Technical Specification Group Terminals Meeting #21, Frankfurt, Germany, 17 - 19 September 2003

Source:	T1
Title:	CR's to TS 34.121 v3.13.0, 4.0.0 and v5.0.0 for approval
Agenda item:	5.1.3
Document for:	Approval

This document contains the CRs to TS 34.121 v3.13.0, 4.0.0 and v5.0.0. These CRs have been agreed by T1 and are put forward to TSG T for approval.

Specific CRs:

Tdoc #	CR #	Rev	Phase	Title	cat	Versio n in	Versi on out	WI	Conclusion
<u>T1-031235</u>	294	0	Rel-99	CR to delete the technical content of 34.121 Rel 99 and replace it by a pointer to the gathered releases document	F	3.13.0	3.14.0	TEI	Approved.
<u>T1-031236</u>	295	0	Rel-4	CR to delete the technical content of 34.121 Rel 4 and replace it by a pointer to the gathered releases document	A	4.0.0	4.1.0	TEI4	Approved.

CRs applicable to Releases 99, 4 and 5:

Tdoc #	CR #	Rev	Phase	Title	cat	Versio n in	Versi on out	WI	Conclusion
<u>T1-030796</u>	251	0	Rel-5	Creation of a merged release for 34.121 which incorporates R99 and Rel-4	F	5.0.0	5.1.0	TEI5	Approved.
<u>T1-030814</u>	253	0	Rel-99	CR to 34.121 R99; Addition of test case details for RRM test case 8.3.5.3 (Cell Reselection to GSM in Cell_FACH)	F	3.13.0	5.1.0	TEI	Approved.
<u>T1-030815</u>	254	0	Rel-4	CR to 34.121 REL-4; Addition of test case details for RRM test case 8.3.5.3 (Cell Reselection to GSM in Cell_FACH)	A	4.0.0	5.1.0	TEI4	Approved.
<u>T1-030816</u>	255	0	Rel-5	CR to 34.121 REL-5; Addition of test case details for RRM test case 8.3.5.3 (Cell Reselection to GSM in Cell_FACH)	A	5.0.0	5.1.0	TEI5	Approved.
<u>T1-030817</u>	256	0	Rel-99	Correction of SSDT performance test case (R99)	F	3.13.0	5.1.0	TEI	Approved.
<u>T1-030818</u>	257	0	Rel-4	Correction of SSDT performance test case (Rel-4)	А	4.0.0	5.1.0	TEI4	Approved.
<u>T1-030819</u>	258	0	Rel-5	Correction of SSDT performance test case (Rel-5)	А	5.0.0	5.1.0	TEI5	Approved.
<u>T1-030841</u>	261	0	Rel-99	Test Requirements for RRM CPICH RSCP Inter Frequency Measurement	F	3.13.0	5.1.0	TEI	Approved.
<u>T1-030842</u>	262	0	Rel-4	Test Requirements for RRM CPICH RSCP Inter Frequency Measurement	A	4.0.0	5.1.0	TEI4	Approved.
<u>T1-030843</u>	263	0	Rel-5	Test Requirements for RRM CPICH RSCP Inter Frequency Measurement	Α	5.0.0	5.1.0	TEI5	Approved.

<u>T1-030859</u>	264	0	Rel-99	Test Requirements for RRM CPICH RSCP Intra Frequency Measurement	F	3.13.0	5.1.0	TEI	Approved.
<u>T1-030860</u>	265	0	Rel-4	Test Requirements for RRM CPICH RSCP Intra Frequency Measurement	А	4.0.0	5.1.0	TEI4	Approved.
<u>T1-030861</u>	266	0	Rel-5	Test Requirements for RRM CPICH RSCP Intra Frequency Measurement	А	5.0.0	5.1.0	TEI5	Approved.
<u>T1-030862</u>	267	0	Rel-99	Correction to RRC Re-establishment delay test case (R99)	F	3.13.0	5.1.0	TEI	Approved
<u>T1-030863</u>	268	0	Rel-4	Correction to RRC Re-establishment delay test case (Rel-4)	А	4.0.0	5.1.0	TEI4	Approved
<u>T1-030864</u>	269	0	Rel-5	Correction to RRC Re-establishment delay test case (Rel-5)	А	5.0.0	5.1.0	TEI5	Approved
<u>T1-030865</u>	270	0	Rel-99	CR to 34.121 R99; Correction to SFN-SFN observed time difference type 1	F	3.13.0	5.1.0	TEI	Approved.
<u>T1-030866</u>	271	0	Rel-4	CR to 34.121 Rel-4; Correction to SFN-SFN observed time difference type 1	А	4.0.0	5.1.0	TEI4	Approved.
<u>T1-030867</u>	272	0	Rel-5	CR to 34.121 Rel-5; Correction to SFN-SFN observed time difference type 1	А	5.0.0	5.1.0	TEI5	Approved.
<u>T1-031108</u>	277	0	Rel-99	CR to 34.121 R99; Correction to CPICH Ec/Io in correct reporting of neighbours in AWGN propagation condition test case	F	3.13.0	5.1.0	TEI	Approved.
<u>T1-031109</u>	278	0	Rel-4	CR to 34.121 Rel-4; Correction to CPICH Ec/Io in correct reporting of neighbours in AWGN propagation condition test case	4	4.0.0	5.1.0	TEI4	Approved.
<u>T1-031110</u>	279	0	Rel-5	CR to 34.121 Rel-5; Correction to CPICH Ec/Io in correct reporting of neighbours in AWGN propagation condition test case		5.0.0	5.1.0	TEI5	Approved.
<u>T1-031182</u>	280	0	Rel-99	Test Requirements for RRM CPICH Ec/lo Intra Frequency Measurement	F	3.13.0	5.1.0	TEI	Approved.
<u>T1-031183</u>	281	0	Rel-4	Test Requirements for RRM CPICH Ec/lo Intra Frequency Measurement	А	4.0.0	5.1.0	TEI4	Approved.
<u>T1-031184</u>	282	0	Rel-5	CR Rel 5 Test requirements for RRM CPICH_Ec/Io Intra Frequency Measurement	А	5.0.0	5.1.0	TEI5	Approved.
<u>T1-031188</u>	283	0	Rel-99	Test Requirements for RRM CPICH Ec/Io Inter Frequency Measurement	F	3.13.0	5.1.0	TEI	Approved.
<u>T1-031189</u>	284	0	Rel-4	Test Requirements for RRM CPICH Ec/Io Inter Frequency Measurement	А	4.0.0	5.1.0	TEI4	Approved.
<u>T1-031190</u>	285	0	Rel-5	Test Requirements for RRM CPICH Ec/Io Inter Frequency Measurement	А	5.0.0	5.1.0	TEI5	Approved.
<u>T1-031191</u>	286	0	Rel-99	Test requirements for RRM Random Access tests	F	3.13.0	5.1.0	TEI	Approved.
<u>T1-031192</u>	287	0	Rel-4	Test requirements for RRM Random Access Test	А	4.0.0	5.1.0	TEI4	Approved.
<u>T1-031193</u>	288	0	Rel-5	Test requirements for RRM Random Access Test	А	5.0.0	5.1.0	TEI5	Approved.
<u>T1-031229</u>	289	0	Rel-99	Completion of Annex F	F	3.13.0	5.1.0	TEI	Approved.
<u>T1-031230</u>	290	0	Rel-4	Completion of Annex F	A	4.0.0	5.1.0	TEI4	Approved.
<u>T1-031231</u>	291	0	Rel-5	Completion of Annex F	А	5.0.0	5.1.0	TEI5	Approved.

CRs specific to Rel99 :

Tdoc #	CR #	Rev	Phase	Title	cat	Versio n in	Versi on out	WI	Conclusion
<u>T1-030800</u>	252	0	Rel-99	CR to 34.121 R99; Corretion to Inter-system Handover from UTRAN FDD to GSM	F	3.13.0	5.1.0	TEI	Approved.
<u>T1-030870</u>	273	0	Rel-99	CR to 34.121 Rel-99; Correction to CRC bit for reference measurement channel using RLc-TM for DTCH, transport channel parameters	F	3.13.0	5.1.0	TEI	Approved.
<u>T1-030873</u>	274	0	Rel-99	Introduction of Test Tolerances to Cell Reselection in CELL_FACH tests 8.3.5.1 & 8.3.5.2	F	3.13.0	5.1.0	TEI	Approved.

