.2.2.3.
- 7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s from the beginning of time period T1 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) on cell2.
- 8) After 15 s from the beginning of time period T1, the parameters are changed as described for T2.
- 9) Repeat step 5) to 8) [TBD] times.
- 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.

8.2.2.2.5 Test requirements

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

Table 8.2.2.2.3: Scenario 2: Test parameters for Cell re-selection multi carrier multi cell, test
requirements

Parameter	Unit	Ce	1	Ce	ll 2	Ce	II 3	Ce	II 4	Cell 5		Ce	ll 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Char	nel 1	Channel 2		Channel 1		Char	nel 1	Channel 2		Channel 2		
CPICH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-	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	-1	15	-^	15	-1	15	
OCNS_Ec/lor	dB	-0.928	-0.953	-0.953	-0.928	-0.9	941	-0.9	941	-0.9	941	-0.9	941	
\hat{I}_{or}/I_{oc}	dB	-3.7	2.5	2.5	-3.7	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4	
I _{oc}	dBm / 3.84 MHz		70									•	•	
CPICH_Ec/lo	dB	-16.3	-12.8	-12.8	-16.3	-19.9	-20.2	-19.9	-20.2	-20.2	-19.9	-20.2	-19.9	
Propagation Condition							AW	/GN						
Cell_selection_and_ reselection_quality_ measure		CPICH	I E₀/N₀	CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E₀/N₀		CPICH E₀/N₀		
Qqualmin	dB	-2	20	-2	20	-2	20	-2	20	-2	20	-2	20	
Qrxlevmin	dBm	-1	15	-1	15	-1	15	-1	15	-1	15	-1	15	
UE_TXPWR_MAX_ RACH	dB	2	1	2	1	2	1	2	1	2	1	2	1	
Qoffset2 _{s, n}	dB	C1, 0 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, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, 0 C4, 0 C4, 0 C4, 0 C4, 0 C4, 0	C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C5: 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	()	()	()	()	
Treselection	S	()	()	()	()	()	()	
Sintrasearch	dB	not	sent	not	sent	not	sent	not	sent	not sent		not sent		
Sintersearch	dB	not	sent	not	sent	not	sent	not	sent	not	not sent		sent	

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 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 [FFS]%.

NOTE: The cell re-selection delay can be expressed as: $4 \text{ * } T_{\text{measureGSM}} + T_{\text{BCCH}}$, 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. 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: Cell re-selection UTRAN to GSM cell case (cell 1), 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 E _c /I	No
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: Cell re-selection UTRAN to GSM cell case (cell 2), initial conditions

Parameter	Unit	Cell 2 (GSM)	
Farameter	Onit	T1	T2
Absolute RF Channel Number		ARFCN ²	
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) [TBD] times.

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 2)	dB	-12.8	-16.5
CPICH_RSCP (Note2)	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	Cell 2 (GSM)	
Farameter	Unit	T1	T2
Absolute RF Channel Number		ARFCN 1	I
RXLEV (Note 1)	dBm	-90	-75
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	3	3

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 2: 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 [FFS]%.

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 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 [FFS]%.

NOTE: The cell re-selection delay can be expressed as: Max ($3*T_{measureFDD}$, $T_{measureGSM}$ +DRX cycle length) + T_{BCCH} , where:

$T_{\text{measureFDD}}$	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 length	1.28s see Table A.4.7.A in TS 25.133 [2] clause A.4.3.2.
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 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. 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: Cell re-selection UTRAN to GSM cell case (cell 1), 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			/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: Cell re-selection UTRAN to GSM cell case (cell 2), initial conditions

Parameter	Unit	Cell 2	(GSM)
		T1	T2
Absolute RF Channel			
Number		ARFONT	
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) [TBD] times.

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 (Note2)	dB	-9.9	-19.9
CPICH_RSCP (Note2)	dBm	-70.6	-100.4
Propagation Condition		AWGN	
Cell_selection_and_ reselection_quality_measure		CPICH Ec	/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	

Parameter	Unit	Cell 2	(GSM)
		T1	T2
Absolute RF Channel		ARECN 1	
Number			
RXLEV (Note1)	dBm	-80	-80
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

Table 8.2.3.2.5: Scenario 2: Cell re-selection UTRAN to GSM cell case (cell 2), test requirements

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 2: 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 [FFS]%.

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.

8.2.4 FDD/TDD Cell Re-selection

8.2.4.1 Definition and applicability

The cell re-selection delay is defined as the time from the cell quality levels change to the moment when this change makes the UE reselect a better ranked cell, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on the new cell.

This test is for the case where the UE camps on an FDD cell and reselects to a TDD cell.

The requirements and this test apply to UEs supporting both FDD and TDD.

8.2.4.2 Minimum requirement

The cell re-selection delay shall be less than 8 s with a DRX cycle length of 1,28 s. This shall be verified in more than [FFS]% of the cases with a confidence level of [FFS]%.

The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2.4 and A.4.4.

8.2.4.3 Test purpose

To verify that the UE meets the minimum requirement for the case where the UE camps on an FDD cell and reselects to a TDD cell.

8.2.4.4 Method of test

8.2.4.4.1 Initial conditions

This scenario implies the presence of UTRA FDD and 1 UTRA TDD cell as given in tables 8.2.4.1, 8.2.4.2 and 8.2.4.3. The maximum repetition period of the relevant system information blocks that need to be received by the UE to camp on a cell shall be 1280 ms.

Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.4.1: General test parameters for FDD/TDD Cell Re-selection

Parameter		Unit	Value	Comment
Initial	Active cell		Cell1	FDD cell
condition	Neighbour cells		Cell2	TDD cell
Final condition	Active cell		Cell2	TDD cell
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 length		S	1.28	The value shall be used for all cells in the test.
T1		S	15	Cell 1 better ranked than cell 2
	T2	S	15	Cell2 better ranked than cell 1

Table 8.2.4.2: Cell 1 specific test parameters for FDD/TDD Cell Re-selection

Parameter	Unit	Ce	Cell 1			
		T1	T2			
UTRA RF Channel Number		Char	nel 1			
CPICH_Ec/lor	dB	-1	0			
P-CCPCH_Ec/lor	dB	-1	2			
SCH_Ec/lor	dB	-1	2			
PICH_Ec/lor	dB	-1	5			
OCNS_Ec/lor	dB	-0.9	941			
\hat{I}_{or}/I_{oc}	dB	9	3			
I _{oc}	dBm / 3.84 MHz	-7	70			
CPICH_RSCP	dBm	-71	-77			
Propagation Condition		AW	'GN			
Cell_selection_and_reselection_quality_mea		CPICH	_Ec/No			
sure						
Qrxlevmin	dBm	-1	15			
Qoffset1 _{s,n}	dB	()			
Qhyst1	dB	()			
Treselection	S	()			
Sintrasearch	dB	not	sent			
Sintersearch	dB	not	sent			

Parameter	Unit	Cell 2							
DL timeslot number		C)	8					
		T1	T2	T1	T2				
UTRA RF Channel Number			Char	nnel 2					
P-CCPCH_Ec/lor	dB		3	n.	a.				
PICH_Ec/lor	dB	n.	a.	-	3				
SCH_Ec/lor	dB		-	.9					
SCH_t _{offset}	dB		1	0					
OCNS_Ec/lor	dB		-3	.12					
\hat{I}_{or}/I_{oc}	dB	-4	2	-4	2				
P-CCPCH RSCP	dBm	-77	-71	n.a.	n.a.				
I _{oc}	dBm/ 3,84 MHz		-1	70					
Propagation Condition			AW	/GN					
Qrxlevmin	dBm		-1	03					
Qoffset2 _{s,n}	dB			0					
Qhyst2	dB			0					
Treselection	S			0					
Sintrasearch	dB	not sent							
Sintersearch	dB		not	sent					
Note that the transmit energy p duration when the SCH is preser	er PN chip f	or the SCH slot.	l is averag	ed over the	e 256 chip				

Table 8.2.4.3: Cell 2 specific test parameters for FDD/TDD Cell Re-selection

8.2.4.4.2 Procedures

- a) The SS activates cell 1 and cell 2 with T1 defined parameters and monitors them for random access requests from the UE.
- b) The UE is switched on.
- c) The SS waits for random access requests from the UE.
- d) After 15 s, the parameters are changed as described for T2.
- e) The SS waits for random access request from the UE.
- f) After another 15 s, the parameters are changed as described for T1.
- g) The SS waits for random access requests from the UE.
- h) Repeat step d) to g) [TBD] times.

8.2.4.5 Test requirements

- 1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).
- 2) In step e), the UE shall respond on cell 2 within 8 s in more than [FFS]% of the cases.
- 3) In step g), the UE shall respond on 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.

8.3.5 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.

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

$$T_{\text{reselection, intra}} = T_{\text{Measurement}_{\text{Period Intra}}} + T_{\text{IU}} + 20 + T_{\text{SI}} + T_{\text{RA}}$$
 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 8.3.5.1.4. 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				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

Parameter	Unit	Ce	ll 1	Cel	12	Cel	13	Ce	II 4	Ce	ell 5	Cel	16
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Char	nnel 1	Chan	nel 1	Chan	nel 1	Char	nel 1	Chai	nnel 1	Chan	nel 1
CPICH_Ec/lor	dB	-	10	-1	0	-1	0	-10		-10		-10	
PCCPCH_Ec/lor	dB	-	12	-12		-1	2	-	12	-12		-12	
SCH_Ec/lor	dB	-	12	-1	2	-1	2		12	-	12	-1	2
PICH_Ec/lor	dB	-	15	-1	5	-1	5		15	-	15	-1	5
S-CCPCH_Ec/lor	dB	-'	12	-1	2	-1	2	-1	2	-	12	-1	2
OCNS_Ec/lor	dB	-1.:	295	-1.2	95	-1.2	95	-1.2	295	-1.	295	-1.2	295
\hat{I}_{or}/I_{oc}	dB	7.3	10.27	10.27	7.3	0.2	27	0.	27	0.	.27	0.2	27
I _{oc}	dBm/3.84 MHz						-7	0					
CPICH_Ec/lo	dB	-16	-13	-13 -16		-2	3	-23		-23		-2	23
Propagation Condition			AWGN										
Cell_selection_and_ reselection_quality_ measure		CPICH	HE _c /N ₀	CPICH E _c /N ₀		CPI E _c /I	CPICH E _c /N ₀ CPICH E _c /N ₀		IE _c /N ₀	CPICH E _c /N ₀		CPI Ed	CH N₀
Qqualmin	dB	-2	20	-2	0	-2	0	-2	-20		-20		0
Qrxlevmin	dBm	-1	15	-11	5	-11	5	-1	15	-115		-115	
UE_TXPWR_ MAX_RACH	dBm	2	21	2'	1	2′	I	2	21		21	21	
Qoffset 2 _{s, n}	dB	C1, C1, C1, 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, C C3, C C3, C	C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C1: 0 C2: 0 C3: 0 C5: 0 C6: 0	C5, C5, C5, C5, C5,	C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C1: 0 C2: 0 C3: 0 C4: 0 C5: 0
Qhyst	dB	(0	0		0		()		0	0)
Treselection	S	(0	0		0		()		0	0)
Sintrasearch	dB	not	sent	not s	sent	not s	ent	not	sent	not	sent	not s	sent
IE "FACH Measurement occasion info"		not	sent	not s	sent	not s	not sent		not sent		not sent		sent

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

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 CELL_FACH.
- 4) 15 seconds after step3 has completed, the SS shall switch the power settings from T1 to T2 in table 8.3.5.1.5.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 1 within 1.7 s from the beginning of time period T2 then the number of successful tests is increased by one. And if the SS receive a CELL UPDATE message from the UE, the SS shall transmit a CELL UPDATE CONFIRM.
- 6) After 15 s from the beginning of time period T2, the parameters are changed to that as described for T1 in table 8.3.5.1.5.
- 7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 1.7 s from the beginning of time period T1 then the number of successful tests is increased by one. And if the SS receive a CELL UPDATE message from the UE, the SS shall transmit a CELL UPDATE CONFIRM.
- 8) After 15 s from the beginning of time period T1, the parameters are changed to that as described for T2.
- 9) Repeat step 5) to 8) [TBD] times.

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).

8.3.5.1.5 Test requirements

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

Parameter	Unit	Ce	ll 1	Ce	2	Ce	3	Cell 4	Cell 5	Cell 6		
		T1	T2	T1	T2	T1	T2	T1 T2	T1 T2	T1 T2		
UTRA RF Channel		Char	nal 1	Chan	nel 1	Chan	nol 1	Channel 1	Channel 1	Channel 1		
Number		Chai		Chan		Chan		Channel 1	Charmer I	Charmer I		
CPICH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-10		-10	-10	-10		
PCCPCH_Ec/lor	dB	-	12	-1	2	-1	2	-12	-12	-12		
SCH_Ec/lor	dB	-	12	-1	2	-1	2	-12	-12	-12		
PICH_Ec/lor	dB	-	15	-1	5	-1	5	-15	-15	-15		
S-CCPCH_Ec/lor	dB	-*	12	-1	2	-1	2	-12	-12	-12		
OCNS_Ec/lor	dB	-1.282	-1.309	-1.309	1.282	-1.2	295	-1.295	-1.295	-1.295		
\hat{I}_{or}/I_{oc}	dB	7	10.57	10.57	7	0.2	27	0.27	0.27	0.27		
I _{oc}	dBm/3.84 MHz						-7	0				
CPICH_Ec/lo	dB	-16.4	-12.7	-12.7	-16.4	-23	3.1	-23.1	-23.1	-23.1		
Propagation Condition			AWGN									
Cell_selection_and_ reselection_quality_ measure		CPICH	H E₀/N₀	CPICH E _c /N ₀		CPI E√	CH N₀	CPICH E _c /N ₀	CPICH E _c /N	CPICH E _c /N ₀		
Qqualmin	dB	-2	20	-2	0	-2	0	-20	-20	-20		
Qrxlevmin	dBm	-1	15	-11	15	-11	15	-115	-115	-115		
UE_TXPWR_ MAX_RACH	dBm	2	21	2	1	2	1	21	21	21		
		C1, 0	C2: 0	C2, C	C1: 0	C3, C	C1: 0	C4, C1: 0	C5, C1: 0	C6, C1: 0		
		C1,	C3: 0	C2, C	C3: 0	C3, C	C2: 0	C4, C2: 0	C5, C2: 0	C6, C2: 0		
Qoffset 2 _{s, n}	dB	C1, 0	C4: 0	C2, C	C4: 0	C3, C	C4: 0	C4, C3: 0	C5, C3: 0	C6, C3: 0		
		C1,	C5: 0	C2, C	C5: 0	C3, C	25: 0	C4, C5: 0	C5, C4: 0	C6, C4: 0		
		C1, 0	C6: 0	C2, C	C6: 0	C3, C	C6: 0	C4, C6: 0	C5, C6: 0	C6, C5: 0		
Qhyst	dB	(0	C)	C)	0	0	0		
Treselection	S	(0	C)	C)	0	0	0		
Sintrasearch	dB	not	sent	not s	sent	not s	sent	not sent	not sent	not sent		
IE "FACH Measurement occasion info"		not	sent	not s	sent	not s	sent	not sent	not sent	not sent		

Table 8.3.5.1.5: Cell specific test parameters for Cell Re-selection in CELL_FACH

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.

8.3.5.2 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.

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

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

where

T_{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 8.3.5.2.4. 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				

Parameter	Unit	Ce	ell 1	Cell 2		Cel	3	Cell 4		Cell 5		Cell 6		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Chan	nel 1	Chan	Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/lor	dB	-10		-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		
S-CCPCH_Ec/lor	dB	-12		-12		-12		-12		-12		-12		
OCNS_Ec/lor	dB	-1.295	5	-1.29	5	-1.295		-1.295		-1.295		-1.295		
\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	
I _{oc}	dBm/3.8 4 MHz	-70				-						•		
CPICH_Ec/lo	dB	-16	-13	-13	-16	-2	0	-2	20	-2	0	-2	20	
Propagation Condition		AWG	N											
Cell_selection_ and_reselection_ quality_measure		CPICH E _c /N ₀		CPIC E _c /N ₀	CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀	
Qqualmin	dB	-20		-20		-20	-20			-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 C1, C	2: 0 3: 0 4: 0 5: 0 6: 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		0		0		0		0		0		
Treselection	S	0		0		0		0		0		0		
Sintrasearch	dB	not se	ent	not se	ent	not se	nt	not ser	nt	not sent		not se	nt	
Sintersearch	dB	not se	ent	not se	ent	not se	nt	not ser	nt	not sent		not se	nt	
IE "FACH Measurement occasion info"		sent		sent		sent		sent		Sent		sent		
FACH Measurement occasion cycle length coefficient		3		3		3		3	3		3		3	
Inter-frequency FDD measurement indicator		TRUE		TRUE	TRUE		TRUE		TRUE		TRUE		TRUE	
Inter-frequency TDD measurement indicator		FALS	E	FALS	E	FALSE	E	FALSE		FALSE		FALSE	FALSE	

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

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 CELL_FACH.
- 4) 15 seconds after step3 has completed, the SS shall switch the power settings from T1 to T2 in table 8.3.5.2.5.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 1 within 2.0 s from the beginning of time period T2 then the number of successful tests is increased by one. And if the SS receive a CELL UPDATE message from the UE, the SS shall transmit a CELL UPDATE CONFIRM.

- 6) After 15 s from the beginning of time period T2, the parameters are changed to that as described for T1 in table 8.3.5.2.5.
- 7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 2.0 s from the beginning of time period T1 then the number of successful tests is increased by one. And if the SS receive a CELL UPDATE message from the UE, the SS shall transmit a CELL UPDATE CONFIRM message.
- 8) After 15 s from the beginning of time period T1, the parameters are changed to that as described for T2.
- 9) Repeat step 5) to 8) [TBD] times.
- 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).

8.3.5.2.5 Test requirements

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

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

Parameter	Unit	Ce	ll 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	nel 1	Chann	el 2	Chann	el 1	Chan	nel 1	Chan	nel 2	Chanr	nel 2
Number													
CPICH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-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	
S-CCPCH_Ec/lor	dB	-12	1	-12		-12		-12		-12		-12	
OCNS_Ec/lor	dB	1.282	1.309	-1.309 1.282		-1.295		-1.295		-1.295		-1.295	
\hat{I}_{or}/I_{oc}	dB	-3.7	-3.7 2.5		-3.7	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4
I _{oc}	dBm/3.8 4 MHz	-70				-				-		•	
CPICH_Ec/lo	dB	-16.3	-12.8	-12.8	-16.3	-19.9	-20.2	-19.9	-20.2	-20.2	-19.9	-20.2	-19.9
Propagation Condition		AWGN	١										
Cell_selection_ and_reselection_ quality_measure		CPICH	HE _c /N ₀	CPICH	I E _c /N ₀	CPICH	I Ec/No	CPICI	H E _c /N ₀	CPICI	H E _c /N ₀	CPICH	I E₀/N₀
Qqualmin	dB	-20		-20		-20		-20		-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, C2 C1, C3 C1, C4 C1, C4 C1, C4	2: 0 3: 0 4: 0 5: 0 6: 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, C C4, C C4, C C4, C C4, C	1: 0 2: 0 3: 0 5: 0 6: 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	
Qhvst2	dB	0		0	-	0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not se	nt	not se	nt	not sent		not sent		not se	ent	not se	nt
Sintersearch	dB	not se	nt	not ser	nt	not se	nt	not se	ent	not se	ent	not se	nt
IE "FACH Measurement occasion info"		sent		sent		sent	-	sent		Sent		sent	
FACH Measurement occasion cycle length coefficient		3		3		3		3		3		3	
Inter-frequency FDD measurement indicator		TRUE		TRUE		TRUE		TRUE		TRUE		TRUE	
Inter-frequency TDD measurement indicator		FALSE	Ξ	FALSE	1	FALSE		FALSE		FALSE		FALSE	

- 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.
- 8.3.5.3 Cell Reselection to GSM

Void.

- 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 [FFS]%.

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

TevaluateFDD	See table 4.1 in TS 25.133 [2] clause 4.2.2.
Tsi	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.

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 and 8.3.6.1.2. 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	Active cell		Cell1	
condition				
Access Service Class (ASC#0)			Selected so that no additional delay is caused by the	
- Persisten	ce 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	T2 need to be defined so that cell re-selection reaction
				time is taken into account.

Deremeter	l lmit	Ce	ell 1	Ce	12	Cel	13	Ce	II 4	Ce	ell 5	Cell 6		
Parameter	Unit	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Chann	el 1	Channe	el 1	Chann	el 1	Chann	iel 1	Chann	iel 1	Chann	iel 1	
CPICH_Ec/lor	dB	-10		-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		
I _{oc}	dBm/ 3.84MHz	-70												
CPICH_Ec/lo	dB	-16	-13	-13	-16	-23		-23		-23		-23		
Propagation Condition							AW	GN						
Cell_selection_and_ reselection_quality_ measure		CPICH	E _c /N ₀	CPICH	E _c /N ₀	CPICH E _c /N ₀	CPICH E _o /N ₀ CF		IE₀/N₀	CPICH	IE₀/N₀	CPICH E _c /N ₀	1	
Qqualmin	dB	-:	20	-2	0	-2	0	-20		-20		-20		
Qrxlevmin	dBm	-1	15	-11	5	-11	5	-115		-1	15	-115		
UE_TXPWR_ MAX_RACH	dBm	2	21	2	1	2'	1	2	21		21	21		
Qoffset2 _{s, n}	dB	C1, C1, C1, C1, C1, C1,	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	C2, 0 C2, 0 C2, 0 C2, 0 C2, 0 C2, 0	C1: 0 C3: 0 C4: 0 C5: 0 C6: 0	C3, C C3, C C3, C C3, C C3, C	21: 0 22: 0 24: 0 5: 0 25: 0	C4, 0 C4, 0 C4, 0 C4, 0 C4, 0 C4, 0	C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0)1: 0)2: 0)3: 0)4: 0)5: 0	
Qhyst2	dB		0	C		0		()		0	0		
Treselection	S		0	C		0		0		0		0)	
Sintrasearch	dB	not	sent	not s	sent	not s	sent	not	sent	not	sent	not s	sent	

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

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) A RRC connection is set up according the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_PCH state.
- 4) The SS waits for random access requests from the UE on cell 2.
- 5) After 15 s, the parameters are changed as described for T2 in table 8.3.6.1.3.
- 6) The SS waits for random access requests from the UE.
- 7) If the UE responds on cell 1 within 8 s then the number of successful tests is increased by one.
- 8) After another 15 s, the parameters are changed as described for T1 in table 8.3.6.1.3.
- 9) The SS waits for random access requests from the UE.
- 10) If the UE responds on cell 2 within 8 s then the number of successful tests is increased by one.
- 11)Repeat step 5) to 10) [50] times.

8.3.6.1.5 Test requirements

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

Parameter	Unit	Ce	ell 1	Ce	ell 2	C	ell 3	Cel	14	Ce	ell 5	Ce	ell 6
		T1	T2	T1	T2	T1 T2		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Chanr	nel 1	Channe	el 1	Chan	nel 1	Channe	el 1	Chanr	nel 1	Chanr	nel 1
CPICH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-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	-0,928	0.953	-0,953	-0.928	-0.94	1	-0.941		-0.941		-0.941	
\hat{I}_{or}/I_{oc}	dB	7	0,57	10,57	7	0,27		0,27		0,27		0,27	
I _{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/lo	dB	-16.4	-12.7	-12.7	-16.4	-23.1		-23.1		-23.1		-23.1	
Propagation Condition							AW	GN					
Cell_selection_and_ reselection_quality_ measure		CPICH	H E _c /N ₀	CPICH	E _c /N ₀	CPICH E _c /N ₀		CPICH	E _c /N ₀	CPICI	H E₀/N₀	CPICI	Η E _c /N₀
Qqualmin	dB	-2	20	-2	20	-	20	-20		-20		-20	
Qrxlevmin	dBm	-1	15	-1	15	-^	15	-11	5	-1	15	-1	15
UE_TXPWR_MAX_ RACH	dB	2	21	2	21		21	2'	1	2	21	2	21
Qoffset2 _{s, n}	dB	C1, C1, C1, C1, C1, C1,	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	C2, C2, C2, C2, C2, C2,	C1: 0 C3: 0 C4: 0 C5: 0 C6: 0	C3, C3, C3, C3, C3, C3,	C1: 0 C2: 0 C4: 0 C5: 0 C6: 0	C4, C C4, C C4, C C4, C C4, C	C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0		C1: 0 C2: 0 C3: 0 C4: 0 C6: 0	C1: 0 C6, 0 C2: 0 C6, 0 C3: 0 C6, 0 C4: 0 C6, 0 C6: 0 C6, 0	
Qhyst2	dB		0		0		0	0			0		0
Treselection	S		0		0		0	0			0	0	
Sintrasearch	dB	not	sent	not	sent	not	sent	not s	ent	not	sent	not	sent

Table 8.3.6.1.3: Test parameters for Cell re-selection single carrier multi cell

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.

8.3.6.2 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 [FFS]%.