CRs applicable to Rel4 and 5:

Tdoc #	CR #	Rev	Phase	Title	cat	Versio n in	Versi on out	WI	Conclusion
<u>T1-030832</u>	259	0	Rel-4	Introduction of Test Tolerances to Cell Reselection in CELL_FACH tests 8.3.5.1 & 8.3.5.2	А	4.0.0	5.1.0	TEI4	Approved.
<u>T1-030833</u>	260	0	Rel-5	Introduction of Test Tolerances to Cell Reselection in CELL_FACH tests 8.3.5.1 & 8.3.5.2	А	5.0.0	5.1.0	TEI5	Approved.
<u>T1-031103</u>	275	0	Rel-4	CR to 34.121 Rel-4; Corretion to Inter-system Handover from UTRAN FDD to GSM	А	4.0.0	5.1.0	TEI4	Approved.
<u>T1-031104</u>	276	0	Rel-5	CR to 34.121 Rel-5; Corretion to Inter-system Handover from UTRAN FDD to GSM	А	5.0.0	5.1.0	TEI5	Approved.
<u>T1-030871</u>	292	0	Rel-4	CR to 34.121 Rel-4; Correction to CRC bit for reference measurement channel using RLc-TM for DTCH, transport channel parameters	A	4.0.0	5.1.0	TEI4	Approved.
<u>T1-030872</u>	293	0	Rel-5	CR to 34.121 Rel-5; Correction to CRC bit for reference measurement channel using RLc-TM for DTCH, transport channel parameters	A	5.0.0	5.1.0	TEI5	Approved.

CRs specific to Rel-5 :

Tdoc #	CR #	Rev	Phase	Title	cat	Versio n in	Versi on out	WI	Conclusion
T1-031277	296	0	Rel-5	Introduction of the phase discontinuity test	F	5.0.0	5.1.0	TEI5	Approved.

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July – 01 August 2003

										CR-Form-v7	
ж		34.121	CR	251	жrev	-	Ħ	Current vers	sion:	5.0.0	ж
For <u>HELP</u> 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:	Ħ	Creation	of a m	erged release	for 34.121	1 whi	ch in	corporates R	99 anc	d Rel-4	
Source:	ж	T1									
Work item code	:Ж							<i>Date:</i> ೫	31/0	7/2003	
Category:	ж	F Use <u>one</u> of F (con A (cor B (add C (fun D (edi Detailed exp be found in	the follo rection) respon dition of ctional torial m olanatic 3GPP	owing categories) ds to a correctio f feature), modification of f podification) ons of the above <u>TR 21.900</u> .	s: n in an eai feature) categories	rlier re s can	elease	Release: % Use <u>one</u> of 2 (e) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	Rel- the foll (GSM (Relea (Relea (Relea (Relea (Relea (Relea	5 lowing rele Phase 2) ase 1996) ase 1997) ase 1998) ase 1999) ase 4) ase 5) ase 5) ase 6)	eases:

Reason for change: ೫	To create a merged document that covers all release up to Release 5.
Summary of change: ೫	The references subclause of the document is changed to allow non-specific references to refer to the correct release for the UE being tested.
	A correction has been made to reference [1], which should have been made non- specific (rather than being R99 only) when 34.121 Rel-5 was first created.
	Additions made in section 5.13 making the previously included Rel-5 text conditional.
Consequences if # not approved:	Test procedures intended for Rel-5 may be incorrectly applied to a R99 UE

Clauses affected:	<mark>光</mark> 2, 5.13
	YN
Other specs	# X Other core specifications #
affected:	X Test specifications
	X O&M Specifications
Other comments:	# This CR will modify the release 5 version of 34.121 so it can cover Release 99,
	Release 4 and Release 5. The existing R99 and Rel-4 versions of 34.121 will be
	modified to point to the latest Release 5 Version.

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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.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document.
 - For a Release 1999 UE, references to 3GPP documents are to version 3.x.y.
 - For a Release 4 UE, references to 3GPP documents are to version 4.x.y.

- For a Release 5 UE, references to 3GPP documents are to version 5.x.y.

- [1] 3GPP TS 25.101 "UE Radio transmission and reception (FDD), Release 99".
- [2] 3GPP TS 25.133 "Requirements for Support of Radio Resource Management (FDD)".
- [3] 3GPP TS 34.108 "Common Test Environments for User Equipment (UE) Conformance Testing".
- [4] 3GPP TS 34.109 "Terminal logical test interface; Special conformance testing functions".
- [5] 3GPP TS 25.214 "Physical layer procedures (FDD)".
- [6] 3GPP TR 21.905 "Vocabulary for 3GPP Specifications".
- [7] 3GPP TR 25.990 "Vocabulary".
- [8] 3GPP TS 25.331: "Radio Resource Control (RRC); Protocol Specification".
- [9] 3GPP TS 25.433 "UTRAN lub Interface NBAP Signalling".
- [10] ITU-R Recommendation SM.329: "Spurious emissions".
- [11] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".
- [12] 3GPP TS 25.303: "Interlayer Procedures in Connected Mode".
- [13] 3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".
- [14] 3GPP TS 25.213: "Spreading and modulation (FDD)".
- [15] 3GPP TS 25.223: "Spreading and modulation (TDD)".
- [16] ETSI ETR 273-1-2: "Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measuremement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".
- [17] 3GPP TR 25.926: "UE Radio Access Capabilities".
- [18] 3GPP TR 21.904: "UE capability requirements".
- [19] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

- [20] 3GPP TS 05.08: "Digital cellular telecommunications system (Phase 2+); Radio subsystem link control".
- [21] 3GPP TS 34.123-1: "User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification".
- [22] 3GPP TS 25.215: "Physical Layer Measurements (FDD)".
- [23] 3GPP TS 25.101 "UE Radio transmission and reception (FDD), Release 5".

5.13 Transmit Modulation

Transmit modulation defines the modulation quality for expected in-channel RF transmissions from the UE. The requirements apply to all transmissions including the PRACH/PCPCH pre-amble and message parts and all other expected transmissions. In cases where the mean power of the RF signal is allowed to change versus time e.g. PRACH, DPCH in compressed mode, change of TFC and inner loop power control, the EVM and Peak Code Domain Error requirements do not apply during the 25 us period before and after the nominal time when the power is expected to change.

5.13.1 Error Vector Magnitude (EVM)

5.13.1.1 Definition and applicability

The Error Vector Magnitude is a measure of the difference between the reference waveform and the measured waveform. This difference is called the error vector. Both waveforms pass through a matched Root Raised Cosine filter with bandwidth 3,84 MHz and roll-off α =0,22. Both waveforms are then further modified by selecting the frequency, absolute phase, absolute amplitude and chip clock timing so as to minimise the error vector. The EVM result is defined as the square root of the ratio of the mean error vector power to the mean reference power expressed as a %.

For Release 99 and Release 4 the measurement interval is one timeslot.

For Release 5 and later releases where tests may include power changes, **T**_{th} measurement interval is <u>further clarified</u> as being one timeslot except when the mean power between slots is expected to change whereupon the measurement interval is reduced by 25 µs at each end of the slot. For the PRACH and PCPCH preambles the measurement interval is 4096 chips less 25 µs at each end of the burst (3904 chips).

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

5.13.1.2 Minimum Requirements

The EVM shall not exceed 17,5 % for the parameters specified in table 5.13.1.

Table	5.13.1:	Parameters	for EVM
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Parameter	Level / Status	Unit
Output power	≥-20	dBm
Operating conditions	Normal conditions	
Power control step size	1	dB

The normative reference for this requirement is TS 25.101 [1] clause 6.8.2.1.

5.13.1.3 Test purpose

To verify that the EVM does not exceed 17,5 % for the specified parameters in table 5.13.1.

An excess EVM increases transmission errors in the up link own channel.

5.13.1.4 Method of test

5.13.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH, vibration; see clauses G.2.1, G.2.2 and G.2.3.

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.

5.13.1.4.2 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 EVM using Global In-Channel Tx-Test (annex B).
- 3) Set the power level of UE to -20dBm or send Down power control commands (1dB step size should be used.) to the UE until UE output power shall be -20dBm with ±1dB tolerance.
- 4) Repeat step 2).

5.13.1.5 Test requirements

The measured EVM, derived in step 2) and 4), shall not exceed 17,5 %. for parameters specified in table 5.13.1 Parameters for EVM.

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.

5.13.2 Peak code domain error

5.13.2.1 Definition and applicability

The Peak Code Domain Error is computed by projecting power of the error vector (as defined in clause 5.13.1.1) onto the code domain at a specific spreading factor. The Code Domain Error for every code in the domain is defined as the ratio of the mean power of the projection onto that code, to the mean power of the composite reference waveform expressed in dB. The Peak Code Domain Error is defined as the maximum value for the Code Domain Error for all codes.

For Release 99 and Release 4 the measurement interval is one timeslot.

For Release 5 and later releases where tests may include power changes, **T**the measurement interval is <u>further clarified</u> as being one timeslot except when the mean power between slots is expected to change whereupon the measurement interval is reduced by 25 µs at each end of the slot.