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

```
TevaluateFDDSee table 4.1 in TS 25.133 [2] clause 4.2.2.TSIMaximum repetition period of relevant system info blocks that needs to be received by<br/>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.

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 and 8.3.6.2.2. 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 on s Service Class (ASC#0)		Cell1	
Access Sei - Persisten	ndition ccess Service Class (ASC#0) Persistence value CS		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	30	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.

Parameter	Unit	Cell 1 Cell 2		ell 2	Cel	3	Ce	II 4	Cel	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	Chanr	el 1	Channel	2	Chanr	nel 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	-
\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
I _{oc}	dBm/3.8 4 MHz	-70											
CPICH_Ec/lo	dB	-16	-13	-13	-16	-20		-20		-20		-20	
Propagation Condition			AWGN										
Cell_selection_ and_reselection_ quality_measure		CPIC E _c /N ₀	Н	CPIC E _c /N ₀	Н	CPICH E _c /N ₀	ł	CPICH	IE _c /N ₀	CPICH E	∃ _c /N₀	CPICH	H E₀/N₀
Qqualmin	dB	-2	20	-;	20	-2	0	-2	20	-20	0	-2	20
Qrxlevmin	dBm	-1	15	-1	15	-11	5	-1	15	-11	5	-1	15
UE_TXPWR_ MAX_RACH	dBm	2	1		21	2'	1	2	1	21	I	2	21
Qoffset2 _{s, n}	dB	C1, C1, C1, C1, C1, C1,	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	C2, C2, C2, C2, C2, C2,	C1: 0 C3: 0 C4: 0 C5: 0 C6: 0	C3, C C3, C C3, C C3, C C3, C	2: 0 2: 0 4: 0 5: 0 6: 0	C4, 0 C4, 0 C4, 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	21: 0 2: 0 3: 0 24: 0 6: 0	C6, C6, C6, C6, C6,	C1: 0 C2: 0 C3: 0 C4: 0 C5: 0
Qhyst2	dB	-	C		0	0		()	0			0
Treselection	S		0		0	0		()	0			0
Sintrasearch	dB	not	sent	not	sent	not s	ent	not	sent	not s	ent	not	sent
Sintersearch	dB	not	sent	not	sent	not s	ent	not	sent	not s	ent	not	sent

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

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 7.4.2 to place the UE in CELL_PCH state.
- 4) The SS waits for random access requests from the UE on cell 2.
- 5) After 30 s, the parameters are changed as described for T2 in table 8.3.6.2.3.
- 6) The SS waits for random access request from the UE. If the UE responds on cell 1 within 8 s then the number of successful tests is increased by one.
- 7) After another 15 s, the parameters are changed as described for T1 in table 8.3.6.2.3.
- 8) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s then the number of successful tests is increased by one.
- 9) Reduce T1 to 15 s and repeat step 5) to 8) [50] times.
- NOTE: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

8.3.6.2.5 Test requirements

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

	tregs. in neighbour list														
Parameter	Unit	Ce	ll 1	Ce	ell 2	Cel	13	Ce	ell 4	Cel	5	Ce	ell 6		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number		Char	nnel 1	Char	nnel 2	Chan	nel 1	Char	nnel 1	Chan	nel 2	Char	nnel 2		
CPICH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-1	0	-10		-10		-10			
PCCPCH_Ec/lor	dB	-12 -12				-1	2	-	12	-1	-12		12		
SCH_Ec/lor	dB	-'	12	-	12	-1	2	-	12	-1	2	-	12		
PICH_Ec/lor	dB	-'	15	-	15	-1	5	-	15	-1	5	-	15		
OCNS_Ec/lor	dB	-0.928).928 -0.953 -0.953 -0.928			-0.9	41	-0.	941	-0.9	41	-0.	941		
\hat{I}_{or}/I_{oc}	dB	-3.7	2.5	2.5	-3.7	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4		
I _{oc}	dBm / 3.84 MHz		-70												
CPICH_Ec/lo	dB	-16.3 -12.8 -12.8 -16.3		-19.9	-20.2	-19.9	-20.2	-20.2	-19.9	-20.2	-19.9				
Propagation Condition							AW	/GN							
Cell_selection_and_ reselection_quality_ measure		CPICH	H E₀/N₀	CPIC	H E₀/N₀	CPICH E ₀ /N ₀ CPICH E ₀ /N ₀		CPICH E _c /N ₀		CPIC	H E _c /N ₀				
Qqualmin	dB	-2	20	-2	20	-20		-20		-20		-20			
Qrxlevmin	dBm	-1	15	-1	15	-11	5	-1	15	-11	5	-1	15		
UE_TXPWR_MAX_ RACH	dB	2	21	2	21	2′	1	2	21	2'	1	2	21		
Qoffset2 _{s, n}	dB	C1, 0 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 C3, C	C1: 0 C2: 0 C4: 0 C5: 0 C6: 0	C4, C4, C4, C4, C4, C4,	C1: 0 C2: 0 C3: 0 C5: 0 C6: 0	C5, C C5, C C5, C C5, C C5, C	21: 0 22: 0 3: 0 24: 0 6: 0	0 C6, C1 0 C6, C2 0 C6, C2 0 C6, C2 0 C6, C2			
Qhyst2	dB	(0		0	0			0	0			0		
Treselection	S	(0		0	0		0		0		0		0	
Sintrasearch	dB	not	sent	not	sent	not s	sent	not	sent	not sent		not sent			
Sintersearch	dB	not	sent	not	sent	not s	sent	not	sent	not sent		not sent			

Table 8.3.6.2.3: Test parameters for Cell re-selection in CELL_PCH state, multi carrier multi cell, two freqs. in neighbour list

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.

8.3.7 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 [FFS]%.

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

TevaluateFDD	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 and 8.3.7.1.2. 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 I	NFORMATION BLOCK		0000 0000 0000 0001(B)	
TYPE 2		-	(Cell 1)	
- URA iden	tity list		0000 0000 0000 0002(B)	
- URA iden	tity		(Cell 2)	
Access Sei	vice Class (ASC#0)			Selected so that no additional delay is
- Persisten	ce value	-	1	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.

Parameter	Unit	C	ell 1	Ce	ell 2	C	ell 3	Cel	4	C	ell 5	Ce	ell 6
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Chan	nel 1	Channe	el 1	Chan	nel 1	Channe	1	Chan	nel 1	Chann	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		-15	
OCNS_Ec/lor	dB	-0,94	1	-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	
I _{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/lo	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition							AWO	GN					
Cell_selection_and_ reselection_quality_ measure		CPIC	H E₀/N₀	CPICH	E _c /N ₀	CPICH E _c /N ₀		CPICH	E _c /N ₀	CPICI	H E₀/N₀	CPICH	Η E _c /N ₀
Qqualmin	dB	-	·20	-2	20	-	20	-20		-20		-20	
Qrxlevmin	dBm	-	115	-1	15	-1	15	-11	5	-1	15	-1	15
UE_TXPWR_MAX_ RACH	dB		21	2	21	2	21	21			21	21	
Qoffset2 _{s, n}	dB	C1, C1, C1, C1, C1, C1,	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	C2, 0 C2, 0 C2, 0 C2, 0 C2, 0 C2, 0	C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C1: 0 C2: 0 C4: 0 C5: 0 C6: 0	C4, C C4, C C4, C C4, C C4, C C4, C	1: 0 2: 0 3: 0 5: 0 6: 0	C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C6, C6, C6, C6,	C1: 0 C2: 0 C3: 0 C4: 0 C5: 0
Qhyst2	dB		0	(0		0	0			0	0	
Treselection	S		0	(0		0	0		0		0	
Sintrasearch	dB	not	sent	not	sent	not	sent	not s	ent	not	sent	not	sent

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

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 a total of [TBD] successes and failures have been recorded.

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

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 [FFS]% of the cases.

Parameter	Unit	C	ell 1	Ce	ell 2	Cell 3		Cel	4	Ce	ell 5	Cell 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	-10.1	-9.9	-9.9	-10.1	-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	-0.928	-0.953	-0.953	-0.928	-0.94	1	-0.941		-0.941		-0.941					
\hat{I}_{or}/I_{oc}	dB	7	10.57	10.57	7	0.27		0.27		0.27		0.27					
I _{oc}	dBm / 3.84 MHz	-70															
CPICH_Ec/lo	dB	-16.4	-12.7	-12.7	-16.4	-23.1		-23.1		-23.1		-23.1					
Propagation Condition							AW	GN									
Cell_selection_and_ reselection_quality_ measure		CPIC	H E₀/N₀	CPICH	E _c /N ₀	CPICH E ₀ /N ₀		CPICH	E _c /N ₀	CPICI	H E₀/N₀	CPICH	∃ E _c /N₀				
Qqualmin	dB	-	20	-2	20	-	20	-20		-20		-:	20				
Qrxlevmin	dBm	-1	115	-1	15	-1	15	-11	5	-1	15	-1	15				
UE_TXPWR_MAX_ RACH	dB	:	21	2	21		21 21		21		2	21					
Qoffset2 _{s, n}	dB	C1, C1, C1, C1, C1, C1,	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	C2, C2, C2, C2, C2, C2, C2,	C1: 0 C3: 0 C4: 0 C5: 0 C6: 0	C3, C3, C3, C3, C3, C3,	C1: 0 C2: 0 C4: 0 C5: 0 C6: 0	C4, C C4, C C4, C C4, C C4, C	21: 0 22: 0 3: 0 5: 0 6: 0	C5, C5, C5, C5, C5, C5,	C1: 0 C2: 0 C3: 0 C4: 0 C6: 0	C6, C6, C6, C6, C6,	C1: 0 C2: 0 C3: 0 C4: 0 C5: 0				
Qhyst2	dB		0		0		0 0		0		0		0 0		0		0
Treselection	S		0	0			0	0		0			0				
Sintrasearch	dB	not	sent	not	sent	not	not sent		not sent not sent not se		not sent		sent	not	sent		

Table 8.3.7.1.3: Test parameters for Cell re-selection single carrier multi cell

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.

8.3.7.2 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 [FFS]%.

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

TevaluateFDD	See table 4.1 in TS 25.133 [2] clause 4.2.2.
Tsi	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 and 8.3.7.2.2. 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		Unit	Value	Comment
Initial	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Initial condition	Active cell Cell2		Cell1	
SYSTEM I	NFORMATION		0000 0000 0000 0001(B) (Cell 1)	
BLOCK TY	PE 2	-	0000 0000 0000 0002(B) (Cell 2)	
- URA iden	tity list			
- URA iden	tity			
Access Sei	vice Class (ASC#0)		1	Selected so that no additional delay is
- Persisten	ce value	-	1	caused by the random access
				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 8.3.7.2.2: Cell specific test parameters for Cell Re-selection in URA_PCH state, two freq	s. in
neighbour list	

Parameter	Unit	Cel	11	Cel	2	Cell 3		Cell 4		Cell 4 Cell 5		Cell 6					
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2				
UTRA RF Channel Number		Chan	nel 1	Chanr	nel 2	Chanr	nel 1	Channel 1		Channel 2		Cha	nnel 2				
CPICH_Ec/lor	dB	-1	0	-1	0	-1	0	-	10	-10		-	10				
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2	-	12	-1	2	-12					
SCH_Ec/lor	dB	-1	2	-1	2	-1	2	-	12	-1	2	-	12				
PICH_Ec/lor	dB	-1	5	-1	5	-1	5	-	15	-1	5	-	15				
OCNS_Ec/lor	dB	-0.9	41	-0.9	41	-0.9	41	-0.	941	-0.9	41	-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				
I _{oc}	dBm / 3.84 MHz						-	70									
CPICH_Ec/lo	dB	-16	-13	-13	-16	-20)	-	20	-20		-20					
Propagation Condition							AW	/GN									
Cell_selection_and_ reselection_quality_ measure		CPICH	E _c /N ₀	CPICH	E _c /N ₀	CPICH E _c /N ₀ CPIC		Η Ε _σ /Ν ₀	CPICH	E _c /N ₀	CPIC	H E₀/N₀					
Qqualmin	dB	-2	0	-20)	-20		-20		-20		-20					
Qrxlevmin	dBm	-11	5	-11	5	-11	5	-1	15	-115		-115					
UE_TXPWR_MAX_ RACH	dB	2′	1	21		21		2	21	2'	1	2	21				
Qoffset2 _{s, n}	dB	C1, C C1, C C1, C C1, C C1, C	2: 0 3: 0 4: 0 5: 0 6: 0	C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C2, C1: 0 C C2, C3: 0 C C2, C4: 0 C C2, C5: 0 C C2, C6: 0 C		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		0 C3, C1: 0 0 C3, C2: 0 0 C3, C4: 0 0 C3, C5: 0 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C5: 0		C5, C C5, C C5, C C5, C C5, C	2: 0 2: 0 3: 0 4: 0 6: 0	C6, C6, C6, C6, C6,	C1: 0 C2: 0 C3: 0 C4: 0 C5: 0
Qhyst2	dB	0		0		0			0	0			0				
Treselection	S	0		0		0		0		0			0				
Sintrasearch	dB	not sent		not sent		not s	ent	not sent		not	sent	not sent		not	sent		
Sintersearch	dB	not s	sent	not s	not sent		not sent		not sent		not sent		not sent				

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 a total of [TBD] successes and failures have been recorded.

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), alow 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

8.3.7.2.5 Test requirements

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

Table 8.3.7.2.3: Test parameters for Cell re-selection in URA_PCH state, multi carrier multi cell, two
freqs. in neighbour list

Parameter	Unit	Ce	1	Ce	ll 2	Cell 3		Ce	Cell 4 Cell 5		II 5	Cell 6			
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		
UTRA RF Channel Number		Char	nel 1	Channel 2		Char	nel 1	Channel 1		Channel 2		Channel 2			
CPICH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-*	10	- '	10	-10		- '	10		
PCCPCH_Ec/lor	dB	-'	12	- '	12	-'	12	-'	12	-12		- '	12		
SCH_Ec/lor	dB	-'	12	-1	12	- ^	12	-1	12	-1	12	-12			
PICH_Ec/lor	dB	-'	15	-1	15	-*	15	-*	15	-1	15	- '	15		
OCNS_Ec/lor	dB	-0.928	-0.953	-0.953	-0.928	-0.9	941	-0.9	941	-0.9	941	-0.9	941		
\hat{I}_{or}/I_{oc}	dB	-3.7	2.5	2.5	-3.7	-7.4	-4.8	-7.4	-4.8	-4.8	-7.4	-4.8	-7.4		
I _{oc}	dBm / 3.84 MHz						70	0							
CPICH_Ec/lo	dB	-16.3	-12.8	-12.8	-16.3	-19.9	-20.2	-19.9	-20.2	-20.2	-19.9	-20.2	-19.9		
Propagation Condition							AW	/GN							
Cell_selection_and_ reselection_quality_ measure		CPICH	I E₀/N₀	CPICH	I E₀/N₀	CPICH	I E₀/N₀	CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH	H E₀/N₀		
Qqualmin	dB	-2	20	-2	20	-2	20	-20		-20		-20			
Qrxlevmin	dBm	-1	15	-1	15	-1	15	-1	15	-115		-115			
UE_TXPWR_MAX_ RACH	dB	2	1	2	:1	2	1	2	1	2	1	2	1		
Qoffset2 _{s, n}	dB	C1, 0 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, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C3, C1: 0 C4, C1: 0 C3, C2: 0 C4, C2: 0 C3, C4: 0 C4, C3: 0 C3, C5: 0 C4, C5: 0 C3, C6: 0 C4, C6: 0		C5, 0 C5, 0 C5, 0 C5, 0 C5, 0	C1: 0 C2: 0 C3: 0 C4: 0 C6: 0	C6, 0 C6, 0 C6, 0 C6, 0 C6, 0	C1: 0 C2: 0 C3: 0 C4: 0 C5: 0		
Qhyst2	dB	()	()	()	()	()	(0		
Treselection	S	0		()	()	0		0		0			
Sintrasearch	dB	not	sent	not sent		not	sent	not	sent	not sent		not sent		not	sent
Sintersearch	dB	not	sent	not	sent	not	sent	not	not sent		not sent		not sent		

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 $|_{dBm} \ge -114 \text{ dBm}$.

$$- \frac{I_o}{(\hat{I}_{or})}\Big|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB.$$

Table 8.7.2.1.1.1: CPICH_Ec/lo Intra frequency absolute accuracy, minimum requirements

		Accuracy [dB]	Conditions		
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]	
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	

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.

Parameter	Unit	Te	st 1	Tes	st 2	Test 3				
Farameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2			
UTRA RF Channel number		Channel 1		Char	nnel 1	Channel 1				
CPICH_Ec/lor	dB	-^	0	-1	10	-1	0			
PCCPCH_Ec/lor	dB	-^	2	-1	2	-1	2			
SCH_Ec/lor	dB	-^	2	-1	-12		2			
PICH_Ec/lor	dB	-15		-1	-15		15			
DPCH_Ec/lor	dB	-15	-	-15	-	-6	-			
OCNS_Ec/lor	dB	-1.11	-0.94	-1.11	-0.94	.2.56	-0.94			
loc	dBm/ 3.84 MHz	-56	5.98	-89	.07	-94.98				
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	dBm/3.84 MHz	-{	50	-8	36	-9) 4			
Propagation condition	-	AWGN AWGN 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	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 sec	2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests									

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 8.7.2.1.1.2.

8.7.2.1.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.

- 3) 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.
- 4) 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 8.7.2.1.1.2 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 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.2 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 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.

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

Table 8.7.2.1.1.3: CPICH Ec/lo measurement report mapping

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	
-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 	
-SFN-SFN observed time difference reporting	
indicator	No report
-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	TRUE
 Reporting quantities for monitored set cells 	
-SFN-SFN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	FALSE
indicator	
-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

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) 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 condition	lo [dBm/3.84 MHz]
	db	-2.71.5 for -14 ≤ CPICH Ec/lo -3.22 for -16 ≤ CPICH Ec/lo < -14 -4.23 for -20 ≤ CPICH Ec/lo < -16	-4.23	-9487
	uв	\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	-8750

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

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.

8.7.2.1.2 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 $|_{dBm} \ge -114 \text{ dBm}$.

-
$$|CPICH _RSCP1|_{in \, dBm} - CPICH _RSCP2|_{in \, dBm}| \le 20 \, dB$$
.

$$- \frac{I_o}{(\hat{I}_{or})}\Big|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB.$$

Table 8.7.2.1.2.1: CPICH_Ec/lo Intra frequency relative accuracy

		Accuracy [dB]	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
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

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.

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 8.7.2.1.1.2.

8.7.2.1.2.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT messages.
- 3) 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.
- 4) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 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 8.7.2.1.1.2 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 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.2 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 from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are 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 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

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.1.2.2.

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.

8.7.2.2	Inter frequency measurement accuracy
8.7.2.2.1	Absolute accuracy requirement
[TBD]	
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 $|_{dBm} \ge -114 \text{ dBm}.$

-
$$|CPICH _RSCP1|_{in \, dBm} - CPICH _RSCP2|_{in \, dBm}| \le 20 \, dB$$
.

- | Channel 1_Io|_{dBm/3.84 MHz} -Channel 2_Io|_{dBm/3.84 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 condition	lo [dBm/3.84 MHz]
	dB	\pm 1.5 for -14 \leq CPICH Ec/lo		-9450
CPICH_Ec/lo		± 2 for -16 \leq CPICH Ec/lo < -14	±3	
		± 3 for -20 \leq 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 [14 slots is FFS] 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.

Parameter	Unit	Test 1		Test 2		Test 3	
	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	10	-1	0
PCCPCH_Ec/lor	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	-	-6	-	-6	-
OCNS_Ec/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
loc	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
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
lo, Note 1	dBm/3.84 MHz	-50	-50	-86	-86	-94	-94
Propagation condition	-	AWGN AWGN 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.							

Table 8.7.2.2.2.2: CPICH Ec/lo Inter frequency tests parameters

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 8.7.2.2.2.2.

8.7.2.2.2.4.2 Procedure

- 1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 3) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.
- 4) UE shall transmit periodically MEASUREMENT REPORT messages.
- 5) 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.
- 6) The result of step 5) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 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 8.7.2.2.2 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 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 8.7.2.2.2 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 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 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 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	Net Dresent
-URA Identity	Not Present
RB information elements	Net Dresent
-Downlink counter synchronisation into	Not Present
Frequency info	Not Present
Opilitik radio resources	Not Present
- CHOICE channel requirement	Not Present
- CHOICE channel requirement	Not Flesent
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	Not resent
-Downlink DPCH info common for all RI	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
- I ransmission gap pattern sequence	
	FDD measurement
	4
	/ Not Present
	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	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	
-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	
-SEN-SEN observed time difference reporting	No non-out
Indicator	No report
-Cell synchronisation information reporting	TRUE
Indicator Call Identity reporting indicator	
CRICH Ec/N0 reporting indicator	
CPICH PSCP reporting indicator	
-Dethloss reporting indicator	
-Reporting quantities for monitored set cells	INCE
-SEN-SEN observed time difference reporting	No report
indicator	
-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	TRUE
-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

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
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setun
-Measurement Reporting Mode	ootup
- Measurement Report Transfer Mode	Acknowledged mode RI C
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	i onodiodi ioporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	inter nequency 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	Norriesen
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	
-CHOICE mode	
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	INOL
-SEN-SEN observed time difference reporting	No report
indicator	No report
-Cell synchronisation information reporting	TRUE
indicator	INOL
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CRICH Ec/NO reporting indicator	TRUE
-CPICH RSCP reporting indicator	
-Pathloss reporting indicator	TRUE
-Reporting cell status	INOL
	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Maximum number of reported cens	Not Present
-Inter-frequency set undate	Not Present
	Periodical reporting criteria
	Infinity
-Reporting interval	500 ms
Dhysical channel information elemente	
	Not Dropont
-DPGH compressed mode status into	NOLPIESEN

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.

8.7.2.2.2.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.2.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) 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 8.7.2.2.3: CPICH_Ec/lo Inter frequency relative accuracy, test requirements

		Accuracy [dB] Condition		Conditions
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
		-2.71.5 for -14 ≤ CPICH Ec/lo -3.22 for -16 ≤ CPICH Ec/lo < -14 -4.23 for -20 ≤ CPICH Ec/lo < -16	-4.23	-9487
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	-8750

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

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.

		CHAN	IGE REQ	UEST	-	CR-Form-v5.1
¥	34.121	CR <mark>231</mark>	ж rev	- *	Current vers	^{ion:} 3.10.0 [#]
For <u>HELP</u> on u	ising this for	rm, see bottom	of this page or	look at th	ne pop-up text	over the # symbols.
Proposed change	affects: ೫	(U)SIM	ME/UE X	Radio A	ccess Networl	k Core Network
Title: ೫	Correctio	n to clause 8.3.	2 FDD/FDD Ha	ard Hando	over	
Source: ೫	T1/RF					
Work item code: %	-				<i>Date:</i> ೫	08/11/2002
Calegory. «	Use <u>one</u> of F (cor A (cor B (ado C (fun D (edi Detailed ex be found in	the following cate rection) responds to a col dition of feature), ctional modification torial modification olanations of the 3GPP <u>TR 21.900</u>	egories: rrection in an ear on of feature) n) above categorie:	rlier releas s can	Use <u>one</u> of 2 re) R96 R97 R98 R99 REL-4 REL-5	the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)
reason for change.	2) In t into c aligne cell 1 within a PC transr TS25 uplink transr down 100m TTI of taken There (a) ⁻ t (b) ⁻ t t t t t ansr transr transr transr transr transr down 100m TTI of taken There (a) ⁻ t t t t t t t t t t t t t t t t t t t	spond to the mir equirement is pr his test case, th onsideration. Th ed in this test ca and cell2 isn't al 70ms(Intra) or preamble is spe nitted at the sar 214 4.3.2.3. In DCH occurs to nission with the sink DPCCH syr s(Inter) from ac ccurs in the sam into consideration are two ways of the transmission he uplink TTI be ime (t _{interrupt}). The timing of CF ransmit uplink I e approach (a) i nformance test. be beginning of ti e downlink synce d to N312 as 1 i equirements in the approach in the	and described by TS increases and the timing of CF se described by TS and the timing of CF se described in ligned, uplink E 100ms(Inter), to construct the timing maximum uplition this case, The align the timing maximum uplition the time as to S this case, The align the timing maximum uplition the time as to S this case, The align the timing maximum uplition the time as to S this case, The align the timing maximum uplition the time as to S this case, The align the timing maximum uplition the time as to S this case, The align the timing maximum uplition the time as to S this section as this section as	ainty of the N between D TS25.133 v ainty of the N between D TS25.13 DPCCH me which is the plink DPI Synchronic transmiss g of upline nk TTI be rocedure he transmiss g of upline nk TTI be rocedure he transmiss a PC prese erruption as an ap the timine target ce 0 ms or 10 or System T2 and T rameter N illowing, sume that	4.121 8.3.2.1. vith Interruption the TTI of the use and cell1 and cell and cell2 and upline bundary of the cell and cellay of and bundary of the cell and cellay of and bundary of the cell and cellay of and and cellay of and	and A.3.2.2.2 doesn't 2 and 8.3.2.2.2. The on time. uplink DCH is not taken ell2 is not always timing of CFN between e to be transmitted nt. For example, when hk DPCCH must be ure A described in a maximum TTI of the d uplink DPCCH target cell even if within 70ms(Intra) or for a maximum uplink pt for 0. This delay isn't a subject. PCH transmission with led to the interruption so that the UE can a activation time. sed in Terminal "Procedure". ear. The test condition is a smallest possible

	value i.e. only one insync is required.
	5) The uplink radio bearer isn't defined. Hence UL_TTI is uncertain.
	6) The description of Annex A of 34.123-1 was moved to TS34.108 clause 9.
	7) The IE "reporting cell status" is unnecessary because event trigger is set up as reporting criteria. Refer to TS25.331 10.3.7.36.
	8) The IE "primary CPICH info" is unnecessary because the IE "Cells forbidden to affect Reporting Range" is not present.
	9) There is no mention about Reference Measurement Channel in TS34.108 clause 6.10.
	10) The IE "SSDT Cell Identity" is unnecessary because the IE "SSDT information" is not present. Refer to TS25.331 10.3.7.36.
	11) Because the IE "Inter-frequency measurement objects list" isn't included in SIB11 and SIB12 described in TS34.108 clause 6.1.0b. The IE "Inter-frequency measurement objects list" needs to be included in MEASUREMENT CONTROL message to make the UE perform inter-frequency measurement.
	12) As for Hard Handover to inter-frequency cell, The MEASUREMENT REPORT triggered by event1A is not needed. Hence the MEASUREMENT CONTROL message to configure reporting due to EVENT1A is unnecessary.
	13) As for Hard Handover to inter-frequency cell, after performing hard handover transmission gap sequence is unnecessary.
Summary of change: #	1) The hard handover delay that it is mentioned in Minimum requirement is amended as the interruption time.
	2) To add the maximum TTI of the uplink DCH to the interruption time. (This is affected into TS25.133V3.10.0.)
	3) The timing when MEASUREMENT CONTROL message was transmitted at step 4 is made the beginning of time period T1.
	4) N312 is defined as 1.
	5) UL Reference Measurement Channel 12.2 kbps is used in the same way as uplink DCH parameter with downlink DCH parameter.
	6) The mention of Annex A of 34.123-1 is deleted.
	7) The IE "reporting cell status" is deleted.
	8) The IE "primary CPICH info" is deleted.
	9) The DCH parameter is revised in accordance with Reference Measurement Channel 12.2 kbps as specified in clause C.3.1 and C.2.1.
	10) The IE "SSDT Cell Identity" is deleted.
	11) The IE "Inter-frequency measurement objects list" is added.
	12) As for Hard Handover to inter-frequency cell, the MEASUREMENT CONTROL message is deleted.
	13) After performing hard handover, transmission gap sequence is deactivated.
Consequences if 9	1) 34 121 and 25 133 will be inconsistent
not approved:	2) Ability beyond Minimum requirement is required. Even "Good UE" may not pass this test.
	3) Ability beyond Minimum requirement is required. Even "Good UE" may not pass this test.
	4) Ability beyond Minimum requirement is. Even "Good UE" may not pass this

	test.
	5) The test condition will be insufficient to achieve the test purpose.
	6) 34.121 and 34.123-1 will be inconsistent.
	7) 34.121 and 25.331 will be inconsistent.
	8) 34.121 and 25.331 will be inconsistent.
	9) The test condition will be sufficient to achieve the test purpose.
	10) 34.121 and 25.331 will be inconsistent.
	11) The test condition will be insufficient to achieve the test purpose. The UE cannot perform inter-frequency measurement.
	12) The process that is unnecessary for the test is contained.
	13) The process that is unnecessary for the test is contained.
Clauses affected: #	8.3.2

Clauses affected:	第 8.3.2
Other specs affected:	 Conter core specifications Test specifications 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 <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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.

8.3.2 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 <u>interruption time hard handover delay</u> shall be less than <u>11070</u> 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 [FFS]%.

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}

$T_{interrupt1} = T_{IU} + 40 + 20 * KC + 150 * OC + 10 * F_{max} ms$

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.

 $\underline{F_{max}}$ 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 table 8.3.2.1.1 and 8.3.2.1.2 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 at beginning of T3 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.

Para	neter	Unit	Value	Comment
DCH parameters			DL and UL Reference Measurement Channel 12.2 kbps	As specified in TS 34.121 clause C.3.1 and C2.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial	Active cell		Cell 1	
conditions	Neighbourin g cell		Cell 2	
Final condition	Active cell		Cell 2	
Reporting range		dB	3	Applicable for event 1A and 1B
Hysteresis		dB	0	
Ŵ			1	Applicable for event 1A and 1B
Reporting deactivation threshold			0	Applicable for event 1A
Time to Trigger		ms	0	
Filter coefficient			0	
T1		S	5	
T2		S	5	
T3		S	5	

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

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

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	Т3	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		Note2	Note2	Note2	-0.941	-0.941	Note2
\hat{I}_{or}/I_{oc}	dB	0 6.97 -Infinity 5.97			97		
I _{oc}	dBm/	-70					
	3.04 MHz						
CPICH_Ec/lo	dB	-13 -Infinity -14					
Propagation		AWGN					
Condition							
Note 1: The DPC	H level is	el is controlled by the power control loop					
Note 2: The powe	er of the C	OCNS channel that is added shall make the total power from the cell to be equal to I_{or}					
Note 3: The DPC	H may no	ot be power controlled by the power control loop.					

8.3.2.1.4.2 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 test procedure specified in TS 34.108 [3] subclause 7.3.4.
- [Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]
- 4) SS shall transmit a MEASUREMENT CONTROL message.
- 5) After-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
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time <u>set to the</u> <u>beginning of time period at T3. SS shall transmit the whole message such that it will be available at the UE no</u> <u>later than a period equals to the RRC procedure delay (= 80 ms) prior to the beginning of T3</u>
- 8) After 5 seconds from the beginning of time period T2, 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 <u>11070</u> 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 [TBD] times

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 A of 34.123 1 [21], with the following exceptions:

I

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
IIE information elements	
-BBC transaction identifier	0
Integrity check info	0 Not Procent
Measurement Information elements	Not i resent
-Measurement Identity	1
Moasurement Command (10.3.7.46)	1 Modify
Moasurement Penerting Mode (10.3.7.40)	Woully
Measurement Report Transfer Mede	
-Measurement Report Transfer Mode	AM RLC
Additional macauramenta list (10.2.7.4)	Event trigger
	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-trequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE mode	
-Measurement quantity	CPICH_Ec/N0
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SEN-SEN observed time difference reporting indicator	No report
-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	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-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	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	Not Present
	Report all active set cells + cells within
	monitored set on used frequency
Maximum number of reported cells	2
-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
	FDD
-W	1.0
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	0
-Replacement activation threshold	Not Present
- lime to trigger	U ms
-Amount of reporting	Infinity
-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
	FDD

I

Information Element/Group name	Value/Remark				
Primary CPICH info (10.3.6.60)					
-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	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 contain					
in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS					
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					
MEASUREMENT CONTROL.					
Note 2: Reporting interval = 0 ms means no periodical reporti	ng				

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	-
-RRC transaction identifier	
-Integrity check into	Not Present
-Integrity protection mode info	Not Present
-Cipnering mode into	Not Present
	ALTS 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
>>KB with PDCP information	Not Present
Fraguaray info (10.2.6.26)	
-CHOICE mode	EDD
	Same unlink LIARECN as used for cell 2
-UARFON downlink(Nd)	Same downlink UARFON as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE channel requirement	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE mode	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
	10B
-CHOICE mode	FDD
-Scrambling code number	0 (0 to 16777215)
-Number of DPDCH	Not Present(1)
-Spreading factor	SE is reference to TS34 108 clause 6 10
	Parameter Set64
-TFCI existence	TRUE
-Number of FBI bit	Not Present(0)
-Puncturing Limit	Reference to TS34.108 clause 6.10
-	Parameter Set <u>TBD</u>
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-DOWNIINK DPCH INTO COMMON FOR All RL (10.3.6.18)	Initializa
- CEN_targetSEN frame offset	Not Present
-Orivitalyetorivitatile offset	
-DPC mode	0 (single)
-CHOICE mode	FDD
-Power offset Peilot-DPDCH	TBD
-DL rate matching restriction information	Not Present
-Spreading factor	Reference to TS34.108 clause 6.10
	Parameter Set <u>128</u>
-Fixed or Flexible Position	Flexible Fixed
-TFCI existence	TRUE
-CHOICE SF	Not Present <u>128</u>
-Number of bits for Pilot bits(SF=128,256)	Not Present <u>8</u>
-CHOICE mode	
-DPCH compressed mode into (10.3.6.33)	Not Present

Information Element	Value/Remark
-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	1
-Spreading factor	Reference to TS34.108 clause 6.10
	Parameter Set128
-Code number	SF-1(SF is reference to TS34.108 clause
	6.10 Parameter Set)0
-Scrambling code change	No change
-TPC combination index	0
- SSDT Cell Identity	-aNot 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

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

8.3.2.1.5 Test requirements

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

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 <u>interruption time hard handover delay</u> shall be less than <u>140100</u> 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 [FFS]%.

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 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 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. 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 at beginning of T3 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.

Parameter		Unit	Value	Comment
DCH parameters			DL and UL Reference	As specified in TS 34.121 clause C.3.1
			Measurement Channel 12.2	and C2.1
			kbps	
Power Conti	ol		On	
Target qualit	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 2	
E . 1			0.110	
Final	Active cell		Cell 2	
conditions				
Threshold non used		dB	-18	Absolute Ec/I0 threshold for event 2C
frequency				
Reporting ra	inge	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 de	eactivation		0	Applicable for event 1A
threshold				
Time to Trigger		ms	0	
Filter coefficient			0	
T1		S	5	
T2		S	10	
T3		S	5	

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

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	Т3	T1	T2	Т3
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		Note2	Note2	Note2	-0.941	-0.941	Note2
\hat{I}_{or}/I_{oc}	dB	0			-Infinity	-1.8	-1.8
Iac	dBm/	-70					
00	3.84						
	MHz						
CPICH_Ec/lo	dB	-13 -Infinity -14			4		
Propagation		AWGN					
Condition							
Note 1: The DPCH level is controlled by the power control loop							
Note 2: The powe	er of the C	OCNS channel that is added shall make the total power from the cell to be equal to I					
Note 3: The DPC	H may no	not be power controlled by the power control loop.					

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

8.3.2.2.4.2 Procedure

- 1) The RF parameters are set up according to T1.
- 2) The UE is switched on.
- 3) A call is set up 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 atwo MEASUREMENT CONTROL messages, one for each event type.
- 5) After-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 2C
- 7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at <u>the</u> <u>beginning of time period</u> T3. 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
- 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 <u>140100</u> 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 [TBD] times

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]-and in Annex A of 34.123 1 [21], with the following exceptions:

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

Message Type (10.2.17) Image: Constraint of the system
UE information elements0-RRC transaction identifier0-Integrity check infoNot PresentMeasurement Information elements24-Measurement Command (10.3.7.46)SetupModify-Measurement Reporting Mode (10.3.7.49)-Measurement Report Transfer Mode-Measurement Report Transfer ModeAM RLC-Periodical Reporting / Event Trigger Reporting ModeEvent trigger-Additional measurements list (10.3.7.1)Not Present-CHOICE Measurement (10.3.7.16)Inter-frequency measurement objects list (10.3.7.13)- CHOICE Inter-frequency cell removalNot Present
-RRC transaction identifier 0 -Integrity check info Not Present Measurement Information elements 24 -Measurement Command (10.3.7.46) SetupModify -Measurement Reporting Mode (10.3.7.49) AM RLC -Periodical Reporting / Event Trigger Reporting Mode Event trigger -Additional measurements list (10.3.7.1) Not Present -CHOICE Measurement (10.3.7.16) Inter-frequency measurement objects list (10.3.7.13) - CHOICE Inter-frequency cell removal Not Present
-Integrity check info Not Present Measurement Information elements 24 -Measurement Command (10.3.7.46) SetupModify -Measurement Reporting Mode (10.3.7.49) AM RLC -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 (10.3.7.16) Inter-frequency measurement objects list (10.3.7.13) -Inter-frequency measurement objects list (10.3.7.13) Not Present - CHOICE Inter-frequency cell removal Not Present
Measurement Information elements 24 -Measurement Command (10.3.7.46) SetupModify -Measurement Reporting Mode (10.3.7.49) AM RLC -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 (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) Not Present - CHOICE Inter-frequency cell removal Not Present
-Measurement Identity 24 -Measurement Command (10.3.7.46) SetupModify -Measurement Reporting Mode (10.3.7.49) 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 (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) Not Present - CHOICE Inter-frequency cell removal Not Present
-Measurement Command (10.3.7.46) SetupModify -Measurement Reporting Mode (10.3.7.49) 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 (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) Not Present - CHOICE Inter-frequency cell removal Not Present
-Measurement Reporting Mode (10.3.7.49) AM RLC -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 (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) Not Present - CHOICE Inter-frequency cell removal Not Present
-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 (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) Not Present - CHOICE Inter-frequency cell removal Not Present
-Periodical Reporting / Event Higger Reporting Mode Event Higger -Additional measurements list (10.3.7.1) Not Present -CHOICE Measurement type Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) Not Present - CHOICE Inter-frequency cell removal Not Present
-CHOICE Measurement type Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) Not Present - CHOICE Inter-frequency cell removal Not Present
-Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) - CHOICE Inter-frequency cell removal Not Present Not Present
-Inter-frequency measurement objects list (10.3.7.13) - CHOICE Inter-frequency cell removal Not Present