The requirements and this test apply only to the UE in which the multi-code DPDCH transmission is provided and therefore does not apply for the PRACH and PCPCH preamble and message parts.

3GPP TSG-T1 Meeting #20 Munich Germany July 28th – August 1st 2003

CHANGE REQUEST									
æ	34.121 CF	R <mark>252</mark> a	≋rev	- 9	Current vers	^{ion:} <mark>3.13.0</mark> ^ಱ			
For <u>HELP</u> or	using this form, s	ee bottom of this j	page or l	look at	the pop-up text	over the X symbols.			
Proposed change affects: UICC apps# ME X Radio Access Network Core Network									
Title:	CR to 34.121	R99; Corretion to	Inter-sys	stem H	landover from U	TRAN FDD to GSM			
Source:	€ <mark>T1</mark>								
Vork item code:	ŧ				<i>Date:</i> ೫	16/06/2003			
Category:	€ F Use <u>one</u> of the for F (correcting A (corresp release) B (addition C (function D (editorian Detailed explanan	ollowing categories: on) wonds to a correction of feature), nal modification of fe I modification) tions of the above c DTP 21 000	n in an ea eature) :ategories	<i>rlier</i>	Release: # Use <u>one</u> of 2 R96 R97 R98 R99 Rel-4 Rel-5 Pol 6	R99 the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5)			

Reason for change: ೫	Corrected errors in the Inter-system Handover from UTRAN FDD t GSM test case
Summary of change: ℜ	In section 8.3.4.4.2, procedure 7, the event was changed to refer to 3C instead of 2C. In the MEASUREMENT CONTROL message the Measurement Command was changed to setup. The Inter-RAT reporting quantity should be present.
Consequences if % not approved:	The test case would be incorrect.
Clauses affected: #	8.3.4

How to create CRs using this form:

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downloaded from the 3GPP server under http://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

8.3.4 Inter-system Handover from UTRAN FDD to GSM

8.3.4.1 Definition and applicability

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

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

8.3.4.2 Minimum requirement

The hard handover delay shall be less than 40 ms. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The hard handover delay as listed in table 8.3.4.1 equals the RRC procedure delay plus the interruption time listed in table 8.3.4.2. The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms.

Table 8.3.4.1: FDD/GSM handover - handover delay

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

Table 8.3.4.2: FDD/GSM handover - interruption time

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

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

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

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

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

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

The test parameters are given in table 8.3.4.3, 8.3.4.4 and 8.3.4.5 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a HANDOVER FROM UTRAN COMMAND in advance to T3 with activation time "now". In GSM Handover command contained in that message, IE starting time shall not be included. The RRC HANDOVER FROM UTRAN COMMAND 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].

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

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 34.121 clause C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns			Only applicable for UE requiring compressed mode patterns
- GSM carrier RSSI measurement		DL Compressed mode reference pattern 2 in Set 2	As specified in TS 34.121 [1] clause C.5, table C.5.2
- GSM Initial BSIC identification		Pattern 2	As specified in clause TS 25.133 [2] 8.1.2.5.2.1 table 8.7.
- GSM BSIC re- confirmation		Pattern 2	As specified in clause TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
Active cell		Cell 1	
Inter-RAT measurement		GSM Carrier RSSI	
quantity			
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the compressed mode patterns starts.
N Identify abort		66	Taken from TS 25.133 [2] 8.1.2.5.2.1 table 8.7.
T Reconfirm abort		5.5	Taken from TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
T1	S	20	
T2	S	5	
Т3	s	5	

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

Parameter	Unit	Cell 1 (UTRA)						
		T1, T2, T3						
CPICH_Ec/lor	dB	-10						
PCCPCH_Ec/lor	dB	-12						
SCH_Ec/lor	dB	-12						
PICH_Ec/lor	dB	-15						
DCH_Ec/lor	dB	Note 1						
OCNS_Ec/lor	dB	Note 2						
\hat{I}_{or}/I_{oc}	dB	0						
I _{oc}	dBm/3. 84 MHz	-70						
CPICH_Ec/lo	dB	-13						
Propagation								
Condition		AWGN						
Note 1: The DPCH level is controlled by the power control loop								
Note 2 : The power of the	Note 2 : The power of the OCNS channel that is added shall make							
the total power from the cell to be equal to I_{or}								

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

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

Doromotor	Unit	Cell 2 (GSM)				
Falailletei	Unit	T1	T2, T3			
Absolute RF Channel		AR	CN 1			
Number						
RXLEV	dBm	-85 -75				

8.3.4.4.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1.
- 2) The UE is switched on
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel
- 5) SS shall transmit a MEASUREMENT CONTROL message to cell 1
- 6) After 20 seconds, the SS shall switch the power settings from T1 to T2
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event $\frac{2C_{3C}}{2C_{3C}}$
- 8) SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time "now" and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell.
- 9) After 5 seconds, the SS shall switch the power settings from T2 to T3
- 10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3, then the number of successful tests is increased by one.
- [Editor's note: TS 34.108, 7.3.4 shall specify the messages HANDOVER ACCESS, PHYSICAL INFORMATION, SABM, UA and HANDOVER COMPLETE]
- 11) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 12)Repeat step 1-11 [TBD] times

I

Specific Message Contents

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

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	Value/Remark			
Message Type (10.2.17)				
UE information elements				
-RRC transaction identifier	0			
-Integrity check info	Not Present			
Measurement Information elements				
-Measurement Identity	4 <u>2</u>			
-Measurement Command (10.3.7.46)	ModifySetup			
-Measurement Reporting Mode (10.3.7.49)				
-Measurement Report Transfer Mode	AM RLC			
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger			
-Additional measurements list (10.3.7.1)	Not Present			
-CHOICE Measurement type	Inter-RAT measurement			
-Inter-RAT measurement (10.3.7.27)				
-Inter-RAT measurement objects list (10.3.7.23)	Not Present			
-Inter-RAT measurement quantity (10.3.7.29)				
 Measurement quantity for UTRAN quality estimate 				
(10.3.7.38)				
-Filter coefficient	0			
-CHOICE mode	FDD			
-Measurement quantity	CPICH Ec/N0			
-CHOICE system	GSM			
-Measurement quantity	GSM Carrier RSSI			
-Filter coefficient	0			
-BSIC verification required	Required			
-Inter-RAT reporting quantity (10.3.7.32)	Not Present			
-Reporting cell status (10.3.7.61)				
-CHOICE reported cell	Report cells within active set or within			
	virtual active set or of the other RAT			
-Maximum number of reported cells	2			
-CHOICE report criteria	Inter-RAT measurement reporting criteria			
-Inter-RAT measurement reporting criteria (10.3.7.30)				
-Parameters required for each event	1			
-Inter-RAT event identity (10.3.7.24)	Event 3C			
-Threshold own system	Not Present			
-W	Not Present			
- I hreshold other system	-80 dBm			
-Hysteresis	0 dB			
- I ime to trigger	0 ms			
-Reporting cell status (10.3.7.61)				
-CHOICE reported cell	Report cells within active set or within			
	virtual active set or of the other RAT			
-Maximum number of reported cells	2			
Physical channel information elements				
-DPCH compressed mode status info (10.3.6.34)	Not Present			

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Activation time	"now"
RB information elements	
-RAB information list	1
-RAB Info	Not present
Other information elements	
-CHOICE System type	GSM
-Frequency Band	GSM/DCS 1800 Band
-GSM message	
-Single GSM message	[TBD]
-GSM message List	GSM HANDOVER COMMAND formatted as BIT STRING(1512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

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

MEASUREMENT REPORT message for Inter-RAT test cases

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

8.3.4.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% 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.

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O&M Specifications

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.

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8.3.5.3 Cell Reselection to GSM

Void.

8.3.5.3.1 Definition and applicability

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

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

8.3.5.3.2 Minimum requirements

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

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

NOTE: The cell re-selection delay can be expressed

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

where:

Tidentify,GSM Specified in TS 25.133 [2] clause 8.4.2.5.2.1, here it is 2880 ms

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

 T_{BCCH}
 According to TS 05.08 [xx], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

T_{RA} The additional delay caused by the random access procedure in the GSM cell, is [TBD].

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

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

8.3.5.3.3 Test purpose

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

8.3.5.3.4 Method of test

8.3.5.3.4.1 Initial conditions

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

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

The test parameters are given in table 8.3.5.3.1 to 8.3.5.3.5. This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 6 GSM cells.

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

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
HCS				Not used
Neighbour cell lis	<u>t size</u>		24 FDD neighbours on Channel 1	
			6 GSM neighbours including ARFCN 1	
<u>T1</u>		<u>S</u>	<u>5</u>	
T2		<u>s</u>	<u>10</u>	

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

Table 8.3.5.3.2: Physical channel parameters for S-CCPCH.