<u>- CHOICE Inter-frequency cell removal</u> <u>Not Present</u>
- New Inter frequency cells
- Inter frequency cell id 0
- Frequency info
- CHOICE mode FDD
<u>- UARFCN uplink(Nu)</u> Not Present
<u>- UARFCN downlink(Nd)</u> <u>Same frequency as "Channel2" in Table</u>
<u>8.3.2.2.2</u>
Coll individual offect
- Cell Individual Oliset - Reference time difference to cell
- Read SEN indicator
- CHOICE mode FDD
- Primary CPICH info
- Primary scrambling code Set to Primary scrambling code of Cell2
- Primary CPICH Tx Power of Cell2
described in Table 8.3.2.2.2
- Tx Diversity Indicator FALSE
- Cell Selection and Re-selection info Set to Cell Selection and Re-selection info
Or II for an analysis of Cell2
- Cell for measurement quentity (10.2.7.19)
-Inter-frequency measurement quantity (10.5.7.10)
-Onotoe reporting criteria
-Filter coefficient
-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)
-SFN-SFN observed time difference reporting indicator Type 1
-Cell synchronisation information reporting indicator
-CRICH Ec/N0 reporting indicator
-CPICH RSCP reporting indicator
-Pathloss reporting indicator
-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
Inter-frequency measurement reporting criteria (10.3.7.10)
-Parameters required for each event
-Inter-frequency event identity (10.3.7.14)
-Threshold used frequency Not Present

Information Element/Group name	Value/Remark
-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	-18 dB
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Second MEASUREMENT CONTROL message, event 1A (step 4):

Information Element/Group name	Value/Remark						
Message Type (10.2.17)							
UE information elements							
-RPC transaction identifier	Δ						
	♦ Not Procent						
Moasurement Information elements							
Moogurement Identity	1						
-weasurement Command (40.2.7.40)	+ Marife						
-Weasurement Command (10.3.7.46)	woany						
-Weasurement Reporting Wode (10.3.7.19)							
Measurement Report Transfer Mode	AMI REG						
Penodical Reporting / Event Ingger Reporting Wode	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-trequency measurement objects list (10.3.7.13)	Not Present						
Inter-frequency measurement quantity (10.3.7.18)							
	Inter-frequency reporting criteria						
Inter-frequency reporting criteria							
Filter coefficient	θ						
	FDD						
 Measurement quantity for frequency quality estimate 	CPICH Ec/N0						
Inter-frequency reporting quantity (10.3.7.21)							
	FALSE						
Frequency quality estimate	FALSE						
Non frequency related cell reporting quantities (10.3.7.5)							
SFN-SFN observed time difference reporting indicator	Type 1						
Cell synchronisation information reporting indicator	TRUE						
	TRUE						
	FDD						
	TRUE						
	TRUE						
	TRUE						
Reporting cell status (10.3.7.61)							
	Report cells within monitored set on non-						
	used frequency						
	4						
frequency							
Measurement validity (10.3.7.51)	Not Present						
-Inter-frequency set undate (10.3.7.22)	Not Present						
	Intra-frequency measurement reporting						
	criteria						
Intra-frequency measurement reporting criteria (10.3.7.30)							
-Parameters required for each event	1						
- Intra-frequency event identity	Fvent 1A						
-Triagering condition 2	Active set cells and monitored set cells						
	A dB						
Colls forbiddon to affect Penerting Pange	Not Procent						
Primary CDICH info (10.2.6.60)							
	10						
Throshold used frequency	Vot Procent						
Poparting deactivation threshold							
Time to triager							
	Units Not Present (Note 1)						
- 	Unit Dresent						
	NOT Present						
Physical channel information elements							
-DPCH compressed mode status info (10.3.6.34)	Not Present						
Note 1: I his IE is not needed as "Intra-frequency reporting criteria" is included in the IE "Inter-frequency							
measurement"							
Note 2: Reporting interval = 0 ms means no periodical report	ing						

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

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	At T3					
-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 Present					
RB information elements						
-Downlink counter synchronisation into	Not Present					
>RB with PDCP Information list	Not Present					
>>RD with PDCP information PhyCH information elements						
Friguency info (10.3.6.36)						
-CHOICE mode	FDD					
	Same unlink LIARECN as used for cell 2					
	Same downlink UARECN as used for coll 2					
	Same downlink OAKFON as used for Cell 2					
-Maximum allowed LIL TX power	33 dBm					
-CHOICE channel requirement	Unlink DPCH info					
-Unlink DPCH info (10.3.6.88)						
-Uplink DPCH power control info (10.3.6.91)						
-CHOICE mode	FDD					
-DPCCH power offset	-6dB					
- PC Preamble	1 frame					
- SRB delay	7 frames					
- Power Control Algorithm	Algorithm1					
- TPC step size	1dB					
-CHOICE mode	FDD					
-Scrambling code type	Long					
-Scrambling code number	0 (0 to 16777215)					
-Number of DPDCH	Not Present(1)					
-Spreading factor	SF is reference to TS34.108 clause 6.10					
	Parameter Set <u>64</u>					
-IFCI existence						
-Number of FBI bit	Not Present(0)					
-Puncturing Limit	Reference to TS34.108 clause 6.10					
Downlink radio recourses	<u> ⊢arameter ≳et IRD</u>					
CHOICE mode	EDD					
Downlink PDSCH information	Not Procent					
-Duwnlink FDOUT Iniutitiation Downlink information common for all radio links (10.2.6.24)						
-Downlink DPCH info common for all PL (10.2.6.19)						
-Downlink DF CH Into continuition all RL (10.3.0.10)	Initialise					
-CEN-targetSEN frame offset	Not Present					
-Downlink DPCH power control information (10.3.6.23)						
-DPC mode	0 (single)					
-CHOICE mode	FDD					
-Power offset Peilor-DPDCH	TBD					
-DL rate matching restriction information	Not Present					
-Spreading factor	Reference to TS34.108 clause 6.10					
	Parameter Set128					
-Fixed or Flexible Position	Flexible Fixed					
-TFCI existence	TRUE					
-CHOICE SF	Not Present <u>128</u>					
-Number of bits for Pilot bits(SF=128,256)	Not Present8					
-CHOICE mode	FDD					
-DPCH compressed mode info (10.3.6.33)	Not Present (Note 1)					

Information Element	Value/Remark						
- Transmission gap pattern sequence	1						
- TGPSI	$\overline{1}$						
- 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	1						
-Spreading factor	Reference to TS34.108 clause 6.10						
	Parameter Set <u>128</u>						
-Code number	SF-1(SF is reference to TS34.108 clause						
	6.10 Parameter Set)0						
-Scrambling code change	No change						
-TPC combination index	0						
- SSDT Cell Identity	-aNot Present						
- Closed loop timing adjustment mode	Not Present						
- SCCPCH information for FACH (10.3.6.70)	Not Present						
Note 1: IE "DPCH compressed mode info" is not needed as default values are applied that have previously							
been received in RADIO BEARER SETUP or RRC CONNECTION SETUP							

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.

8.3.2.2.5 Test requirements

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

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.

T1-020759

											CR-Form-v7
CHANGE REQUEST											
ж	34	.121	CR	232	ж rev	-	ж	Current	vers	^{ion:} 3.10	^ж
For <u>HELP</u> on u	sing t	his for	m, see	bottom of th	his page o	^r look	at th	e pop-up	text	over the X	symbols.
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		B (add	lition of	feature),			010000	R97	•	(Release 19	97)
		C (fun D (edi	ctional torial m	modification o odification)	f feature)			R98 R99		(Release 19 (Release 19	98) 99)
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	be fo	und in	3GPP <u>-</u>	<u>TR 21.900</u> .				Rel-	5 6	(Release 5)	
								1.61-	0	(Release 0)	
Reason for change	9: X	In T1	RF#2	5 Yokohama	meeting t	ne neo	cessa	ary IE was	s se	t to "Not Pre	esent" by
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Summary or chang	с. т	comp	presse	d mode,		100		ION mess	aye	, inal activa	103
		1) t	he IE"	Downlink inf	ormation p	er rad	dio lir	nk list" is s	set t	o appropria	te
		i 2) I	nforma	ations accord	ling to prev	/ious (o valu	defin مرحد	ition. Mault DPC	ראר	Affect Value) (25
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not approved:					•			,			
Clauses affected:	ж	8.6.2	.1, 8.7	.1.2, 8.7.2.2	<mark>, 8.7.3.1,</mark> 8	.7.4.2	2				
	I	VN									
Other specs	ж		Othe	r core specifi	cations	ж					
affected:			Test	specification	S						
			O&M	Specification	ns						

Other comments: ೫

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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 modification >

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 delay uncertainty is twice 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

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

A cell shall be considered detectable when CPICH Ec/Io \geq -20 dB, SCH_Ec/Io \geq -17 dB 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

$$\Gamma_{\text{measurement inter}} = Max \left\{ T_{\text{Measurement}_Period Inter}, T_{\text{basic measurement FDD inter}} \cdot \frac{T_{\text{Measurement}_Period Inter}}{T_{\text{Inter}}} \cdot N_{Freq} \right\} ms$$

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 $X_{\text{basic measurement FDD inter}}$ 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 $T_{\text{Measurement_Inter.}}$

 $X_{\text{basic measurement FDDinter}} = 6$

 $T_{Measurement_Period Inter} = 480$ ms. The period used for calculating the measurement period $T_{measurement_inter}$ for inter frequency 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		
		ТО	Т0	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/IO of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement	As specified in C.3.1 and C.2.1
		Channel 12.2 kbps	
Power Control		On	
Compressed mode		C.5.2 set 1	As specified in C.5.
Active cell		Cell 1	
Threshold non used	dB	-18	Absolute Ec/I0 threshold for event 2C
frequency			
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		0	Applicable for event 1A
threshold			
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1	Measurement control information is
		16 on channel 2	sent before the compressed mode
			pattern starts.
T1	S	10	
T2	S	5	

Table 8.6.2.1.2: General test parameters for Correct reporting of neighbours in AWGN propagation condition

Table 8.6.2.1.3: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Ce	ell 1	Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Char	nnel 1	Chanı	nel 1	Char	inel 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		-1.049	-	-0.941		-0.941	
\hat{I}_{or}/I_{oc}	dB	0	4.39	-Infinity	2.39	-1.8	-1.8
I _{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/lo	dB	-13	-13	-Infinity	-15	-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 succesful 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 1036.2 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.
- 12) After 5 seconds from the beginning of T2, the UE is switched off.
- 13)Repeat steps 1-12 [50] times.

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	Value/Keinark
incoduge 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
	Not Present
-New C-RNTI DBC State Indicator	
-RRC State Indicator	CELL_DCH Not Present
-OTRAN DRA cycle length coemclent	Not Present
CN Information info	Not Propert
-CN IIIOIIIdiloii IIIO	Not Flesent
	Not Present
PB 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	
-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	
-IGMP	FDD measurement
-TGPRC	Not present
-IGSN	4
-IGL1	/ Not Descent
-IGL2	Not Present
	3 Not Procent
	Mode 0
	Mode 0
-CHOICE LIL/DL mode	
-Downlink compressed mode method	SE/2
-Unlink 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
-Downlink information per radio link list	Not Present
- Downlink information for each radio link	
<u>-Choice mode</u>	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	<u>128</u>
<u>-Code number</u>	<u>0</u>
-Scrambling code change	No code change
-TPC combination index	<u>0</u>
-SSDT Cell Identity	Not Present
-Closed loop timing adjustment mode	Not Present
-SCCPCH Information for FACH	Not Present

< End of modification >

< Start of modification >

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 $|_{dBm} \ge -114 \text{ dBm}.$

-
$$|CPICH _RSCP1|_{in \, dBm} - CPICH _RSCP2|_{in \, dBm}| \le 20 \, dB$$
.

- | Channel 1_Io|_{dBm/3.84 MHz} -Channel 2_Io|_{dBm/3.84 MHz} | $\leq 20 \text{ dB}.$

$$- \left. \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in\ dB} - \left(\frac{CPICH - E_c}{I_{or}} \right)_{in\ dB} \le 20 dB \, .$$

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

		Accur	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
CPICH_RSCP	dBm	±6	±6	-9450

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 [14 slots is FFS] 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.

Parameter	Unit	Tes	st 1	Test 2			
Falameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2		
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2		
CPICH_Ec/lor	dB	-1	0	-1	0		
PCCPCH_Ec/lor	dB	-1	2	-1	2		
SCH_Ec/lor	dB	-1	2	-1	2		
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		
loc	dBm/ 3.84 MHz	-60.00	-60.00	-84.00	-94.46		
Îor/loc	dB	9.54 9.54 0 -			-9.54		
CPICH RSCP, Note 1	dBm	-60.46	-60.46	-94.0	-114.0		
Io, Note 1	dBm/3.84 MHz	-50.00	-50.00	-81.0	-94.0		
Propagation condition	-	- 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.							

 Table 8.7.1.2.1.2: CPICH RSCP Inter frequency tests parameters

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 8.7.1.2.1.2.

8.7.1.2.1.4.2 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 for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.
- 4) UE shall transmit periodically MEASUREMENT REPORT messages.
- 5) 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.
- 6) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 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 8.7.1.2.1.2 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 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 (step 1):

Information Element	Value/Remark
Message Type	Value/Keinaik
UE Information Elements	
-RRC transaction identifier	0 Nat Descent
-Integrity check info	Not Present
-Integrity protection mode into	Not Present
	Not Present
	Not Present
	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	Not Dropont
-DPCH compressed mode info	
-Transmission dan 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
-IGPRC	Infinity
-IGSN	4
	/ Not Present
-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	
-DeltaSIR2	Not Present
	Not Present
-IN IDENIIIY ADDIT	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-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	0
-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

< End of modification >

< Start of modification >

8.7.2.2 Inter frequency measurement accuracy

- 8.7.2.2.1 Absolute accuracy requirement
- [TBD]
- 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 $|_{dBm} \ge -114 \text{ dBm}$.

-
$$|CPICH _RSCP1|_{in \, dBm} - CPICH _RSCP2|_{in \, dBm} | \le 20 \, dB$$
.

- | Channel 1_Io|_{dBm/3.84 MHz} -Channel 2_Io|_{dBm/3.84 MHz} | \leq 20 dB.

$$- \frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dB} \le 20dB.$$

		Accuracy [dB	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dB	\pm 1.5 for -14 \leq CPICH Ec/lo		-9450
CPICH_Ec/lo		± 2 for -16 \leq CPICH Ec/lo < -14	±3	
		± 3 for -20 \leq 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 [14 slots is FFS] 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.

Paramotor	Unit	Tes	st 1	Test 2		Test 3		
Falameter	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		Channel I	Channel 2	Channel I	Channel 2	Channel 1		
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	5	-15		-1	5	
DPCH_Ec/lor	dB	-15	-	-6	-	-6	-	
OCNS_Ec/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94	
loc	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46	
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	
lo, Note 1	dBm/3.84 MHz	-50	-50	-86	-86	-94	-94	
Propagation condition	-	AWGN 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								

Table 8.7.2.2.2.2: CPICH Ec/lo Inter frequency tests parameters

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.

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 8.7.2.2.2.2.

8.7.2.2.2.4.2 Procedure

- 1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

- 3) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.
- 4) UE shall transmit periodically MEASUREMENT REPORT messages.
- 5) 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.
- 6) The result of step 5) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 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 8.7.2.2.2 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 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 8.7.2.2.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE, the RF parameters are set up according to table 8.7.2.2.2.2 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 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 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 1):

Information Element	Value/Remark
Message Type	Value/Keinaik
UE Information Elements	
-RRC transaction identifier	0 Nat Descent
-Integrity check info	Not Present
-Integrity protection mode into	Not Present
	Not Present
	Not Present
	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	Not Dropont
-DPCH compressed mode info	
-Transmission dan 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
-IGPRC	Infinity
-IGSN	4
	/ Not Present
-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	
-DeltaSIR2	Not Present
	Not Present
-IN IDENIIIY ADDIT	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-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	<u>128</u>
-Code number	0
-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

< End of modification >

< Start of modification >

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

		Accur	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
LITDA Corrier DCCL	dBm	± 4	± 7	-9470
UTRA Camer RSSI	dBm	± 6	± 9	-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 [14 slots is FFS] 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.

Parameter	Unit	Test 1		Tes	st 2	Test 3		
Farameter	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	-10	
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	15	-1	5	
DPCH_Ec/lor	dB	-15	-	-6	-	-6	-	
OCNS_Ec/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94	
loc	dBm/ 3.84 MHz	-52.22	-52.22	-70.27	-70.27	-94.46	-94.46	
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	
lo, Note 1	dBm/3.84 MHz	-50	-50	-69	-69	-94	-94	
Propagation condition	-	AWGN AWGN 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.								

Table 8.7.3.1.2: UTRA Carrier RSSI Inter frequency test parameters

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.

8.7.3.1.4.2 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 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.
- 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 8.7.3.1.2 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 5) 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 5) above is 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 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	Value/Keinaik
UE Information Elements	
-RRC transaction identifier	0 Nat Descent
-Integrity check info	Not Present
-Integrity protection mode into	Not Present
	Not Present
	Not Present
	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	Not Dropont
-DPCH compressed mode info	
-Transmission dan 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
-IGPRC	Infinity
-IGSN	4
-IGLI TCL2	/ Not Present
-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	
-DeltaSIR2	Not Present
	Not Present
-IN IDENIIIY ADDIT	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-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	<u>128</u>
-Code number	0
-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

< End of modification >

< Start of modification >

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 $|_{dBm} \ge -114 \text{ dBm}.$

$$\left| CPICH _RSCP1 \right|_{in \, dBm} - CPICH _RSCP2 \right|_{in \, dBm} \le 20 dB$$

| Channel 1_Io|_{dBm/3.84 MHz} -Channel 2_Io|_{dBm/3.84 MHz} | \leq 20 dB.

$$\frac{I_o}{(\hat{I}_{or})}\Big|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB$$

Table 8.7.4.2.1

Parameter	Unit	Accuracy [chip]	Conditions lo [dBm/3.84 MHz]
SFN-CFN observed time difference	chip	± 1	-9450