Parameter	<u>Unit</u>	Level
Channel bit rate	kbps	<u>60</u>
Channel symbol rate	<u>ksps</u>	<u>30</u>
Slot Format #I	2	4
TFCI	2	<u>OFF</u>
Power offsets of TFCI and Pilot	<u>dB</u>	<u>0</u>
fields relative to data field		

Table 8.3.5.3.3: Transport channel parameters for S-CCPCH

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

Parameter	Unit	Cell 1 (UTRA)
		<u>T1</u>	<u>T2</u>
UTRA RF Channel		Chan	nol 1
Number			
CPICH_Ec/lor	<u>dB</u>	-1	0
PCCPCH_Ec/lor	<u>dB</u>	<u>-1</u>	2
SCH_Ec/lor	<u>dB</u>	<u>-1</u>	2
PICH_Ec/lor	<u>dB</u>	<u>-1</u>	<u>5</u>
S-CCPCH_Ec/lor	<u>dB</u>	-1	2
OCNS_Ec/lor	<u>dB</u>	<u>-1.2</u>	2 <u>95</u>
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>0</u>	<u>-5</u>
I	<u>dBm/3.84</u>	-7	7 0
- oc	MHz		<u> </u>
<u>CPICH_Ec/lo</u>	<u>dB</u>	<u>-13</u>	<u>-16.2</u>
CPICH_RSCP	<u>dBm</u>	<u>-80</u>	<u>-85</u>
Propagation Condition		<u>AWGN</u>	
Cell selection and			
reselection_quality_mea			<u>I Ec/lo</u>
sure			
Qqualmin	<u>dB</u>	-2	<u>20</u>
Qrxlevmin	<u>dBm</u>	<u>-1</u>	<u>15</u>
UE_TXPWR_MAX_	dBm	2	1
RACH			_
Qoffset1 _{s, n}	<u>dB</u>	<u>C1, C</u>	<u>52:0</u>
	<u> dB</u>	<u>(</u>	2
I reselection	<u><u>S</u></u>		<u>)</u>
Search _{RAT}	<u>dB</u>	NOT	sent
IE FACH Measurement		Se	ent
EACH Measurement			
			2
coefficient		<u> </u>	2
measurement indicator		FALSE	
Inter-frequency TDD		FALSE	
measurement indicator		<u>FALOE</u>	
Inter-RAT measurement		Included	
		00	
<u>>KAI TYPE</u>	1	<u>68</u>	

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

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

Parameter	<u>Unit</u>	Cell 2 (GSM)	
		<u>T1</u>	<u>T2</u>
Absolute RF Channel			14
Number		ARECI	
RXLEV	<u>dBm</u>	<u>-90</u>	<u>-75</u>
RXLEV_ACCESS_ MIN	<u>dBm</u>	<u>-104</u>	
<u>MS_TXPWR_MAX_</u> <u>CCH</u>	<u>dBm</u>	<u>33</u>	

8.3.5.3.4.2 Procedure

1) The SS activates cell 1-2 with RF parameters set up according to T1 in tables 8.3.5.1.4 and 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 and the SS waits for this process to complete.
- 4) After 5 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in tables 8.3.5.1.4 and 8.3.5.1.5.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within [TBD=5.5 s + T_{RA}]s from the beginning of time period T2 then a success is recorded and the SS completes the cell update procedure in GSM and the procedure continues with step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 10s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS completes the cell update procedure in GSM and the procedure continues with step 7.
- 7) After 10 s from the beginning of time period T2, the parameters are changed to those defined for T1 in tables 8.3.5.1.4 and 8.3.5.1.5.
- 8) The SS waits for random access requests from the UE on cell 1.
- 9) Repeat step 3) to 8) [TBD] times.

8.3.5.3.5 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.

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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		 Addition of tes The value for procedure in t 	<mark>st case details</mark> T _{RA} (additic he GSM cell)	s for nal delay is marke	caused by th d as TBD and	ne random acco d need further	ess study.

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not approved:		

Clauses affected:	₩ 8.3.5.3	
Other specs affected:	% X Other core specifications % X Test specifications % X O&M Specifications	
Other comments:	ж	

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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 <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.

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8.3.5.3 Cell Reselection to GSM

Void.

8.3.5.3.1 Definition and applicability

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

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

8.3.5.3.2 Minimum requirements

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

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

NOTE: The cell re-selection delay can be expressed

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

where:

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

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

 T_{BCCH}
 According to TS 05.08 [xx], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

T_{RA} The additional delay caused by the random access procedure in the GSM cell, is [TBD].

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

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

8.3.5.3.3 Test purpose

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

8.3.5.3.4 Method of test

8.3.5.3.4.1 Initial conditions

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

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

The test parameters are given in table 8.3.5.3.1 to 8.3.5.3.5. This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 6 GSM cells.

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

Parameter		<u>Unit</u>	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
HCS				Not used
Neighbour cell lis	<u>t size</u>		24 FDD neighbours on Channel 1	
			6 GSM neighbours including ARFCN 1	
<u>T1</u>		<u>S</u>	<u>5</u>	
T2		<u>s</u>	<u>10</u>	

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

Table 8.3.5.3.2: Physical channel parameters for S-CCPCH.

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

Table 8.3.5.3.3: Transport channel parameters for S-CCPCH

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

Parameter	Unit	Cell 1	(UTRA)
		<u>T1</u>	<u>T2</u>
UTRA RF Channel		Char	nol 1
Number			
CPICH_Ec/lor	<u>dB</u>	<u>-1</u>	0
PCCPCH_Ec/lor	<u>dB</u>	-1	2
SCH_Ec/lor	<u>dB</u>	<u>-1</u>	2
PICH_Ec/lor	<u>dB</u>	-1	5
S-CCPCH_Ec/lor	<u>dB</u>	-1	2
OCNS_Ec/lor	<u>dB</u>	<u>-1.2</u>	<u>295</u>
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>0</u>	<u>-5</u>
I _{oc}	<u>dBm/3.84</u> MHz	<u>-7</u>	<u>′0</u>
CPICH_Ec/lo	dB	-13	-16.2
CPICH_RSCP	dBm	-80	-85
Propagation Condition		AW	'GN
Cell selection and			
reselection_quality_mea		CPICH Ec/lo	
sure			
<u>Qqualmin</u>	<u>dB</u>	-2	<u>20</u>
<u>Qrxlevmin</u>	<u>dBm</u>	-1	<u>15</u>
UE_TXPWR_MAX_	dBm	2	1
RACH	<u>ubiii</u>	<u> </u>	<u></u>
<u>Qoffset1_{s.n}</u>	<u>dB</u>	<u>C1, (</u>	<u>C2: 0</u>
Qhyst1	<u>dB</u>	(<u>)</u>
Treselection	<u>S</u>	(<u>)</u>
<u>Ssearch_{RAT}</u>	<u>dB</u>	Not	sent
IE "FACH Measurement		Se	ent
occasion info"			
FACH Measurement			
occasion cycle length		3	3
coefficient			
Inter-frequency FDD		FAI	SE
measurement indicator			
Inter-frequency IDD		FAI	SE
			_
indicators		Included	
		6	SM
<u>>RAT type</u>		60	

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

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

Parameter	<u>Unit</u>	Cell 2	(GSM)
		T1	<u>T2</u>
Absolute RF Channel			1.4
<u>Number</u>		ARFOR	<u>N I</u>
RXLEV	<u>dBm</u>	<u>-90</u>	<u>-75</u>
RXLEV_ACCESS_ MIN	<u>dBm</u>	<u>-104</u>	
<u>MS_TXPWR_MAX_</u> <u>CCH</u>	<u>dBm</u>	<u>33</u>	

8.3.5.3.4.2 Procedure

1) The SS activates cell 1-2 with RF parameters set up according to T1 in tables 8.3.5.1.4 and 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 and the SS waits for this process to complete.
- 4) After 5 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in tables 8.3.5.1.4 and 8.3.5.1.5.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within [TBD=5.5 s + T_{RA}]s from the beginning of time period T2 then a success is recorded and the SS completes the cell update procedure in GSM and the procedure continues with step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 10s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS completes the cell update procedure in GSM and the procedure continues with step 7.
- 7) After 10 s from the beginning of time period T2, the parameters are changed to those defined for T1 in tables 8.3.5.1.4 and 8.3.5.1.5.
- 8) The SS waits for random access requests from the UE on cell 1.
- 9) Repeat step 3) to 8) [TBD] times.

8.3.5.3.5 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.

<u>Note:</u> 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	REQ	UE	ST				CR-Form-v7
ж	<mark>34.121</mark>	CR	255	жrev	-	ж	Current vers	sion:	5.0.0	ж
For <u>HELP</u> on us	sing this fo	rm, see	bottom of this	s page or	look a	at th	e pop-up text	over	the ೫ syr	nbols.
Proposed change a	ffects:	JICC a	pps#	ME	Rac	lio A	ccess Netwo	rk	Core Ne	twork
Title: ೫	CR to 34 Reselecti	121 RI on to C	EL-5; Addition SSM in Cell_F/	of test ca ACH)	se de	etails	for RRM tes	t case	e 8.3.5.3 ((Cell
Source: ೫	T1									
Work item code: ೫	TEI						Date: ೫	21/	07/2003	
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Summary of change	e: # Test	case 8 Ade The pro	3.3.5.3: dition of test ca e value for T _{RA} cedure in the	ase detail (additic GSM cell)	s for onal d) is m	lelay arke	caused by th d as TBD and	ne rar d nee	ndom acce	ess study.

not approved:	Consequences if not approved:	ж	There are no tests for cell reselection from WCDMA to GSM in Cell_FACH.	
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Clauses affected:	₩ 8.3.5.3 YN	
Other specs affected:	# X Other core specifications # X Test specifications # X O&M 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 <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.

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8.3.5.3 Cell Reselection to GSM

Void.

8.3.5.3.1 Definition and applicability

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

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

8.3.5.3.2 Minimum requirements

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

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

NOTE: The cell re-selection delay can be expressed

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

where:

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

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

 T_{BCCH}
 According to TS 05.08 [xx], the maximum time allowed to read the BCCH data, when being synchronized to a BCCH carrier, is 1.9 s.

T_{RA} The additional delay caused by the random access procedure in the GSM cell, is [TBD].

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

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

8.3.5.3.3 Test purpose

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

8.3.5.3.4 Method of test

8.3.5.3.4.1 Initial conditions

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

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

The test parameters are given in table 8.3.5.3.1 to 8.3.5.3.5. This scenario implies the presence of 1 UTRAN serving cell, and 1 GSM cell to be re-selected. The UE is requested to monitor neighbouring cells on 1 UMTS carrier and 6 GSM cells.

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

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

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

Table 8.3.5.3.2: Physical channel parameters for S-CCPCH.

Parameter	<u>Unit</u>	Level
Channel bit rate	kbps	<u>60</u>
Channel symbol rate	<u>ksps</u>	<u>30</u>
Slot Format #I	=	4
TFCI	2	<u>OFF</u>
Power offsets of TFCI and Pilot	<u>dB</u>	<u>0</u>
fields relative to data field		

Table 8.3.5.3.3: Transport channel parameters for S-CCPCH

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

Parameter	Unit	Cell 1 (UTRA)
		<u>T1</u>	<u>T2</u>
UTRA RF Channel		Chan	nol 1
Number			
CPICH_Ec/lor	dB	-1	0
PCCPCH_Ec/lor	<u>dB</u>	-1	2
SCH_Ec/lor	<u>dB</u>	<u>-1</u>	2
PICH_Ec/lor	<u>dB</u>	-1	<u>5</u>
S-CCPCH_Ec/lor	<u>dB</u>	-1	2
OCNS_Ec/lor	<u>dB</u>	-1.2	2 <u>95</u>
\hat{I}_{or}/I_{oc}	<u>dB</u>	<u>0</u>	<u>-5</u>
I	<u>dBm/3.84</u>	- 7	70
	<u>MHz</u>	-7	<u> </u>
CPICH_Ec/lo	<u>dB</u>	<u>-13</u>	<u>-16.2</u>
CPICH_RSCP	<u>dBm</u>	<u>-80</u>	<u>-85</u>
Propagation Condition		AW	GN
Cell_selection_and_			
reselection_quality_mea		CPICH	<u>I Ec/lo</u>
sure			
<u>Qqualmin</u>	<u>dB</u>	<u>-20</u>	
<u>Qrxlevmin</u>	<u>dBm</u>	<u>-115</u>	
<u>UE_TXPWR_MAX_</u>	dBm	21	
RACH		<u>21</u>	
<u>Qoffset1_{s, n}</u>	<u>dB</u>	<u>C1, C2: 0</u>	
Qhyst1	<u>dB</u>	<u>0</u>	
Treselection	<u>S</u>	<u>0</u>	
Ssearch _{RAT}	<u>dB</u>	Not	sent
IE "FACH Measurement		Se	ent
occasion info"			
FACH Measurement			
occasion cycle length		3	3
coefficient			
Inter-frequency FDD		FAL	SE
measurement indicator		FALSE	
Inter-RAT measurement		Included	
		G	M
		00	2171

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

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

Parameter Parameter	<u>Unit</u>	Cell 2	(GSM)
		T1	<u>T2</u>
Absolute RF Channel			1.4
<u>Number</u>		ARECI	
RXLEV	<u>dBm</u>	<u>-90</u>	<u>-75</u>
RXLEV_ACCESS_ MIN	<u>dBm</u>	<u>-104</u>	
<u>MS_TXPWR_MAX_</u> <u>CCH</u>	<u>dBm</u>	<u>33</u>	

8.3.5.3.4.2 Procedure

1) The SS activates cell 1-2 with RF parameters set up according to T1 in tables 8.3.5.1.4 and 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 and the SS waits for this process to complete.
- 4) After 5 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in tables 8.3.5.1.4 and 8.3.5.1.5.
- 5) The SS waits for random access requests from the UE. If the UE responds on cell 2 within [TBD=5.5 s + T_{RA}]s from the beginning of time period T2 then a success is recorded and the SS completes the cell update procedure in GSM and the procedure continues with step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 10s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS completes the cell update procedure in GSM and the procedure continues with step 7.
- 7) After 10 s from the beginning of time period T2, the parameters are changed to those defined for T1 in tables 8.3.5.1.4 and 8.3.5.1.5.
- 8) The SS waits for random access requests from the UE on cell 1.
- 9) Repeat step 3) to 8) [TBD] times.

8.3.5.3.5 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.

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

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July-1 August, 2003

		CHAN	GE REQ	UESI	Г	CR-Form-v
æ	34.12 1	CR 256	≭rev	- *	Current vers	sion: 3.13.0 [#]
For <u>HELP</u> on	using this fo	orm, see bottom c	f this page or	look at th	ne pop-up text	over the X symbols.
Proposed chang	e affects:	UICC apps೫ 🦲	ME	Radio A	Access Netwo	rk Core Network
Title:	ж Correctio	on of SSDT perfo	mance test ca	ase (R99)	
Source:	¥ T1					
Work item code:	ដ <mark>TEI</mark>				Date: ೫	17/07/2003
Category:	F Use <u>one</u> o F (cc A (cc B (ac C (fu D (ec Detailed e: be found in	f the following categorection) brresponds to a corridition of feature), nctional modification ditorial modification) xplanations of the a n 3GPP <u>TR 21.900</u> .	gories: rection in an ear n of feature) bove categories	rlier releas s can	Release: # Use <u>one</u> of 2 se) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	the following releases: (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)
Reason for chan	ge: % This	s CR is based on test requirement test case.	25.101 CR24 s table does n	Or1 (R4-0 ot introdu	030580, RP-03 uce whole ran	30207). Derivation of ge of DPCH_Ec/lor in

Summary of change:	 1) Minimum requirements (table 7.6.3.2) are modified according to the 25.101 CR. Test requirements (table 7.6.3.5) are modified accordingly including test tolerance. 2) Derivation of test requirements are modified so that minimum and maximum value of DPCH_Ec/lor in SSDT performance test case are introduced.
Consequences if	8 25.101 and 34.121 are inconsistent. Derivation of test test requirements table
not approved:	does not introduce whole range of DPCH Ec/lor in this test case.
• •	
Clauses affected:	発 7.6.3, F.4
	YN
Other specs	K X Other core specifications #
affected:	X Test specifications
	X O&M Specifications
1 Other comments 2	# Equivalent CRs in other Releases: T1-030818 (Rel-4) and T1-030819 (Rel-5)

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

7.6.3.1 Definition and applicability

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

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

7.6.3.2 Minimum requirements

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

For the parameters specified in table 7.6.3.1 the average downlink $\frac{DPCH _ E_c}{I_{or}}$ power ratio shall be below the specified

value for the BLER shown in table 7.6.3.2.