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	Tes	st 2	Test 3		
Farameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
LITRA RE Channel number		Channel	Channel	Channel	Channel	Channel	Channel	
OTRA RI Ghannei hambei		1	2	1	2	1	2	
CPICH_Ec/lor	dB	-1	0	-1	0	-10		
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	-1	5	-1	5	-1	5	
OCNS_Ec/lor	dB	-1.	11	-1	.11	-1.11		
Îor/loc	dB	10).1	10.1		10.1		
			Io -10.6 dB = Ioc,		lo - 10.6 dB = loc,		Io - 10.6 dB = Ioc,	
100	UBIN/ 5.04 IVILIZ	Note 1		Note 1		Note 1		
lo	dBm/3.84 MHz	-5	50	-7	/2	-9) 4	
Relative delay of path received		Y						
from cell 2 with respect to cell	chip			No	n to 2			
1								
Propagation condition	-	AW	'GN	AW	'GN	AW	GN	
NOTE 1: loc level shall be adju	sted in each carrier fr	equency a	ccording th	e total sig	nal power	lo at receiv	er input	
and the geometry factor lor/loc.								
NOTE2: For example, x= 491520 or 9830399								
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.								

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 8.7.4.2.2.

8.7.4.2.4.2 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 "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.

- 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 8.7.4.2.2 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 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.2.2 for Test 3. While RF parameters are set up according to table 8.7.4.2.2 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 from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the 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:

PHYSICAL CHANNEL RECONFIGURATION message for inter frequency measurement

Information Element	Value/Remark
	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
Liplink radio resources	
-Maximum allowed LIL TX power	Not Present
- CHOICE channel requirement	Not Present
	Norresent
-CHOICE mode	EDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	Not resent
-Downlink Information common for all Pl	Not Present
	FDD
-DPCH compressed mode info	
-Transmission gan pattern sequence	
	1
-TGPS Status Flag	Activate
-TGCEN	(Current CEN + (256 - TTI/10msec)) mod 256
-Transmission dan nattern sequence	
configuration parameters	
-TGMP	EDD measurement
-TGPRC	Infinity
-TGSN	Δ
-TGL1	7
-TGL 2	Not Present
TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UI /DL mode	III and DI
-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
-Downlink information per radio link list	Not Present
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	<u></u>
-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	<u>128</u>
-Code number	<u>0</u>
-Scrambling code change	No code change
-TPC combination index	<u>0</u>
-SSDT Cell Identity	Not Present
 Closed loop timing adjustment mode 	Not Present
-SCCPCH Information for FACH	Not Present

< End of modification >

			(CHANGE	REQ	UE	ST			CR-Form-v7
æ		34.121	CR	233	жrev	-	ж	Current vers	^{ion:} 3.1	<mark>8.0</mark> [#]
For <u>HELP</u> o	n u	sing this for	m, see	bottom of this	s page or l	look	at the	e pop-up text	over the ¥	ß symbols.
Proposed chang	ge a	affects: l	JICC a	pps#	ME X	Rac	dio A	ccess Networ	k Cor	e Network
Title:	ж	Introductio	<mark>on of te</mark>	est tolerances	in Cell Re	sele	ction	multi carrier	test cases	
Source:	ж	T1-RF								
Work item code	:¥	-						Date: ೫	29/10/20	02
Category:	æ	F Use <u>one</u> of F (con A (cor B (ado C (fun D (edi Detailed exp be found in	the follo rection) respond dition of ctional in torial m blanatio 3GPP <u>1</u>	owing categories of to a correction feature), modification of the odification) ns of the above <u>FR 21.900</u> .	s: on in an ear feature) e categories	<i>lier re</i> s can	elease	Release: # Use <u>one</u> of 2 8) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	R99 the followin (GSM Phas (Release 1 (Release 1 (Release 1 (Release 4 (Release 5 (Release 6	g releases: se 2) 996) 997) 998) 999))))

Reason for change: ೫	Test tolerance values for Cell Reselection in Idle Mode, Cell Reselection in CELL_FACH, Cell Reselection in CELL_PCH and Cell Resection in URA_PCH for multicarrier are not introduced yet.
Summary of change: ೫	Introduction of test tolerances for Cell Reselection in Idle Mode, Cell Reselection in CELL_FACH, Cell Reselection in CELL_PCH and Cell Resection in URA_PCH for multicarrier.
Consequences if # not approved:	Test tolerance values will be missing for Cell Reselection in Idle Mode, Cell Reselection in CELL_FACH, Cell Reselection in CELL_PCH and Cell Resection in URA_PCH for multicarrier.
Clauses affected: #	822 835 836 837

Clauses affected:	ж 8.2.2, 8.3.5, 8.3.6, 8.3.7
Other specs affected:	Y N % Other core specifications % Test specifications % O&M Specifications
Other comments:	ж

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <u>http://www.3gpp.org/specs/CR.htm</u>. 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 <u>ftp://ftp.3gpp.org/specs/</u> 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. 3

8.2 Idle Mode Tasks

8.2.1 Cell Selection

Void.

8.2.2 Cell Re-Selection

8.2.2.1 Scenario 1: Single carrier case

8.2.2.1.1 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 RRC CONNECTION REQUEST message to perform a Location Updating procedure (MM) or Routing Area Updating procedure (GMM) on the new cell.

The requirements and this test apply to the FDD UE.

8.2.2.1.2 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 [FFS]%.

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

TevaluateFDDSee table 4.1 in TS 25.133 [2] clause 4.2.2.TSIMaximum 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 4.2.2.2 and A.4.2.1.

8.2.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.2.1.4 Method of test

8.2.2.1.4.1 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.

This scenario implies the presence of 1 carrier and 6 cells as given in tables 8.2.2.1.1 and 8.2.2.1.2. 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. Cell 1 and cell 2 shall belong to different Location Areas.

	Parameter	Unit	Value	Comment			
Initial	Active cell		Cell2				
condition	Neighbour cells		Cell1, Cell3, Cell4, Cell5, Cell6				
Final condition	Active cell		Cell1				
SYSTEM IN TYPE 1 - CN comm information	NFORMATION BLOCK	-	00 80(H) → Cell 1 00 81(H) → Cell 2	This identity should be set as different value from the neigbour cell so that a Location Updating procedure(MM) or a Routing Area Updating procedure(GMM) is performed when UE selects more suitable cell in idle state.			
Access Ser - Persistene	vice 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.			
Τ1		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 8.2.2.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter	Unit	C	ell 1	Ce	Cell 2		ell 3	Ce	4	Ce	II 5	Ce	ell 6
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Chan	Channel 1 Channel 1		Chan	Channel 1 Chan		Channel 1 Channel 1		el 1	Channel 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		-15	
OCNS_Ec/lor	dB	-0,94	1	-0,941		-0,941	1	-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	
I _{oc}	dBm / 3,84 MHz	-70	-70										
CPICH_Ec/lo	dB	-16	-13	-13 -16 -23 -2		-23		-23		-23			
Propagation Condition		AWGN											
Cell_selection_and_ reselection_quality_ measure		CPIC	H E₀/N₀	CPICH	E _c /N ₀	CPICH E _c /N ₀		CPICH	E _c /N ₀	CPICH	I E _c /N ₀	CPICH	ΗE₀/N₀
Qqualmin	dB	-	20	-2	20	-	20	-20		-2	20	-2	20
Qrxlevmin	dBm	-^	115	-1	15	-1	115	-1	15	-1	15	-1	15
UE_TXPWR_MAX_ RACH	dB	:	21	2	21		21	2	1	2	1	2	21
Qoffset2 _{s, n}	dB	C1, C1, C1, C1, C1,	C2: 0 C3: 0 C4: 0 C5: 0	C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0		C4, 0 C4, 0 C4, 0 C4, 0	C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0		C1: 0 C2: 0 C3: 0 C4: 0
Ohvst2	dB		0	02,	00.0	- 03,	0	04, C	0, 04, 06, 0		0,00,0		0
Treselection	40D		0		0		0		0		0		0
Sintrasearch	dB	not	sent	not	not sent		not sent		not sent		not sent		sent

5 Table 8.2.2.1.2: Test parameters for Cell re-selection single carrier multi cell

6

8.2.2.1.4.2 Procedure

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.2.2.1.23 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) The SS and the UE shall perform a first registration procedure on cell2.
- 4) 15 s after step3 has completed, the parameters are changed to that as described for T2 in table 8.2.2.1.32.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 1 within 8 s from the beginning of time period T2 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) on cell1.
- 6) After 15 s from the beginning of time period T2, the parameters are changed to that as described for T1 in table 8.2.2.1.23.
- 7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s from the beginning of time period T1 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure(MM) or a Routing Area Updating procedure (GMM) on cell2.
- 8) After 15 s from the beginning of time period T1, the parameters are changed to that as described for T2.
- 9) Repeat step 5) to 8) [TBD] times.
- 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.

8.2.2.1.5 Test requirements

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

	Parameter	Unit	G) 1	Ce	 2	Ce) 3	Cel	-4	Ce) 5	Ce) 6		
			T 1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		
UT Nu	RA RF Channel mber		Chan	Channel 1 Channel) 1	Channel 1		Channel 1		Channel 1		Channel 1			
CF	HCH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-10		-10	- -10		-10				
P	CPCH_Ec/lor	dB	-12		-12		-12		-12		-12		-12			
Ş	H_Ec/lor	dB	-12		-12		-12		-12		-12		-12			
P	CH_Ec/lor	dB	-15		-15		-15		-15		-15		-15			
ď	NS_Ec/lor	dB	-0.928	-0.953	-0.953	-0.928	-0.9 41	F	-0.941		-0.9 41	F	-0.94 1	-		
\hat{I}_o	r/I_{oc}	dB	7	10.57	10.57	7	0.27		0.27		0.27		0.27			
$-I_o$	c	dBm./ 3.84 MHz	-70													
CF	HCH_Ec/lo	dB	-16.4	-12.7	-12.7	-16.4	-23.1		-23.1		-23.1		-23.1			
Pr C	pagation ndition							AW	GN							
Ce rec me	II_selection_and_ election_quality_ asure		CPICI	H-E ₆ ∕N₀	CPICH	CPICH E₀/N₀		CPICH E_c/N₀		∣ E₀/N 0	CPICH	<mark>€₀⁄N</mark> ₀	CPICH E ₀ /N ₀		CPICI	IE ₀∕N₀
Qc	ualmin	dB	-	20	-2	<u>20</u>	-	20	<u>-2</u>	0		20	-20			
Qr	xlevmin	dBm		1 15	-1	15	-4	15	-11	5	-1	15	-1	-15		
UE R/	TXPWR_MAX_ CH	dB	1	21	2	4	1	<u>21</u>	2'	F	2 2	<u>21</u>	-	<u>24</u>		
			C1, C1,	C2: 0 C3: 0	C2, (C2, (C1: 0 C3: 0	C3, C3,	C1: 0 C2: 0	C4, C C4, C	;1: 0 ; 2: 0	C5, C5,	C1: 0 C2: 0	C6, C6,	C1: 0 C2: 0		
Qc	ffset2_{s, n}	dB	C1,	C4: 0	C2, (C4: 0	C3,	C4: 0	C4, C	3: 0	C5,	C3: 0	C6,	C3: 0		
			C1,	C5: 0	C2, (C5: 0	C3,	C5: 0	C4, C	;5: 0	C5,	C4: 0	C6,	C4: 0		
			C1,	C6: 0	C2, (C6: 0	C3 ,	C6: 0	C4, C	C4, C6: 0		C5, C6: 0		C5: 0		
Qt	yst2	dB		0	()		0	0		0		0			
Tre	selection	8		0	()		θ			0		0			
Sir	trasearch	dB	not	sent	not	sent	not sent		not sent		not	sent	not	not sent		

Table 8.2.2.1.3: Test parameters for Cell re-selection single carrier multi cell.

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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.

8.2.2.2 Scenario 2: Multi carrier case

8.2.2.2.1 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 RRC CONNECTION REQUEST message to perform a Location Updating procedure(MM) or Routing Area Updating procedure (GMM) on the new cell.

The requirements and this test apply to the FDD UE.

8.2.2.2.2 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 [FFS]%.

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

TevaluateFDD	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.

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The normative reference for this requirement is TS 25.133 [2] clauses 4.2.2.3 and A.4.2.2.

8.2.2.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.2.2.2.4 Method of test

8.2.2.2.4.1 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.

This scenario implies the presence of 2 carriers and 6 cells as given in tables 8.2.2.2.1 and 8.2.2.2.2. 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. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.2.1: General test parameters for Cell Re-selection in multi carrier case

F	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 1 - CN common GSM-MAP NAS system information		-	00 80(H) → Cell 1 00 81(H) → Cell 2	This identity should be set as different value from the neigbour cell so that a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) is performed when UE selects more suitable cell in idle state.
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	length	S	1,28	The value shall be used for all cells in the test.
T1		S	30	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.

Parameter	Unit	Cel	11	Cel	Cell 2		3	Ce	II 4	Cel	5	Ce	ell 6
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Chanı	Channel 1 Channel 2			Chanı	Channel 1 Channel 1		Channel 2		Channel 2		
CPICH_Ec/lor	dB	-1	0	-1	0	-10		-10		-10		-10	
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2	-12		-12		-12	
SCH_Ec/lor	dB	-1	2	-1	2	-1	2	-12		-1:	2	-12	
PICH_Ec/lor	dB	-1	5	-1	5	-1	5	-	15	-1	5	-15	
OCNS_Ec/lor	dB	-0.9	41	-0.9	41	-0.9	41	-0.	941	-0.9	41	-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
I _{oc}	dBm / 3.84 MHz		-70										
CPICH_Ec/lo	dB	-16	-13	-13	-16	-2	0	-2	20	-20		-2	20
Propagation Condition		AWGN											
Cell_selection_and_ reselection_quality_ measure		CPICH	E _c /N ₀	CPICH	E _c /N ₀	CPICH E _c /N₀		CPICH E _c /N ₀		CPICH E₀/N₀		CPIC	Η E _c /N₀
Qqualmin	dB	-2	0	-20	C	-2	C	-20		-20		-20	
Qrxlevmin	dBm	-11	5	-11	5	-11	5	-1	15	-11	5	-1	15
UE_TXPWR_MAX_ RACH	dB	21	1	21		21		2	1	21		2	21
Qoffset2 _{s, n}	dB	C1, C C1, C C1, C C1, C C1, C	2: 0 3: 0 4: 0 5: 0 6: 0	C2, C C2, C C2, C C2, C C2, C C2, C	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, C5: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C1: 0 C2: 0 C3: 0 C4: 0 C5: 0
Qhyst2	dB	0		0		0			0	0			0
Treselection	S	0		0		0			0	0			0
Sintrasearch	dB	not s	ent	not s	ent	not s	ent	not	not sent		not sent		sent
Sintersearch	dB	not s	ent	not s	ent	not s	ent	not	not sent		ent	not	sent

9 Table 8.2.2.2.2: Test parameters for Cell re-selection multi carrier multi cell

8.2.2.2.4.2 Procedures

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.2.2.2.3 and monitors cell 1 and 2 for random access requests from the UE.
- 2) The UE is switched on.
- 3) The SS and the UE shall perform a first location registration procedure on cell2.
- 4) 30 s after step3 has completed, the parameters are changed to that as described for T2 in table 8.2.2.2.3.
- 5) The SS waits for random access request from the UE. If the UE responds on cell 1 within 8 s from the beginning of time period T2 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) on cell1.
- 6) After another 15 s from the beginning of time period T2, the parameters are changed to that as described for T1 in table 8.2.2.2.3.
- 7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s from the beginning of time period T1 then the number of successful tests is increased by one. The SS and the UE shall perform a Location Updating procedure (MM) or a Routing Area Updating procedure (GMM) on cell2.
- 8) After 15 s from the beginning of time period T1, the parameters are changed as described for T2.
- 9) Repeat step 5) to 8) [TBD] times.
- 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.

8.2.2.2.5 Test requirements

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

Table 8.2.2.2.3: Test parameters for Cell re-selection multi carrier multi cell

Parameter	Unit	Ce	ell 1	Ce	ll 2	Ce	II 3	Ce	II 4	Cell 5		Cell 6		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Char	nnel 1	Char	nnel 2	Char	nel 1	Channel 1		Channel 2		Channel 2		
CPICH_Ec/lor	dB	- <u>9.9</u> 10.1	-9. <u>7</u> 9	-9. <u>7</u> 9	- <u>9.9</u> 10.1	- <u>9.</u>	<u>9 </u> 10	- <u>9.</u>	<u>9 10</u>	- <u>9.9 10</u>		- <u>9.9 </u> 10		
PCCPCH_Ec/lor	dB	-	12	-	12	-	12	-*	12	-12		-12		
SCH_Ec/lor	dB	- <u>11.9</u> 12	<u>-11.7</u>	- <u>11.7</u> 12	<u>-11.9</u>	- <u>11</u>	<u>9 12 .</u>	- <u>11</u>	- <u>11.9 12</u>		- <u>11.9 12</u>		- <u>11.9 12</u>	
PICH_Ec/lor	dB	-	15	-	15	-	15	-*	15	-*	15	- '	15	
OCNS_Ec/lor	dB	- <u>0.954</u> 0.928	- <u>0.982</u> 0.953	- <u>0.982</u> 0.953	- <u>0.954</u> 0.928	- <u>0.954</u>	<u>0.941</u>	- <u>0.954</u>	<u>0.941</u>	- <u>0.954</u>	<u>0.941</u>	- <u>0.954</u>	<u>0.941</u>	
\hat{I}_{or}/I_{oc}	dB	-3. <u>5</u> 7	2. <u>8</u> 5	2. <u>8</u> 5	-3. <u>5</u> 7	- <u>9.5</u> 7.4	- <u>7.7</u> 4.8	- <u>9.5</u> 7.4	- <u>7.7</u> 4.8	- <u>7.7</u> 4.8	- <u>9.5</u> 7.4	- <u>7.7</u> 4 .8	- <u>7.7</u> 7.4	
I _{oc}	dBm / 3.84 MHz		70											
CPICH_Ec/lo	dB	- <u>15.6</u> 16.3	-12 .8	-12 .8	- <u>15.6</u> 16.3	- <u>21.6</u> 19.9	- <u>22.7</u> 20.2	- <u>21.6</u> 19.9	- <u>22.7</u> 20.2	- <u>22.7</u> 20.2	- <u>21.6</u> 19.9	- <u>22.7</u> 20.2	- <u>21.6</u> 19.9	
Propagation Condition							AW	/GN						
Cell_selection_and_ reselection_quality_ measure		CPICH	H E₀/N₀	CPIC	H E₀/N₀	CPICH E₀/N₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH	HE _c /N ₀	
Qqualmin	dB	-2	20	-2	20	-2	20	-20		-20		-20		
Qrxlevmin	dBm	-1	15	-1	15	-1	15	-1	15	-1	15	-1	15	
UE_TXPWR_MAX_ RACH	dB	2	21	2	21	2	1	2	1	2	1	2	1	
Qoffset2 _{s, n}	dB	C1, C1, C1, 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, 0 C4, 0 C4, 0 C4, 0 C4, 0 C4, 0	C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 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		D	
Treselection	S		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	sent	not	sent	not	not sent		not sent	

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.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.

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

$$T_{reselection, intra} = T_{Measurement_Period Intra} + T_{IU} + 20 + T_{SI} + T_{RA} ms$$

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 8.3.5.1.4. 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 pa	arameters for Cell Re-selection in CELL_FACH
----------------------------------	--

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell2	
condition	Neighbour cells		Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
Access Ser – Persisten	vice 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
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.

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

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 test parameters for Cell Re-selection in CELL_FACH

Parameter	Unit	Ce	Cell 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		Channel 1		Channel 1		Channel 1	Channel 1	Channel 1	Channel 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	-15		
S-CCPCH_Ec/lor	dB	-12		-12		-12	-12	-12	-12		
OCNS_Ec/lor	dB	-1.295		-1.295		-1.295	-1.295	-1.295	-1.295		
\hat{I}_{or}/I_{oc}	dB	7.3	10.27	10.27	7.3	0.27	0.27	0.27	0.27		
I _{oc}	dBm/3.84 MHz	-70									
CPICH_Ec/lo	dB	-16	16 -13 -13 -16		-23	-23	-23	-23			
Propagation Condition		AWGN									
Cell_selection_and_ reselection_quality_ measure		CPICH E _c /N ₀		CPICH E₀/N₀		CPICH E₀/N₀	CPICH E _c /N ₀	CPICH E _c /N ₀	CPICH E _c /N ₀		
Qqualmin	dB	-20		-20		-20	-20	-20	-20		
Qrxlevmin	dBm	-115		-115		-115 -115		-115	-115		
UE_TXPWR_ MAX_RACH	dBm	21		21		21 21		21	21		
		C1, C2: 0		C2, C1: 0		C3, C1: 0	C4, C1: 0	C5, C1: 0	C6, C1: 0		
Qoffset 2 _{s, n}		C1, C3: 0		C2, C3: 0		C3, C2: 0	C4, C2: 0	C5, C2: 0	C6, C2: 0		
	dB	C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C4: 0		C3, C4: 0	C4, C3: 0	C5, C3: 0	C6, C3: 0		
				C2, C5: 0		C3, C5: 0	C4, C5: 0	C5, C4: 0	C6, C4: 0		
				C2, C6: 0		C3, C6: 0	C4, C6: 0	C5, C6: 0	C6, C5: 0		
Qhyst	dB	0		0		0	0	0	0		
Treselection	S	0		0		0	0	0	0		
Sintrasearch	dB	not sent		not sent		not sent	not sent	not sent	not sent		
IE "FACH Measurement occasion info"		not sent		not sent		not sent	not sent	not sent	not sent		

8.3.5.1.4.2 Procedure

- 1) The SS activates cell 1-6 with RF parameters set up according to T1 in table 8.3.5.1.45.
- 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.
- 4) 15 seconds after step3 has completed, the SS shall switch the power settings from T1 to T2 in table 8.3.5.1.45.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 1 within 1.7 s from the beginning of time period T2 then the number of successful tests is increased by one. And if the SS receive a CELL UPDATE message from the UE, the SS shall transmit a CELL UPDATE CONFIRM.
- 6) After 15 s from the beginning of time period T2, the parameters are changed to that as described for T1 in table 8.3.5.1.5<u>4</u>.
- 7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 1.7 s from the beginning of time period T1 then the number of successful tests is increased by one. And if the SS receive a CELL UPDATE message from the UE, the SS shall transmit a CELL UPDATE CONFIRM.