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

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

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

Test Number	$DPCH_E_c$	BLER
	I _{or}	
1	− 7,5<u>6,0</u> dB	10 ⁻²
2	– <mark>6,5</mark> 5,0 dB	10 ⁻²
3	–10,5 dB	10 ⁻²
4	–9,2 dB	10 ⁻²

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

7.6.3.3 Test purpose

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

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7.6.3.4 Method of test

7.6.3.4.1 Initial conditions

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

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

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

Table 7.6.3.3A: Specific Message Contents for SSDT mode

RRC CONNECTION SETUP for Test 1 and Test 2

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

RRC CONNECTION SETUP for Test 3 and Test 4

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

RADIO BEARER SETUP for Test 1 and Test 2

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

RADIO BEARER SETUP for Test 3 and Test 4

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

Table 7.6.3.3B: Message Contents of ACTIVESET UPDATE message

ACTIVESET UPDATE for Test 1 and Test 2

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
- RRC transaction identifier	0
- Integrity check info	Not Present
- Activation time	"now".
- New U-RNTI	Not Present
CN information elements	
- CN Information info	Not Present
Phy CH information elements	
Uplink radio resources	
- Maximum allowed UL TX power	33 dBm
Downlink radio resources	
- Radio link addition information	1
 Radio link addition information 	
- Primary CPICH info	Same as defined in Cell2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
 Primary CPICH usage for channel estimation 	Primary CPICH may be used
- DPCH frame offset	This should be refriected by the IE" Cell synchronisation
	information" in received MEASUREMENT REPORT
	message
- Secondary CPICH info	Not Present
- DL channelisation code	
 Secondary scrambling code 	Not Present
 Spreading factor 	128
- Code number	0
 Scrambling code change 	No code change
- TPC combination index	0
- SSDT Cell Identity	В
 Closed loop timing adjustment mode 	Not Present
 TFCI combining indicator 	FALSE
 SCCPCH Information for FACH 	Not Present
 Radio link removal information 	Not Present
- TX Diversity Mode	None
- SSDT information	
- S field	1
- Code Word Set	long

ACTIVESET UPDATE for Test 3 and Test 4

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
- RRC transaction identifier	0
- Integrity check info	Not Present
- Activation time	"now".
- New U-RNTI	Not Present
CN information elements	
- CN Information info	Not Present
Phy CH information elements	
Uplink radio resources	
- Maximum allowed UL TX power	33 dBm
Downlink radio resources	
- Radio link addition information	1
 Radio link addition information 	
- Primary CPICH info	Same as defined in Cell2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	This should be refriected by the IE" Cell synchronisation
	information" in received MEASUREMENT REPORT
	message
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	Not Present
- Spreading factor	128
- Code number	0
- Scrambling code change	No code change
- TPC combination index	0
- SSDT Cell Identity	B
- Closed loop timing adjustment mode	Not Present
- TFCI combining indicator	FALSE
- SCCPCH Information for FACH	Not Present
- Radio link removal information	Not Present
- TX Diversity Mode	None
- SSDT information	
- S field	2
- Code Word Set	short

7.6.3.4.2 Procedure

Measure BLER in points specified in table 7.6.3.4.

7.6.3.5 Test Requirements

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

value for the BLER shown in table 7.6.3.5.

| |

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Phase reference	P-CPICH				
\hat{I}_{or1}/I_{oc}	0,8	-2,2	0,8	0,8	dB
\hat{I}_{or2}/I_{oc}	0,8	0,8	0,8	-2,2	dB
I _{oc}	-60			dBm / 3,84 MHz	
Information Data Rate	12,2	12,2	12,2	12,2	kbps
Cell ID code word error ratio in uplink (note)	1	1	1	1	%
Number of FBI bits assigned to "S" Field	1	1	2	2	
Code word Set	Long	Long	Short	Short	
UL DPCCH slot Format	#	2	#	£5	
NOTE: The code word errors are introduced independently in both uplink channels.					

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

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

Test Number	$\frac{DPCH_E_c}{I_{or}}$	BLER
1	– <mark>7,4<u>5,9</u> dB</mark>	10 ⁻²
2	– <mark>6,4<u>4,9</u> dB</mark>	10 ⁻²
3	–10,4 dB	10 ⁻²
4	–9,1 dB	10 ⁻²

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

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	
		(TT)	
5.2 Maximum Output	Power class 1 (33 dBm)	0.7 dB	Formula: Upper Tolerance limit + TT
Power	Tolerance = $+1/-3$ dB		Lower Tolerance limit – TT
	Power class 2 (27 dBm)		For power classes 1-3:
	Tolerance = $+1/-3$ dB		Upper Tolerance limit = +1.7 dB
	Power class 3 (24 dBm)		Lower Tolerance limit = -3.7 dB
	Tolerance = $+1/-3$ dB		For power class 4:
	Power class 4 (21 dBm)		Upper Tolerance limit = +2.7 dB
	Tolerance = ±2 dB		Lower Tolerance limit = -2.7 dB
5.3 Frequency Error	The UE modulated carrier	10 Hz	Formula: modulated carrier frequency
	frequency shall be accurate to		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).
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	
		0.3 dB	
5.4.3 Minimum Output	UE minimum transmit power	1.0 dB	Formula:
Power	shall be less than –50 dBm		UE minimum transmit power + TT
			UE minimum transmit power = –49 dBm

Table F.4.1: Derivation of Test Red	quirements (Transmitter tests)

Test	Minimum Requirement in TS	Test	Test Requirement in TS 34.121
	25.101	(TT)	
5.4.4 Out-of- synchronisation handling of output power:	$\frac{DPCCH_E_c}{I_{or}} \text{ levels}$ AB: -22 dB BD: -28 dB DE: -24 dB EF: -18 dB transmit ON/OFF time 200ms $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $I_{oc} - 60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.4 dB for <u>DPCCH_E</u> I _{or} 0 ms for timing measurem ent	Formulas: Ratio between A and B + TT Ratio between B and D – TT Ratio between D and E – TT Ratio between E and F + TT transmit ON/OFF time + TT timing $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$ $\frac{DPCCH_E_c}{I_{or}} \text{ levels:}$ $\frac{AB: -21.6 \text{ dB}}{I_{or}}$ BD: -28.4 dB DE: -28.4 dB DE: -24.4 dB EF: -17.6 dB transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = -55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = []dBm
5.6 Change of TFC: power control step size	I ⊢C step size = +5 to +9 dB	0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT Upper limit = -4.7 dB
5.7 Power setting in	Various	TBD	Lower limit = -9.3 dB TBD
uplink compressed		(Subset of 5.4.2)	

Test	Minimum Require 25.101	ment in TS	Test Tolerance	Test Requirement in TS 34.121			
5.8 Occupied Bandwidth	The occupied chanr bandwidth shall be I MHz based on a chi 3 84 Mcps	nel ess than 5 p rate of	(TT) 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 required Lower limit + TT Add 1.5 to Minimum required in TS25.101 Table 6.10. Zero test tolerance is appli- Additional requirements for to FCC regulatory required The lower limit shall be -48 MHz or which ever is higher	ment + TT ement entries ed for Band II due ments. 3.5 dBm / 3.84 er.		
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 m then the er than the ow.	0.0 dB	Formula: Absolute power th	nreshold + TT		
	Power Classes 3 an UE channel +5 MHz ACLR limit: 33 dB UE channel +10 MH MHz, ACLR limit: 43	d 4: : or -5 MHz, lz or -10 3 dB	0.8 dB	Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 N limit: 32.2 dB UE channel +10 MHz or -1 limit: 42.2 dB	ИНZ, ACLR 0 MHz, ACLR		
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 -30dBm GHz /1MHz		0 dB	1 GHz ≤ f < 2.2 GHz	−30dBm /1MHz		
			0 dB	2.2 GHz ≤ f < 4 GHz	−30dBm /1MHz		
			0 dB	4 GHz ≤ f < 12.75 GHz	–30dBm /1MHz		
	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz	0 dB	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz		
	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz	0 dB	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%.	shall not	0%	Formula: EVM limit + TT EVM limit = 17.5 %			
5.13.2 Transmit modulation: peak code domain error	The measured Peak domain error shall n -15 dB.	c code ot exceed	1.0 dB	Formula: Peak code domain error + TT Peak code domain error = -14 dB			

3GPP

Test	Minimum Requi 25.10	rement in TS 01	Test Tolerance (TT)	Test Requirement in TS 34.121		
6.2 Reference sensitivity level	Îor = -106.7 dBm / DPCH_Ec = -117 MHz BER limit = 0.001	/ 3.84 MHz dBm / 3.84	0.7 dB	Formula: Îor+ TT DPCH_Ec + TT BER limit unchanged Îor = -106 dBm / 3.84 MHz DPCH_Ec = -116.3 dBm / 3.84 MHz		
6.3 Maximum input level	-25 dBm lor -19 dBc DPCH_E	c/lor	0.7 dB	Formula: lor-TT lor = -25.7 dBm		
6.4 Adjacent Channel Selectivity	Îor = -92.7 dBm / 3 DPCH_Ec = -103 MHz Ioac (modulated) : dBm/3.84 MHz BER limit = 0.001	3.84 MHz dBm / 3.84 = -52	0 dB	Formula: Îor unchanged DPCH_Ec unchanged loac – TT BER limit unchanged loac = -52 dBm/3.84 MHz		
6.5 Blocking Characteristics	See Table 6.5.3 and 6.5.4. in TS34.121 BER limit = 0.001		0 dB	Formula: I _{blocking} (modulated) - TT (dBm/3.84MHz) I _{blocking} (CW) - TT (dBm) BER limit unchanged		
6.6 Spurious Response	Iblocking(CW) –44 Fuw: Spurious response BER limit = 0.001	4 dBm e frequencies	0 dB	Formula: I _{blocking} (CW) - TT (dBm) Fuw unchanged BER limit unchanged I _{blocking} (CW) = -44 dBm		
6.7 Intermodulation Characteristics	Iouw1 (CW) Iouw2 (modulated 3.84 MHz Fuw1 (offset) 10 Fuw2 (offset) 20 Ior = -103.7 dBm/2 DPCH_Ec = -114 BER limit = 0.001	-46 dBm) –46 dBm / MHz MHz 3.84 MHz dBm/3.84	0 dB	Formula: lor + TT DPCH_Ec + TT louw1 level unchanged louw2 level unchanged BER limit unchanged. lor = -114 dBm BER limit. = 0.001		
6.8 Spurious Emissions				Formula: Maximum level + Add zero to all the values of Level in table 6.8.1.	TT of Maximum	
	Frequency Band	Maximum level		Frequency Band	Maximum level	
	9kHz ≤ f < 1GHz	-57dBm /100kHz	0 dB	9kHz ≤ f < 1GHz	-57dBm /100kHz	
	1GHz ≤ f ≤ 12.75GHz	-47dBm /1MHz	0 dB	1GHz ≤f ≤ 2.2GHz	-47dBm /1MHz	
			0 dB	$2.2GHz < f \le 4GHz$	-47dBm /1MHz	
	1000141		0 dB	4GHz < f ≤ 12.75GHz	-47dBm /1MHz	
	1920MHz ≤ f ≤ 1980MHz	-60dBm /3.84MHz	U dB	1920MHz ≤ f ≤ 1980MHz	-60dBm /3.84MHz	
	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz	0 dB	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz	

Table F.4.2: Derivation of Test Requirements (Receiver tests)

3GPP

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.2 Demodulation of DPCH in static conditions	$\frac{DPCH_E_c}{I_{or}} -5.5 \text{ to } -16.6 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH - E_c}{I_{or}}$ 0.3 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$
			$\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}}$ -5.4 to -16.5 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 1-4	$\frac{DPCH_E_c}{I_{or}} -2.2 \text{ to } -15.0$ $I_{oc} = -60 \text{ dBm}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} + \text{ratio} + \text{TT}$
	$\hat{I}_{or}/I_{oc} = 9 \text{ dB to } -3 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I_{oc} unchanged $\hat{I}_{or}/I_{oc} = 9.6$ to -2.4 dB $DPCH - E_c$ -2.1 to -14.9 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 5-8	$\frac{DPCH_E_c}{I_{or}} -3.2 \text{ to } -7.7 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH - E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH - E_c}{I_{oc}} -3.1 \text{ to } -7.6 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 9-12	$\frac{DPCH _ E_c}{I_{or}} -4.4 \text{ to } -11.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -4.3 \text{ to } -11.7 \text{ dB}:$

Table F.4.3: Derivation of Test Requirements (Performance tests)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 13-16	$\frac{DPCH_{-}E_{c}}{I_{or}} -2.2 \text{ to } -15.0 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH _ E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or} / I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{i}_{oc} / I_{oc} = 0.0$
			$\frac{DPCH_E_c}{I_{or}}$ -2.1 to -14.9 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 17-20	$\frac{DPCH _ E_c}{I_{or}} -1.4 \text{ to } -8.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or} / I_{oc} = 6 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\underline{DPCH_E_c} = -1.3 \text{ to } -8.7 \text{ dB}$
7.4 Demodulation of	DPCH E 10.0 to 14.5	0.1 dB	Formulas:
DPCH in moving propagation conditions	$\frac{D_{or} + 2c_{c}}{I_{or}} = 10.9 \text{ to - 14.5}$ $I_{oc} = -60 \text{ dBm}$	for $\frac{DPCH_E_c}{I_{or}}$	$\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	\hat{I}_{or}/I_{oc} = -1 dB	\hat{I}_{or}/I_{oc}	I_{oc} unchanged \hat{I}_{or}/I_{oc} = -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -10.8 to -14.4 dB:
7.5 Demodulation of DPCH birth-death propagation conditions	$\frac{DPCH _ E_c}{I_{or}} - 8.7 \text{ to } -12.6 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	$\begin{array}{c} \text{0.1 dB} \\ \text{for} \\ \underline{DPCH_E_c} \\ I_{or} \end{array}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	\hat{I}_{or}/I_{oc} = -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I_{oc} unchanged \hat{I}_{or}/I_{oc} = -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -18.6 to -12.5 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH_{-}E_{c}}{I_{or}} - 16.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 16.7 \text{ dB}:$
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH_E_c}{I_{or}} -18 \text{ to } -18.3 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 17.9 \text{ to } -18.2 \text{ dB}:$
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH_E_c}{I_{or}} = -7.55.0 \text{ to } -9.210.5$ dB $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 0 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 0.8 \text{ to } -2.2 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -7.4\underline{4.9} \text{ to } -9.1\underline{10.4} \text{ dB}$
7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH_{-}E_{c}}{I_{or}} -5.5 \text{ to } -15.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = \text{lor2/loc} = 6 \text{ to } 0 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.8 \text{ to } 0.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -5.4 \text{ to } -15.4 \text{ dB}$

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.7.2 Combining of TPC commands Test 1	$\frac{DPCH_E_c}{I_{or}} -12 \text{ dB}$ Ior1 and Ior2 -60dBm	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
		0dB for lor1 and lor2	$\frac{DPCH _ E_c}{I_{or}} = -11,9 \text{ dB}:$ lor1 = -60dBm lor2 = -60dBm The absolute levels of lor1 and lor2 are
			not important to this test.
7.7.2 Combining of TPC commands Test 2	$rac{DPCH_E_c}{I_{or}}$ -12 dB	0.1 dB for $\underline{DPCH _ E_c}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	I_{oc} = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	\hat{I}_{or}/I_{oc} = 0 dB	0.8 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = 0.8 \text{ dB}$
			$rac{DPCH_E_c}{I_{or}}$ -11,9 dB:
7.8.1 Power control in downlink constant BLER target	$\frac{DPCH_E_c}{I_{or}} \text{ -9 to -16 dB}$	0.1 dB for \underline{DPCH}_E_c	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	<i>I_{oc}</i> = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	\hat{I}_{or}/I_{oc} = 9 to -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.6 to -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -8.9 to -15.9 dB:
7.8.2, Power control in downlink initial convergence	$\frac{DPCH_E_c}{I_{or}}$ -8.1 to -18.9 dB	0.1 dB for \underline{DPCH}_E_c	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	I _{oc} = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	\hat{I}_{or}/I_{oc} = -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -8.0 to -18.8 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH_E_c}{I_{or}} -13.3 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 5 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 5.6 \text{ dB}$ $\frac{DPCH_E_c}{I} - 13.2 \text{ dB}:$
7.9 Downlink compressed mode	$\frac{DPCH_E_c}{I_{or}}$ Test 1 -14.6 dB Test 3 -15.2 dB $I_{oc} = -60$ dBm $\hat{I}_{or}/I_{oc} = 9$ dB	0.1 dB for $\frac{DPCH - E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	I_{or} Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.6 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}}$ Test 1 -14.5 dB Test 3 -15.1 dB:
7.10 Blind transport format detection Tests 1, 2, 3	$\frac{DPCH _ E_c}{I_{or}} - 17.7 \text{ to } -18.4 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.3 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 17.6 \text{ to } -18.3 \text{ dB}:$
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH_E_c}{I_{or}} -13.0 \text{ to } -13.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 12.9 \text{ to } -13.7 \text{ dB}:$

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Summary of change: ₩	 Minimum requirements (table 7.6.3.2) are modified according to the 25.101 CR. Test requirements (table 7.6.3.5) are modified accordingly including test tolerance. Derivation of test requirements are modified so that minimum and maximum value of DPCH_Ec/lor in SSDT performance test case are introduced. 					
Consequences if #	25.101 and 34.121 are inconsistent. Derivation of test test requirements table					
not approved:	does not introduce whole range of DPCH_Ec/lor in this test case.					
Clauses affected: #	7.6.3, F.4					
Other specs ж affected:	YNXOther core specifications#XTest specificationsXO&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.