- 8) After 15 s from the beginning of time period T1, the parameters are changed to that as described for T2.
- 9) Repeat step 5) to 8) [TBD] times.

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).

8.3.5.1.5 Test requirements

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

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6		
		T 1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel		Channel 1		Channel 1		Channel 1		Char			Ob a second d		Ohannal 4	
Number								Gnannel 1		Unannei 1		Gnannel 1		
CPICH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-10		-10		-10		-10		
PCPCH_Ec/lor	d₿	-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		-12		-12		-12		
OCNS_Ec/lor	dB	-1.282	-1.309	-1.309	1.282	- 1.295 - 1.29		295	-1.295		-1.295			
$\frac{\hat{I}_{or}}{I_{oc}}$	d₿	7	10.57	10.57	7	0.2	<u>27</u>	0.	27	0.27		0.27		
-I _{oc}	dBm/3.84 MHz	-70												
CPICH_Ec/lo	dB	-16.4	<u>12.7</u>	-12.7	-16.4	23	3.1	2	3.1	-23.1		25	3.1	
Propagation														
Condition														
Cell_selection_and_						СРІСН						CPICH		
reselection_quality_		CPICH E ₀ /N ₀		CPICH E ₀ /N ₀				IE₀/N ₀	CPICH E _c /N ₀		E./	<u>И</u>		
measure						_00								
Qqualmin	dB	-20		-20		-20		-20		-20		-20		
Qrixlevmin	dBm	-115		-115		-115		-115		-115		-115		
│ U⋢_TXPWR_ │ M≜X_RACH	dBm	21		21		21		2 1		21		21		
		C1, C2: 0		C2, C1: 0		C3, C1: 0		C4, C1: 0		C5, C1: 0		C6, C1: 0		
		C1, (C3: 0 C2, ')3: 0	C3, C2: 0		C4, C2: 0		C5, C2: 0		C6, C2: 0		
Qoffset 2 _{s, n}	dB	C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C4: 0		C3, C4: 0		C4, C3: 0		C5, C3: 0		C6, C3: 0		
				C2, C5: 0		C3, C5: 0		C4, C5: 0		C5, C4: 0		C6, C4: 0		
				C2, C6: 0		C3, C6: 0		C4, C6: 0		C5, C6: 0		C6, C5: 0		
Qhyst	dB	0		0		θ		0		0		0		
Treselection	S	0		0		θ		0		0		0		
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent		
IE "FACH														
Measurement		not sent		not sent		not sent		not sent		not sent		not	not sent	
occasion info"														

Table 8.3.5.1.5: Cell specific test parameters for Cell Re-selection in CELL_FACH

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.

8.3.5.2 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.
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_{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 8.3.5.2.4. 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

	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.

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 8.3.5.2.2: Physical channel parameters for S-CCPCH.

Table 8.3.5.2.3	: Transport	channel	parameters	for	S-CCPC	H
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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 test parameters for Cell re-selection in CELL_FACH state

Parameter	Unit	Cell 1		Ce	ell 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		Chanr	Channel 1		Channel 2		Channel 1		iel 1	Channel 2		Chann	el 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		
S-CCPCH_Ec/lor	dB	-12		-12		-12		-12		-12		-12		
OCNS_Ec/lor	dB	-1.295	5	-1.295	5	-1.295	5	-1.295	-	-1.295		-1.295		
\hat{I}_{or}/I_{oc}	dB	- <u>1.8</u> 3.4	2.2	2.2	- <u>1.8</u> 3.4	- <u>6.8</u> 7.4	-4.8	- <u>6.8</u> 7.4	-4.8	-4.8	- <u>6.8</u> 7.4	-4.8	- <u>6.8</u> 7.4	
I _{oc}	dBm/3.8 4 MHz	-70												
CPICH_Ec/lo	dB	-1 <u>5</u> 6	-13	-13	-1 <u>5</u> 6	-2	20	-2	20	-:	20	-2	20	
Propagation Condition		AWG	N											
Cell_selection_ and_reselection_ quality measure		CPICH E _c /N ₀	4	CPICI E _c /N ₀	Н	CPICI E₀/N₀	CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀	
Qqualmin	dB	-20		-20		-20		-20		-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, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 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		0		0		0		0		0		
Treselection	S	0		0		0		0		0		0		
Sintrasearch	dB	not se	nt	not se	ent	not se	nt	not se	nt	not sen	t	not ser	nt	
Sintersearch	dB	not se	nt	not se	ent	not se	nt	not se	nt	not sen	t	not ser	nt	
IE "FACH Measurement occasion info"		sent		sent		sent		sent		Sent		sent		
FACH Measurement occasion cycle length coefficient		3		3	3		3		3		3		3	
Inter-frequency FDD measurement indicator		TRUE		TRUE		TRUE	TRUE		TRUE		TRUE		TRUE	
Inter-frequency TDD measurement indicator		FALS	E	FALSE		FALSE		FALSE		FALSE		FALSE		

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 CELL_FACH.
- 4) 15 seconds after step3 has completed, the SS shall switch the power settings from T1 to T2 in table 8.3.5.2.5.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 1 within 2.0 s from the beginning of time period T2 then the number of successful tests is increased by one. And if the SS receive a CELL UPDATE message from the UE, the SS shall transmit a CELL UPDATE CONFIRM.

- 6) After 15 s from the beginning of time period T2, the parameters are changed to that as described for T1 in table 8.3.5.2.5.
- 7) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 2.0 s from the beginning of time period T1 then the number of successful tests is increased by one. And if the SS receive a CELL UPDATE message from the UE, the SS shall transmit a CELL UPDATE CONFIRM message.
- 8) After 15 s from the beginning of time period T1, the parameters are changed to that as described for T2.
- 9) Repeat step 5) to 8) [TBD] times.
- 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).

8.3.5.2.5 Test requirements

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

Table 8.3.5.2.5: Cell specific test parameters for Cell re-selection in CELL_FACH state

Parameter	Unit	Ce	II 1	Ce	ll 2	Ce	3	Ce	ell 4	Cell 5		Cell 6		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Chanr	Channel 1 Channel 2			Channel 1 Channel 1		nel 1	Channel 2		Channel 2			
CPICH_Ec/lor	dB	- <u>9.9</u> -0.1	- <u>9.7</u> 9.9	- <u>9.7</u> 9.9	- <u>9.9</u> 10.1	- <u>9.9</u> 10	- <u>9.9</u> 10		- <u>9.9</u> 10		- <u>9.9</u> 10		- <u>9.9</u> 10	
PCCPCH_Ec/lor	dB	-12		-12	-	-12		-12		-12		-12		
\$CH_Ec/lor	dB	- <u>11.9</u> 12	$ \begin{array}{c c} - & & - \\ \underline{11.9} & -\underline{11.7} & \underline{11.7} \\ 12 & & 12 \end{array} $			- <u>11.9 12</u>		- <u>11.9 12</u>		- <u>11.9 12</u>		- <u>11.9 12</u>		
PICH_Ec/lor	dB	-15		-15		-15		-15		-15		-15		
S-CCPCH_Ec/lor	dB	-12		-12		-12		-12		-12		-12		
OCNS_Ec/lor	dB	1.282	1.309	-1.309	1.282	-1.295	-	-1.295		-1.295	0.4	-1.295	0.4	
\hat{I}_{or}/I_{oc}	dB	- <u>2.1</u> 3.7	<u>2.9</u> 2.5	<u>2.9</u> 2.5	- <u>2.1</u> 3.7	- <u>9.4</u> 7.4	- <u>/</u> 4.8	- <u>9.4</u> 7.4	- <u>/</u> 4 .8	- <u>/</u> 4.8	- <u>9.4</u> 7.4	- <u>/</u> 4.8	- <u>9.4</u> 7.4	
I _{oc}	dBm/3.8 4 MHz	-70	1	1	1		1	1	1	1	1	1	1	
CPICH_Ec/lo	dB	- <u>14.7</u> 16.3	- <u>12.1</u> 12.8	- <u>12.1</u> 12.8	- <u>14.7</u> 16.3	- <u>22</u> 19.9	- <u>22.2</u> 20.2	- <u>22</u> 19.9	- <u>22.2</u> 20.2	- <u>22.2</u> 20.2	- <u>22</u> 19.9	- <u>22.2</u> 20.2	- <u>22</u> 19.9	
Propagation Condition		AWGN	AWGN											
Cell_selection_ and_reselection_ quality_measure		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E₀/N₀		CPICH E _c /N ₀		CPICH E ₀ /N ₀		
Qqualmin	dB	-20		-20		-20		-20		-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, C2 C1, C2 C1, C4 C1, C4 C1, C4	2: 0 3: 0 4: 0 5: 0 6: 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		0		0		0		0		0		
Treselection	S	0		0		0		0		0		0		
Sintrasearch	dB	not se	nt	not sei	nt	not sei	nt	not se	nt	not se	nt	not sei	<u>nt</u>	
IE "FACH Measurement occasion info"	dB	not sent sent		sent	<u>nt</u>	sent	<u>nt</u>	sent	nt	Sent	nt	sent	<u>nt</u>	
FACH Measurement occasion cycle length coefficient		3		3	3			3		3		3		
Inter-frequency FDD measurement indicator		TRUE		TRUE		TRUE		TRUE		TRUE		TRUE		
Inter-frequency TDD measurement indicator		FALSE	Ξ	FALSE		FALSE	FALSE		FALSE		FALSE			

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.

8.3.5.3 Cell Reselection to GSM

Void.

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 [FFS]%.

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

TevaluateFDD	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.

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 and 8.3.6.1.2. 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.

	Parameter	ameter Unit		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
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 8.3.6.1.2: Cell specific test parameters for Cell re-selection in CELL_PCH state

Parameter	Unit	Ce	ell 1	Ce	12	Cel	13	Ce	II 4	Cell 5		Cel	l 6	
Farameter	Unit	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Chann	Channel 1		Channel 1		Channel 1		iel 1	Channel 1		Channel 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		-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		
I _{oc}	dBm/ 3.84MHz	-70												
CPICH_Ec/lo	dB	-16	-13	-13	-13 -16		-23 -23		-23		-23		-23	
Propagation Condition							AW	GN						
Cell_selection_and_ reselection_quality_ measure		CPICH	E _c /N ₀	CPICH E _c /N ₀		CPICH E _c /N ₀	CPICH E _c /N ₀		IE₀/N₀	CPICH E _c /N ₀		CPICH E _c /N ₀	1	
Qqualmin	dB	-:	20	-2	0	-2	0	-20		-20		-2	0	
Qrxlevmin	dBm	-1	15	-11	-115		5 -115		-115		-115			
UE_TXPWR_ MAX_RACH	dBm	2	21	2	1	2	l	2	21		21	21		
Qoffset2 _{s, n}	dB	C1, C1, C1, 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, C C3, C C3, C	1: 0 2: 0 4: 0 5: 0 6: 0	C4, 0 C4, 0 C4, 0 C4, 0 C4, 0 C4, 0	C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0)1: 0)2: 0)3: 0)4: 0)5: 0	
Qhyst2	dB	1	0	C)	0		(0		0	0		
Treselection	S		0	C)	0		()	0		0		
Sintrasearch	dB	not	sent	not s	sent	not sent not ser		sent	not sent		not s	not sent		

8.3.6.1.4.2 Procedure

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.6.1.23 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 7.4.2 to place the UE in CELL_PCH state.
- 4) The SS waits for random access requests from the UE on cell 2.

- 5) After 15 s, the parameters are changed as described for T2 in table 8.3.6.1.23.
- 6) The SS waits for random access requests from the UE.
- 7) If the UE responds on cell 1 within 8 s then the number of successful tests is increased by one.
- 8) After another 15 s, the parameters are changed as described for T1 in table 8.3.6.1.32.
- 9) The SS waits for random access requests from the UE.
- 10) If the UE responds on cell 2 within 8 s then the number of successful tests is increased by one.
- 11)Repeat step 5) to 10) [50] times.

8.3.6.1.5 Test requirements

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

Parameter	Unit	Ce	 1	Ce	II 2	Ce		Cel	4	Cell 5		Ce	 6
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channe Number	ਮ	Chanr	mel 1 Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		
CPICH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-10		-10		-10		10	
PCCPCH_Ec/lor	dB	<u>-12</u>		<u>-12</u>		<u>-12</u>		<u>-12</u>		<u>-12</u>		<u>12</u>	
SCH_Ec/lor	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/lor	dB	-15		-15		-15		-15		-15		-15	
OCNS_Ec/lor	dB	-0,928	0.953	-0,953	-0.928	-0.94 1	-	-0.941		-0.941		-0.941	
$\frac{\hat{I}_{or}}{I_{oc}}$	dB	7	-0,57	10,57	7	0,27		0,27		0,27		0,27	
-I _{oc}	dBm / 3,84 MHz	-70											
CPICH_Ec/lo	dB	-16.4	-12.7	-12.7	-16.4	-23.1		-23.1		-23.1		-23.1	
Propagation Condition			AWGN										
Cell_selection_an reselection_quality measure	d_ y_	CPICH	L E₀∕N₀	CPICH	<mark>€₀/N</mark> ₀	CPICH E₀/N ₀		CPICH E _c /N ₀		CPICH	ΙΕ₀/Ν ₀	CPICH	I-E₀∕N₀
Q qualmin	dB	-2	<u>20</u>	-2	<u>20</u>	-	20	-2	Ð	-2	<u>20</u>	-2	<u>20</u>
Qrxlevmin	dBm	-1	15	-1	15	4	-15	-11	5	-1	15	-1	15
UE_TXPWR_MA) RACH	← dB	2	<u>1</u>	2	4	7	24	2	ŀ	2	<u>1</u>	2	.1
Qcffset2 _{s, n}	dB	61, 61, 61, 61, 61,	C2: 0 C3: 0 C4: 0 C5: 0 C5: 0	C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C5: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C C4, C C4, C C4, C C4, C C4, C	C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0)1:0)2:0) 3:0)4:0)5:0
Qhyst2	dB	Ú	9	(()		0	0	θ		θ		•
Treselection	S	1	0	()		0	0		0		0	
Sintrasearch	dB	not	sent	not	sent	not sent		not sent		not sent		not	sent

Table 8.3.6.1.3: Test parameters for Cell re-selection single carrier multi cell

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.

8.3.6.2 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 [FFS]%.

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

TevaluateFDD	See table 4.1 in TS 25.133 [2] clause 4.2.2.
Tsi	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.

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 and 8.3.6.2.2. 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

	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
DRX cycle	length	S	1.28	The value shall be used for all cells in the test.
T1		S	30	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.

Parameter	Unit	Ce	II 1	Ce	ell 2	Cell 3		Ce	ell 4	Cell 5		Cell 6		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Chan	Channel 1 Channel 2 0		Chann	annel 1 Channel 1		Channel 2		Channel 2				
CPICH_Ec/lor	dB	-10		-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		
\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	
I _{oc}	dBm/3.8 4 MHz	-70												
CPICH_Ec/lo	dB	-16	-16 -13 -13 -16			-20		-20		-20		-20		
Propagation Condition		AWGN												
Cell_selection_ and_reselection_ quality_measure		CPIC Ec/No	Η	CPIC E _c /N ₀	Н	CPICH E _o /N ₀	ł	CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		
Qqualmin	dB	-2	<u>20</u>	-2	20	-20		-20		-20		-20		
Qrxlevmin	dBm	-1	15	-1	15	-11	5	-1	15	-11	5	-115		
UE_TXPWR_ MAX_RACH	dBm	2	1	2	21	2 [.]	l	2	21	21		2	1	
		C1,	C2: 0	C2,	C1: 0	C3, C	;1: 0	C4,	C1: 0	C5, C	1:0	C6,	C1: 0	
		C1,	C3: 0	C2,	C3: 0	C3, C	2: 0	C4,	C2: 0	C5, C	2:0	C6,	C2: 0	
Qoffset2 _{s, n}	dB	C1,	C4: 0	C2,	C4: 0	C3, C	:4: 0	C4,	C3: 0	C5, C	3: 0	C6,	C3: 0	
		C1,	C5: 0	C2,	C5: 0	C3, C	5: 0	C4,	C5: 0	C5, C	4:0	C6,	C4: 0	
		C1,	C6: 0	C2,	C2, C6: 0		6: 0	C4,	C6: 0	C5, C	6: 0	C6, C5: 0		
Qhyst2	dB)		0	0			0	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	

Table 8.3.6.2.2: Cell specific test parameters for Cell re-selection in CELL_PCH state

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 7.4.2 to place the UE in CELL_PCH state.
- 4) The SS waits for random access requests from the UE on cell 2.
- 5) After 30 s, the parameters are changed as described for T2 in table 8.3.6.2.3.
- 6) The SS waits for random access request from the UE. If the UE responds on cell 1 within 8 s then the number of successful tests is increased by one.
- 7) After another 15 s, the parameters are changed as described for T1 in table 8.3.6.2.3.
- 8) The SS waits for random access requests from the UE. If the UE responds on cell 2 within 8 s then the number of successful tests is increased by one.
- 9) Reduce T1 to 15 s and repeat step 5) to 8) [50] times.
- NOTE: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

8.3.6.2.5 Test requirements

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

Parameter	Unit	Ce	ell 1	Ce	ell 2	Ce	13	Cell 4		Cell 5		Cell 6		
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Char	nnel 1	Char	nnel 2	Chan	annel 1 Channel 1		Chan	Channel 2		Channel 2		
CPICH_Ec/lor	dB	- <u>9.9</u> 10.1	-9. <u>7</u> 9	-9. <u>7</u> 9	- <u>9.9</u> 10.1	- <u>9.9</u>	- <u>9.9 10</u>		- <u>9.9 10</u>		- <u>9.9</u> 10		- <u>9.9 </u> 10	
PCCPCH_Ec/lor	dB	-	12	-	12	-1	2	-	12	-^	12	-	12	
SCH_Ec/lor	dB	- <u>11.9</u> 12	<u>-11.7</u>	- <u>11.7</u> 12	<u>11.9</u>	- <u>11.</u>	<u>9 12 </u>	- <u>11</u>	<u>.9 12 </u>	- <u>11.</u>	- <u>11.9 12</u>		- <u>11.9 12</u>	
PICH_Ec/lor	dB	-	15	-	15	-1	5	-	15	-^	15	-	15	
OCNS_Ec/lor	dB	- <u>0.954</u> 0.928	- <u>0.982</u> 0.953	- <u>0.982</u> 0.953	- <u>0.954</u> 0.928	- <u>0.954</u>	<u>0.9</u> 41	- <u>0.95</u> 4	<u>1 0.9</u> 41	- <u>0.954</u>	<u>0.941</u>	- <u>0.95</u> 4	<u>1 0.941</u>	
\hat{I}_{or}/I_{oc}	dB	-3. <u>5</u> 7	2. <u>8</u> 5	2. <u>8</u> 5	-3. <u>5</u> 7	- <u>9.5</u> 7.4	- <u>7.7</u> 4 .8	- <u>9.5</u> 7.4	- <u>7.7</u> 4 .8	- <u>7.7</u> 4.8	- <u>9.5</u> 7.4	- <u>7.7</u> 4.8	- <u>9.5</u> 7.4	
I _{oc}	dBm / 3.84 MHz						-	70						
CPICH_Ec/lo	dB	- <u>15.6</u> 16.3	-12 .8	-12 .8	- <u>15.6</u> 16.3	- <u>21.6</u> 19.9	- <u>22.7</u> 20.2	- <u>21.6</u> 19.9	- <u>22.7</u> 20.2	- <u>22.7</u> 20.2	- <u>21.6</u> 19.9	- <u>22.7</u> 20.2	- <u>21.6</u> 19.9	
Propagation Condition							AW	'GN						
Cell_selection_and_ reselection_quality_ measure		CPICH	H E₀/N₀	CPICH	H E₀/N₀	CPICH			H E _c /N ₀	CPICH E _c /N ₀		CPIC	Η E _c /N ₀	
Qqualmin	dB	-2	20	-2	20	-2	0	-20		-20		-20		
Qrxlevmin	dBm	-1	15	-1	15	-11	15	-1	15	-1	15	-1	15	
UE_TXPWR_MAX_ RACH	dB	2	21	2	21	2	1	2	21	2	1	2	21	
Qoffset2 _{s, n}	dB	C1, C1, C1, 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		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0		C5, 0 C5, 0 C5, 0 C5, 0 C5, 0 C5, 0	C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0		C1: 0 C2: 0 C3: 0 C4: 0 C5: 0	
Qhyst2	dB	(0	(0	C)		0	(0		0	
Treselection	S		0		0	C)		0	()		0	
Sintrasearch	dB	not	sent	not	sent	not	sent	not	sent	not sent		not sent		
Sintersearch	dB	not	sent	not	sent	not s	sent	not	sent	not	not sent		not sent	

Table 8.3.6.2.3: Test parameters for Cell re-selection multi carrier multi cell

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.

8.3.7 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 [FFS]%.

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.
Tsi	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 and 8.3.7.1.2. 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: Ger	neral test parameters	for Cell Re-selection	in URA_PCH
----------------------	-----------------------	-----------------------	------------

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell2	
condition Neighbour cells			Cell1, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell1	
SYSTEM IN	NFORMATION BLOCK		0000 0000 0000 0001(B)	
TYPE 2		-	(Cell 1)	
- URA iden	tity list		0000 0000 0000 0002(B)	
- URA identity			(Cell 2)	
Access Service Class (ASC#0)				Selected so that no additional delay is
 Persistence value 		-	1	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.

Parameter	Unit	С	ell 1	Ce	ell 2	Ce	Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel Number		Chan	nel 1	Channe	el 1	Chann	Channel 1		el 1	Channel 1		Chann	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		-15		
OCNS_Ec/lor	dB	-0,94	1	-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		
I _{oc}	dBm / 3,84 MHz	-70												
CPICH_Ec/lo	dB	-16	-13	-13	-16 -23			-23		-23		-23		
Propagation Condition		AWGN												
Cell_selection_and_ reselection_quality_ measure		CPIC	H E₀/N₀	CPICH	E _c /N ₀	CPICH	CPICH E _c /N₀ CPICH		E _c /N ₀	CPICI	H E₀/N₀	CPICH	Η E₀/N₀	
Qqualmin	dB	-	20	-2	20	-2	20	-20)	-20		-20		
Qrxlevmin	dBm	-'	115	-1	15	-11	15	-11	5	-1	15	-115		
UE_TXPWR_MAX_ RACH	dB		21	2	21	2	1	21		2	21	2	21	
Qoffset2 _{s, n}	dB	C1, C1, C1, C1, C1, C1,	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	C2, C2, C2, C2, C2, C2,	C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C1: 0 C2: 0 C4: 0 C5: 0 C6: 0	C4, C C4, C C4, C C4, C C4, C C4, C	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		0		0	
Treselection	S		0		0	0)	0			0	0		
Sintrasearch	dB	no	sent	not	sent	nots	sent	not s	not sent		not sent		not sent	

 Table 8.3.7.1.2: Cell specific test parameters for Cell re-selection in URA_PCH state

8.3.7.1.4.2 Procedure

- 1) The SS activates cell 1-6 with T1 defined parameters in table 8.3.7.1.23 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 8.3.7.1.23.
- 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 8.3.7.1.23.
- 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 a total of [TBD] successes and failures have been recorded.

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

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 [FFS]% of the cases.

	Parameter	Unit	Ce	əll 1	Ce	 2	Cell 3		Cell 4		Cell 5		Cell 6		
			T 1	T2	T1	T2	T 1	T2	T1	T2	T1	T2	T1	T2	
UT	RA RF Channel		Chan	nol 1	Channe	1 1	Chan	nol 1	Chann		Chapr	nol 1	Chapr	nol 1	
Nu	mber		Спан		ыынк	9 1						Спанны т			
CF	HCH_Ec/lor	dB	-10.1	-9.9	-9.9	-10.1	-10	-10			-10	10		-10	
P	CPCH_Ec/lor	dB	<u>-12</u>		<u>-12</u>		-12		<u>-12</u>		-12		<u>12</u>		
SC	H_Ec/lor	dB	-12		-12		-12		-12		-12		-12	12	
PI(CH_Ec/lor	dB	-15		-15		-15		-15		-15		-15		
00	NS_Ec/lor	dB	-0.928	-0.953	-0.953	-0.928	-0.94	1	-0.941	-	-0.94 1	-	-0.941	ł	
\hat{I}_o	r/I_{oc}	dB	7	10.57	10.57	7	0.27		0.27		0.27		0.27		
I_{o}	<u>,</u>	dBm./ 3.84 MHz	-70												
CF	HCH_Ec/lo	dB	-16.4	-12.7	<u>-12.7</u>	-16.4	-23.1	<u>-23.1</u> <u>-23.1</u>			<u>-23.1</u> <u>-23</u>		<u>-23.1</u>		
Pre	pagation							۸۱۸/							
Co	ndition				-		-	/\vv							
Ce	Il_selection_and_														
ree	election_quality_		CPIC	H-E₀/N₀	CPICH	E _c /N ₀			CPICI	ΙΕ₀/Ν ₀	CPICI	∃E₀/N ₀			
me	asure														
Qe	ualmin	dB	-	20	-2	20	-	-20	-2	20	-20		-20		
Qr	klevmin	dBm		 15	-1	15		115	-1	15	-1	15	-1	15	
UE RA		d₿	4	21	2	<u>:1</u>	÷	21	2	21	2	<u>21</u>	ź	<u>24</u>	
			C1,	<u>C2: 0</u>	C2, (C1: 0	C3,	C1: 0	C4, I	C1: 0	C5,	C1: 0	C6, C1: 0		
			C1,	C3: 0	C2, (C3: 0	C3,	C2: 0	C4, (C2: 0	C5,	C2: 0	C6, C2: 0		
Qc	ffset2_{s, n}	dB	C1,	C4: 0	C2, (C4: 0	C3,	C4: 0	C4, 4	C3: 0	C5,	C5, C3: 0		C6, C3: 0	
			C1,	C5: 0	C2, (C5: 0	C3,	C5: 0	C4, C5: 0		C5, C4: 0		C6, C4: 0		
			C1,	C6: 0	C2, (C6: 0	C3,	C6: 0	C 4, 4	C6: 0	C5, C6: 0		C6, C5: 0		
Qh	yst2	dB		0	(9		θ		0		0		0	
Tre	selection	8		0	(5		0		0		0		0	
Sir	trasearch	dB	not	sent	not	sent	not	tsent	not	sent	not	sent	not	sent	

Table 8.3.7.1.3: Test parameters for Cell re-selection single carrier multi cell

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.

8.3.7.2 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 [FFS]%.

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

TevaluateFDD	See table 4.1 in TS 25.133 [2] clause 4.2.2.
Tsi	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 and 8.3.7.2.2. 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

	Parameter	Unit	Value	Comment
Initial	Active cell		Cell2	
condition Neighbour cells			Cell1, Cell3,Cell4, Cell5, Cell6	
Initial Active cell Cell2 condition			Cell1	
SYSTEM INFORMATION BLOCK TYPE 2 - URA identity list - URA identity		-	0000 0000 0000 0001(B) (Cell 1) 0000 0000 0000 0002(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	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.

Parameter	Unit	Cel	l 1	Cel	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		Chanı	Channel 1		Channel 2 Channel 1		Channel 1		Channel 2		Cha	nnel 2	
CPICH_Ec/lor	dB	-1	0	-1	0	-1	0	-	10	-1	0	-10	
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2	-	12	-1	2	-	·12
SCH_Ec/lor	dB	-1	2	-1	2	-1	2	-	12	-1	2	-	12
PICH_Ec/lor	dB	-1	5	-1	5	-1	5	-	15	-1	5	-	15
OCNS_Ec/lor	dB	-0.9	41	-0.9	41	-0.9	41	-0.	941	-0.9	41	-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
I _{oc}	dBm / 3.84 MHz	-70											
CPICH_Ec/lo	dB	-16	-13	-13	-16	-20)	-:	20	-20)	-	20
Propagation Condition							AW	'GN					
Cell_selection_and_ reselection_quality_ measure		CPICH	E _c /N ₀	CPICH	E _c /N ₀	CPICH	E _c /N ₀	CPICI	H E₀/N₀	CPICH	E _c /N ₀	CPIC	H E₀/N₀
Qqualmin	dB	-2	0	-20)	-20)	-;	20	-20)	-	20
Qrxlevmin	dBm	-11	5	-11	5	-11	5	-1	15	-11	5	-1	15
UE_TXPWR_MAX_ RACH	dB	21	1	21		21		2	21	21		2	21
Qoffset2 _{s, n}	dB	C1, C C1, C C1, C C1, C C1, C	2: 0 3: 0 4: 0 5: 0 6: 0	C2, C C2, C C2, C C2, C C2, C C2, C	21: 0 23: 0 24: 0 25: 0 26: 0	C3, C C3, C C3, C C3, C C3, C C3, C	1: 0 2: 0 4: 0 5: 0 6: 0	C4, C4, C4, C4, C4, C4,	C1: 0 C2: 0 C3: 0 C5: 0 C6: 0	C5, C C5, C C5, C C5, C C5, C	1: 0 2: 0 3: 0 4: 0 6: 0	C6, C6, C6, C6, C6,	C1: 0 C2: 0 C3: 0 C4: 0 C5: 0
Qhyst2	dB	0		0		0			0	0			0
Treselection	S	0		0		0			0	0			0
Sintrasearch	dB	not s	ent	not s	ent	not s	ent	not	sent	not s	ent	not	sent
Sintersearch	dB	not s	ent	not s	ent	not s	ent	not	sent	not s	ent	not	sent

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 a total of [TBD] successes and failures have been recorded.

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), alow 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

8.3.7.2.5 Test requirements

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

Table 8.3.7.2.3: Test	parameters for Cel	I re-selection mult	i carrier multi cell
-----------------------	--------------------	---------------------	----------------------

Parameter	Unit	Ce	II 1	Ce	ll 2	Ce	II 3	Ce	Cell 4		Cell 5		ll 6
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Char	nnel 1	Char	nnel 2	Char	nnel 1	Chan	inel 1	Char	nel 2	Chan	inel 2
CPICH_Ec/lor	dB	- <u>9.9</u> 10.1	-9. <u>7</u> 9	-9. <u>7</u> 9	- <u>9.9</u> 10.1	- <u>9.</u>	<u>9</u> 10	- <u>9.</u>	<u>9</u> 10	- <u>9.</u>	<u>9</u> 10	- <u>9.</u>	<u>9</u> 10
PCCPCH_Ec/lor	dB	-'	12	-	12	-'	12	- ^	12	-'	12	- ^	12
SCH_Ec/lor	dB	- <u>11.9</u> 12	<u>-11.7</u>	- <u>11.7</u> 12	<u>-11.9</u>	- <u>11</u>	<u>.9</u> 12	- <u>11</u>	<u>.912</u>	- <u>11</u>	<u>.9</u> 12	- <u>11</u>	<u>.912</u>
PICH_Ec/lor	dB	-'	15	-	15	-'	15	-^	15	-1	15	-1	15
OCNS_Ec/lor	dB	- <u>0.954</u> 0.928	- <u>0.982</u> 0.953	- <u>0.982</u> 0.953	- <u>0.954</u> 0.928	- <u>0.95</u> 4	<u>0.941</u>	- <u>0.954</u>	<u>0.941</u>	- <u>0.954</u>	<u>0.941</u>	- <u>0.954</u>	<u>0.941</u>
\hat{I}_{or}/I_{oc}	dB	-3. <u>5</u> 7	2. <u>8</u> 5	2. <u>8</u> 5	-3. <u>5</u> 7	- <u>9.5</u> 7.4	- <u>7.7</u> 4.8	- <u>9.5</u> 7.4	- <u>7.7</u> 4 .8	- <u>7.7</u> 4 .8	- <u>9.5</u> 7.4	- <u>7.7</u> 4.8	- <u>9.5</u> 7.4
I _{oc}	dBm / 3.84 MHz						7()					
CPICH_Ec/lo	dB	- <u>15.6</u> 16.3	-12 .8	-12 .8	- <u>15.6</u> 16.3	- <u>21.6</u> 19.9	- <u>22.7</u> 20.2	- <u>21.6</u> 19.9	- <u>22.7</u> 20.2	- <u>22.7</u> 20.2	- <u>21.6</u> 19.9	- <u>22.7</u> 20.2	- <u>21.6</u> 19.9
Propagation Condition				_			AW	'GN					
Cell_selection_and_ reselection_quality_ measure		CPICH	Η E _c /N₀	CPICH	H E _c /N ₀	CPICH	HE₀/N₀	CPICH	IE _c /N ₀	CPICH	I E _c /N ₀	CPICH	I E _c /N ₀
Qqualmin	dB	-2	20	-2	20	-2	20	-2	20	-2	20	-2	20
Qrxlevmin	dBm	-1	15	-1	15	-1	15	-1	15	-1	15	-1	15
UE_TXPWR_MAX_ RACH	dB	2	21	2	21	2	1	2	1	2	1	2	1
Qoffset2 _{s, n}	dB	C1, 0 C1, 0 C1, 0 C1, 0 C1, 0	C2: 0 C3: 0 C4: 0 C5: 0 C6: 0	C2, C2, C2, C2, C2, C2, C2,	C1: 0 C3: 0 C4: 0 C5: 0 C6: 0	C3, 0 C3, 0 C3, 0 C3, 0 C3, 0	C1: 0 C2: 0 C4: 0 C5: 0 C6: 0	C4, 0 C4, 0 C4, 0 C4, 0 C4, 0 C4, 0	C1: 0 C2: 0 C3: 0 C5: 0 C6: 0	C5, 0 C5, 0 C5, 0 C5, 0 C5, 0	C1: 0 C2: 0 C3: 0 C4: 0 C6: 0	C6, 0 C6, 0 C6, 0 C6, 0 C6, 0	C1: 0 C2: 0 C3: 0 C4: 0 C5: 0
Qhyst2	dB	(0		0	(0	()	(C	()
Treselection	S	(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	sent	not	sent	not	sent	not	sent

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.

CHANGE REQUEST									
æ	34.121 CR 234 # rev - #	Current version: 3.10.0 [#]							
For HELP on using this form, see bottom of this page or look at the pop-up text over the # symbols.									
Proposed chang	Proposed change affects: UICC apps # ME X Radio Access Network Core Network								
Title:	Correction of UL reference measurement channe	əl							
Source:	ᢞ <mark>T1/RF</mark>								
Work item code:	ж <mark>-</mark>	Date:							
Category:	 F Use <u>one</u> 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 <u>TR 21.900</u>. 	Release: %R99Use 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: ೫	Subclause 7.1.1: Currently 34.121 states that "Transmission Power Control is always disable during the measurements" . However, Section 7.1 already states that "Unless stated otherwise, DL power control is OFF." Hence, the statement in Section 7.1.1 may be misinterpreted. Annex C: A continuous transmission is required in DL DCCH for testing the UE receiver. However, the UE RX tests do not require UL DCCH continuous transmission. Furthermore, on the UE maximum power continuous DCCH transmission blocks loopback channel (DTCH). Hence, the UL DCCH dummy transmission should not be used in the UE receiver tests in section 6 and performance tests in section 7. As an exception, previous statements are not applied in BTFD test case (34.121 clause 7.10). The reference measurement channel configurations for BTFD test case will be be studied later on.
	without a continuous transmission on the UL DCCH. Furthermore, on the UE maximum power continuous UL DCCH transmission would block DTCH and therefore only DCCH would be sent. If only DCCH is sent, UL data rate is a lot lower than in the original reference measurement channel. It is not necessarily a problem in the tests but it does not seem the best choice.
Summary of change: #	Subclause 7.1.1: It is clarified that the UE max transmission power is guaranteed by the configuration used and the sentence "Transmission Power Control is always disable during the measurements" is removed.
	Annex C.2: All UL reference measurement channel DCCH and DTCH configurations are modified to consist of RLC and MAC parameters together

		with L1 parameters and to ensure the transmission of loopback channel (DTCH) on the UE maximum power in the UE receiver test cases.				
Consequences if not approved:	¥	A UE behaving correctly may not pass the test cases where loop back mode is set up using the current reference measurement channel configurations defined in 34.121 Annex C, since current configurations do not guarantee the transmission of Loopback data with maximum uplink transmit power in the test cases.				
Clauses affected:	¥	711 Appex C 21 Appex C 22 Appex C 23 Appex C 24 Appex C 25				
Other specs affected:	x	YN X Other core specifications % X Test specifications %				

Other comments:	ж	

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 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 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.

The method for Block Error Ratio (BLER) measurement is specified in 3GPP TS 34.109 [4].

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

Table 7.1.1: Bit / Symbol rate for Test Channel

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

7.1.1 Measurement Configurations

In all measurements UE should transmit with maximum power while receiving signals from Node B. <u>This is guaranteed</u> by the measurement configurations defined in Annex C (i.e. if the DTCH-DCH TFS consists of a single transport format, it is not blocked by the UE as stated in 3GPP TS 25.331). <u>Transmission Power Control is always disable during</u> the measurements. Chip Rate is specified to be 3,84 MHz.

It as assumed that fields inside DPCH have the same energy per PN chip. Also, if the power of S-CCPCH is not specified in the test parameter table, it should be set to zero. The power of OCNS should be adjusted that the power ratios (E_c/I_{or}) of all specified forward channels add up to one.

Measurement configurations for different scenarios are shown in figure A.9, figure A.10 and figure A.11.

Annex C (normative): Measurement channels

C.1 General

The measurement channels in this annex are defined to derive the requirements in clauses 5, 6 and 7. The measurement channels represent example configuration of radio access bearers for different data rates.

The measurement channel for 12,2 kbps shall be supported by any UE both in up- and downlink. Support for other measurement channels is depending on the UE Radio Access capabilities.

C.2 UL reference measurement channel

C.2.1 UL reference measurement channel (12,2 kbps)

The parameters for the 12,2 kbps UL reference measurement channel are specified in table C.2.1.1 and table C.2.1.2. The channel coding for information is shown in figure C.2.1. When the UE test loop function is needed, the UE test loop mode 1 shall be used and uplink dummy DCCH shall be disabled. The uplink dummy DCCH may be used in the UE transmitter tests in Section 5.

Table C.2.1.1: UL reference measurement channel physical parameters (12,2 kbps)

Parameter	Level	Unit				
Information bit rate	12,2	kbps				
DPDCH	60	kbps				
DPCCH	15	kbps				
DPCCH Slot Format #i	0	-				
DPCCH/DPDCH power ratio	-5,46	dB				
TFCI	On	-				
Repetition	23	%				
NOTE: Slot Format #2 is used for closed loop tests in clause 7.6.2. Slot Format #2 and						
#5 are used for site sele	ction diversity transmission to	ests in subclause 7.6.3.				

Table C.2.1.2: UL reference measurement channel, transport channel parameters (12.2 kbps)

Parameters	DTCH	DCCH
Transport Channel Number	4	2
Transport Block Size	2 44	100
Transport Block Set Size	2 44	100
Transmission Time Interval	20 ms	40 ms
Type of Error Protection	Convolution Coding	Convolution Coding
Coding Rate	1/3	1/3
Rate Matching attribute	256	256
Size of CRC	16	12

<u>Higher</u> Laver	RAB/Signa	alling RB	RAB	<u>SRB</u>
RLC	Logical ch	annel type	DTCH	DCCH
	RLC mode		TM	UM/AM
	Payload s	zes, bit	244	88/80
	Max data	rate, bps	<u>12200</u>	<u>3400</u>
	PDU head	er, bit	<u>N/A</u>	<u>8/16</u>
	TrD PDU I	<u>neader, bit</u>	<u>0</u>	<u>N/A</u>
MAC	MAC head	ler, bit	<u>0</u>	4
	MAC mult	plexing	<u>N/A</u>	<u>Yes</u>
Layer 1	TrCH type		<u>DCH</u>	<u>DCH</u>
	Transport	Channel Number	<u>1</u>	<u>2</u>
	TB sizes,	<u>oit</u>	<u>244</u>	<u>100</u>
	<u>TFS</u>	TF0, bits	<u>0*244</u>	<u>0*100</u>
		TF1, bits	<u>1*244</u>	<u>1*100</u>
	<u>TTI, ms</u>		<u>20</u>	<u>40</u>
	Coding typ	<u>De</u>	Convolution Coding	Convolution Coding
	Coding Ra	<u>ite</u>	<u>1/3</u>	<u>1/3</u>
	CRC, bit		<u>16</u>	<u>12</u>
	Max numb	er of bits/TTI after channel coding	<u>804</u>	<u>360</u>
	Uplink: Ma	x number of bits/radio frame before	<u>402</u>	<u>90</u>
	rate match	ing		
	RM attribu	<u>te</u>	<u>256</u>	<u>256</u>



Figure C.2.1 (Informative): Channel coding of UL reference measurement channel (12,2 kbps)

C.2.2 UL reference measurement channel (64 kbps)

The parameters for the 64 kbps UL reference measurement channel are specified in table C.2.2.1 and table C.2.2.2. The channel coding for information is shown in figure C.2.2. When the UE test loop function is needed, the UE test loop mode 1 shall be used and uplink dummy DCCH shall be disabled. This measurement channel is not currently used in the present document but can be used for future requirements.

Parameter	Level	Unit
Information bit rate	64	Kbps
DPDCH	240	Kbps
DPCCH	15	Kbps
DPCCH Slot Format #i	0	-
DPCCH/DPDCH	-9,54	DB
TFCI	On	-
Repetition	18	%

Table C.2.2.1: UL reference measurement channel (6	64 kbp	วร)
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Table C.2.2.2: UL reference measurement channel	, transport channel	parameters	(64 kbps))
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Parameter	DTCH	DCCH
Transport Channel Number	4	2
Transport Block Size	1 280	100
Transport Block Set Size	1 280	100
Transmission Time Interval	20 ms	40 ms
Type of Error Protection	Turbo Coding	Convolution Coding
Coding Rate	1/3	1/3
Rate Matching attribute	256	256
Size of CRC	16	<u>12</u>

Higher	RAB/Signalling RB	RAB	<u>SRB</u>
<u>Layer</u>			
<u>KLC</u>	<u>El C</u> mode	тм	
	Rec mode Payload sizes, bit	1280	88/80
	Max data rate, bos	64000	3/100
	PDU beader bit	<u>04000</u> N/A	<u> </u>
	TrD PDI beader, bit	0	<u>0/10</u> Ν/Δ
MAC	MAC beader, bit	0	1
	MAC multiplexing	<u>U</u> N/A	<u>T</u> Ves
Lover 1			
	Transport Channel Number	1	2
	TB sizes bit	<u>1</u> 1280	100
	TES TEO bite	0*1280	0*100
	TE1 bits	1*1280	1*100
	TTI ms	20	40
	Coding type	Turbo Coding	Convolution Coding
	Coding Rate	N/A	1/3
	CRC bit	16	12
	Max number of bits/TTL after channel coding	3900	360
	Uplink: Max number of bits/radio frame before	1950	90
	rate matching		<u></u>
	RM attribute	<u>256</u>	256



Figure C.2.2 (Informative): Channel coding of UL reference measurement channel (64 kbps)

C.2.3 UL reference measurement channel (144 kbps)

The parameters for the 144 kbps UL reference measurement channel are specified in table C.2.3.1 and table C.2.3.2. The channel coding for information is shown in figure C.2.3. When the UE test loop function is needed, the UE test loop mode 1 shall be used and uplink dummy DCCH shall be disabled. This measurement channel is not currently used in the present document but can be used for future requirements.

Parameter	Level	Unit
Information bit rate	144	kbps
DPDCH	480	kbps
DPCCH	15	kbps
DPCCH Slot Format #i	0	-
DPCCH/DPDCH power ratio	-11,48	dB
TFCI	On	-
Repetition	8	%

Fable C.2.3.1: UL reference mea	asurement channel (144 kbps)
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Table C.2.3.2: UL reference measurement channe	, transport channel parameters (1	44 kbps)
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Parameters	DTCH	DCCH
Transport Channel Number	1	2
Transport Block Size	2 880	100
Transport Block Set Size	2 880	100
Transmission Time Interval	20 ms	4 0 ms
Type of Error Protection	Turbo Coding	Convolution Coding
Coding Rate	1/3	1/3
Rate Matching attribute	256	256
Size of CRC	16	<u>12</u>

<u>Higher</u>	RAB/Signalling RB	RAB	<u>SRB</u>
<u>Layer</u>			
<u>RLC</u>	Logical channel type	DTCH	DCCH
	RLC mode	TM	<u>UM/AM</u>
	Payload sizes, bit	<u>1280</u>	<u>88/80</u>
	Max data rate, bps	<u>144000</u>	<u>3400</u>
	PDU header, bit	<u>N/A</u>	<u>8/16</u>
	TrD PDU header, bit	<u>0</u>	<u>N/A</u>
MAC	MAC header, bit	<u>0</u>	4
	MAC multiplexing	<u>N/A</u>	Yes
Layer 1	TrCH type	DCH	DCH
	Transport Channel Number	<u>1</u>	<u>2</u>
	TB sizes, bit	<u>2880</u>	<u>100</u>
	TFS TF0, bits	<u>0*2880</u>	<u>0*100</u>
	TF1, bits	<u>1*2880</u>	<u>1*100</u>
	TTI, ms	<u>20</u>	<u>40</u>
	Coding type	Turbo Coding	Convolution Coding
	Coding Rate	<u>N/A</u>	<u>1/3</u>
	CRC, bit	<u>16</u>	<u>12</u>
	Max number of bits/TTI after channel coding	<u>8700</u>	<u>360</u>
	Uplink: Max number of bits/radio frame before	<u>4350</u>	<u>90</u>
	rate matching		
	RM attribute	256	<u>256</u>







Figure C.2.3 (Informative): Channel coding of UL reference measurement channel (144 kbps)

C.2.4 UL reference measurement channel (384 kbps)

The parameters for the 384 kbps UL reference measurement channel are specified in table C.2.4.1 and table C.2.4.2. The channel coding for information is shown in figure C.2.4. When the UE test loop function is needed, the UE test loop mode 1 shall be used and uplink dummy DCCH shall be disabled. This measurement channel is not currently used in the present document but can be used for future requirements.

Table C.2.4.1: UI	_ reference	measurement	channel	(384	kbps)
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Parameter	Level	Unit
Information bit rate	384	kbps
DPDCH	960	kbps
DPCCH	15	kbps
DPCCH Slot Format #i	0	-
DPCCH/DPDCH power ratio	-11,48	dB
TFCI	On	-
Puncturing	18	%

Table C.2.4.2: UL reference measurement channel, transport channel parameters (384 kbps)

Parameter	DTCH	DCCH
Transport Channel Number	4	2
Transport Block Size	3 840	100
Transport Block Set Size	3 840	100
Transmission Time Interval	10 ms	40-ms
Type of Error Protection	Turbo Coding	Convolution Coding
Coding Rate	1/3	1/3
Rate Matching attribute	256	256
Size of CRC	16	12

Higher	RAB/Signalling RB	RAB	<u>SRB</u>
<u>Layer</u>			
<u>RLC</u>	Logical channel type	DTCH	DCCH
	RLC mode	TM	UM/AM
	Payload sizes, bit	<u>3840</u>	<u>88/80</u>
	Max data rate, bps	384000	3400
	PDU header, bit	N/A	8/16
	TrD PDU header, bit	<u>0</u>	<u>N/A</u>
MAC	MAC header, bit	<u>0</u>	4
	MAC multiplexing	N/A	Yes
Layer 1	TrCH type	DCH	DCH
	Transport Channel Number	1	2
	TB sizes, bit	3840	<u>100</u>
	TFS TF0, bits	0*3840	0*100
	TF1, bits	1*3840	<u>1*100</u>
	TTI, ms	<u>10</u>	<u>40</u>
	Coding type	Turbo Coding	Convolution Coding
	Coding Rate	N/A	1/3
	CRC, bit	<u>16</u>	<u>12</u>
	Max number of bits/TTI after channel coding	<u>11580</u>	<u>360</u>
	Uplink: Max number of bits/radio frame before	<u>11580</u>	<u>90</u>
	rate matching		
	RM attribute	256	256



Figure C.2.4 (informative): Channel coding of UL reference measurement channel (384 kbps)

C.2.5 UL reference measurement channel (768 kbps)

The parameters for the UL measurement channel for 768 kbps are specified in table C.2.5.1 and table C.2.5.2. When the UE test loop function is needed, the UE test loop mode 1 shall be used and uplink dummy DCCH shall be disabled.

Table C.2.5.1: UL reference measurement channel, physical parameters (768 kbps)

Parameter	Level	Unit
Information bit rate	2*384	kbps
DPDCH ₁	960	kbps
DPDCH ₂	960	kbps
DPCCH	15	kbps
DPCCH Slot Format #i	0	-
DPCCH/DPDCH power ratio	-11.48	dB
TFCI	On	-
Puncturing	18	%

Table C.2.5.2: UL reference measurement channel, transport channel parameters (768 kbps)

Parameter	DTCH	DCCH
Transport Channel Number	1	2
Transport Block Size	3 840	100
Transport Block Set Size	7 680	100
Transmission Time Interval	10 ms	40 ms
Type of Error Protection	Turbo Coding	Convolution Coding
Coding Rate	1/3	1/3
Rate Matching attribute	256	256
Size of CRC	16	12

<u>Higher</u> Layer	RAB/Signalling RB		RAB	<u>SRB</u>
RLC	Logical channel type		DTCH	DCCH
	RLC mode	2	TM	UM/AM
	Payload s	izes, bit	<u>3840</u>	<u>88/80</u>
	Max data	rate, bps	<u>768000</u>	<u>3400</u>
	PDU head	ler, bit	<u>N/A</u>	<u>8/16</u>
	TrD PDU header, bit		<u>0</u>	<u>N/A</u>
MAC	<u>MAC header, bit</u> MAC multiplexing		<u>0</u>	<u>4</u>
			<u>N/A</u>	Yes
Layer 1	er 1 <u>TrCH type</u> <u>Transport Channel Number</u> <u>TB sizes, bit</u>		<u>DCH</u>	<u>DCH</u>
			<u>1</u>	<u>2</u>
			<u>3840</u>	<u>100</u>
	<u>TFS</u>	TF0, bits	<u>0*3840</u>	<u>0*100</u>
		TF1, bits	<u>1*3840</u>	<u>1*100</u>
	TTI, ms Coding type Coding Rate CRC, bit Max number of bits/TTI after channel coding Uplink: Max number of bits/radio frame before		<u>10</u>	<u>40</u>
			Turbo Coding	Convolution Coding
			<u>N/A</u>	<u>1/3</u>
			<u>16</u>	<u>12</u>
			<u>23160</u>	<u>360</u>
			<u>23160</u>	<u>90</u>
	rate matching			
RM attribute		<u>256</u>	<u>256</u>	