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

7.6.3.1 Definition and applicability

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

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

7.6.3.2 Minimum requirements

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

For the parameters specified in table 7.6.3.1 the average downlink $\frac{DPCH _ E_c}{I_{or}}$ power ratio shall be below the specified

value for the BLER shown in table 7.6.3.2.

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

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

Test Number	$\frac{DPCH_E_c}{I_{or}}$	BLER
1	− 7,5<u>6,0</u> dB	10 ⁻²
2	– <mark>6,5</mark> 5,0 dB	10 ⁻²
3	–10,5 dB	10 ⁻²
4	–9,2 dB	10 ⁻²

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

7.6.3.3 Test purpose

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

7.6.3.4 Method of test

7.6.3.4.1 Initial conditions

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

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

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

Table 7.6.3.3A: Specific Message Contents for SSDT mode

RRC CONNECTION SETUP for Test 1 and Test 2

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

RRC CONNECTION SETUP for Test 3 and Test 4

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

RADIO BEARER SETUP for Test 1 and Test 2

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

RADIO BEARER SETUP for Test 3 and Test 4

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

Table 7.6.3.3B: Message Contents of ACTIVESET UPDATE message

ACTIVESET UPDATE for Test 1 and Test 2

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
- RRC transaction identifier	0
- Integrity check info	Not Present
- Activation time	"now".
- New U-RNTI	Not Present
CN information elements	
- CN Information info	Not Present
Phy CH information elements	
Uplink radio resources	
- Maximum allowed UL TX power	33 dBm
Downlink radio resources	
- Radio link addition information	1
 Radio link addition information 	
- Primary CPICH info	Same as defined in Cell2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
 Primary CPICH usage for channel estimation 	Primary CPICH may be used
- DPCH frame offset	This should be refriected by the IE" Cell synchronisation
	information" in received MEASUREMENT REPORT
	message
- Secondary CPICH info	Not Present
- DL channelisation code	
 Secondary scrambling code 	Not Present
- Spreading factor	128
- Code number	0
 Scrambling code change 	No code change
- TPC combination index	0
- SSDT Cell Identity	B
 Closed loop timing adjustment mode 	Not Present
 TFCI combining indicator 	FALSE
 SCCPCH Information for FACH 	Not Present
 Radio link removal information 	Not Present
- TX Diversity Mode	None
- SSDT information	
- S field	1
- Code Word Set	long

ACTIVESET UPDATE for Test 3 and Test 4

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
- RRC transaction identifier	0
- Integrity check info	Not Present
- Activation time	"now".
- New U-RNTI	Not Present
CN information elements	
- CN Information info	Not Present
Phy CH information elements	
Uplink radio resources	
- Maximum allowed UL TX power	33 dBm
Downlink radio resources	
- Radio link addition information	1
 Radio link addition information 	
- Primary CPICH info	Same as defined in Cell2
- Downlink DPCH info for each RL	
- CHOICE mode	FDD
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- DPCH frame offset	This should be refriected by the IE" Cell synchronisation
	information" in received MEASUREMENT REPORT
	message
- Secondary CPICH info	Not Present
- DL channelisation code	
- Secondary scrambling code	Not Present
- Spreading factor	128
- Code number	0
- Scrambling code change	No code change
- TPC combination index	0
- SSDT Cell Identity	B
 Closed loop timing adjustment mode 	Not Present
- TFCI combining indicator	FALSE
 SCCPCH Information for FACH 	Not Present
- Radio link removal information	Not Present
- TX Diversity Mode	None
- SSDT information	
- S field	2
- Code Word Set	short

7.6.3.4.2 Procedure

Measure BLER in points specified in table 7.6.3.4.

7.6.3.5 Test Requirements

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

value for the BLER shown in table 7.6.3.5.

| |

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Phase reference		P-C	PICH		
\hat{I}_{or1}/I_{oc}	0,8	-2,2	0,8	0,8	dB
\hat{I}_{or2}/I_{oc}	0,8	0,8	0,8	-2,2	dB
I _{oc}	-60				dBm / 3,84 MHz
Information Data Rate	12,2	12,2	12,2	12,2	kbps
Cell ID code word error ratio in uplink (note)	1	1	1	1	%
Number of FBI bits assigned to "S" Field	1	1	2	2	
Code word Set	Long	Long	Short	Short	
UL DPCCH slot Format	#	2	#	£5	
NOTE: The code word errors are introduced independently in both uplink channels.					

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

Table 7.6.3.5: DCH re-	quirements in multi-	path propa	gation conditions	during SSDT mode
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Test Number	$\frac{DPCH_E_c}{I_{or}}$	BLER
1	– <mark>7,4<u>5,9</u> dB</mark>	10 ⁻²
2	– <mark>6,4<u>4,9</u> dB</mark>	10 ⁻²
3	–10,4 dB	10 ⁻²
4	–9,1 dB	10 ⁻²

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

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		
		(TT)		
5.2 Maximum Output	Power class 1 (33 dBm)	0.7 dB	Formula: Upper Tolerance limit + TT	
Power	Tolerance = $+1/-3$ dB		Lower Tolerance limit – TT	
	Power class 2 (27 dBm)		For power classes 1-3:	
	Tolerance = $+1/-3$ dB		Upper Tolerance limit = +1.7 dB	
	Power class 3 (24 dBm)		Lower Tolerance limit = -3.7 dB	
	Tolerance = $+1/-3$ dB		For power class 4:	
	Power class 4 (21 dBm)		Upper Tolerance limit = +2.7 dB	
	Tolerance = ±2 dB		Lower Tolerance limit = -2.7 dB	
5.3 Frequency Error	The UE modulated carrier	10 Hz	Formula: modulated carrier frequency	
	frequency shall be accurate to		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).	
5440				
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 leep power control		For Normal conditional	
	toloranco +12 dB (Normal)		For Normal conditions:	
			Upper Tolerance limit = +10 dB	
			Lower rolerance infilt = -10 db	
			For Extreme conditions:	
			Lipper Tolerance limit = $\pm 13 \text{ dB}$	
			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		
		0.3 dB		
5.4.3 Minimum Output	UE minimum transmit power	1.0 dB	Formula:	
Power	shall be less than –50 dBm		UE minimum transmit power + TT	
			UE minimum transmit power = -49 dBm	

Table F.4.1: Derivation of Test Re	quirements (Transmitter tests)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.4.4 Out-of- synchronisation handling of output power:	$\frac{DPCCH_E_c}{I_{or}}$ levels $\frac{I_{or}}{I_{or}}$ AB: -22 dB BD: -28 dB DE: -24 dB EF: -18 dB transmit ON/OFF time 200ms $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.4 dB for $\underline{DPCCH_E}$ I_{or} 0 ms for timing measurem ent	Formulas: Ratio between A and B + TT Ratio between B and D – TT Ratio between D and E – TT Ratio between E and F + TT transmit ON/OFF time + TT timing $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$ $\frac{DPCCH_E_c}{I_{or}} \text{ levels:}$ AB: -21.6 dB BD: -28.4 dB DE: -24.4 dB EF: -17.6 dB transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = -55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = []dBm
5.6 Change of TFC: power control step size	TFC step size = +5 to +9 dB	0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT Upper limit = -4.7 dB
5.7 Power setting in uplink compressed mode	Various	TBD (Subset of 5.4.2)	TBD

Test	Minimum Requirement in TS 25.101		Test Tolerance	Test Requirement in TS 34.121	
			(TT)		
5.8 Occupied Bandwidth	The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of		0 kHz	Formula: occupied channel bandwidth: + TT	
500 /	3.84 Mcps.			occupied channel bandwidth = 5.0 MHz	
5.9 Spectrum emission mask	Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher.		1.5 0B	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 requirem The lower limit shall be –48 MHz or which ever is higher	nents. 3.5 dBm / 3.84 er.
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below. Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB		0.0 dB	Formula: Absolute power threshold + TT	
			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	For Add Red 5.1		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
	4000 5 Mile (11.15	0 dB	$4 \text{ GHz} \le f < 12.75 \text{ GHz}$	-30dBm /1MHz
	1893.5 MHz < 1 < 1919.6 MHz	-41dBm /300kHz		1893.5 MHZ < 1 < 1919.6 MHZ	-41dBm /300kHz
	923 WHZ STS 935 MHz	/100kHz	UUD	923 WI 12 ST S 933 WI 12	/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 Intermod Products limits re unchanged. CW interferer level = -40 dl	el – TT/2 main Bc
5.13.1 Transmit modulation: EVM	The measured EVM shall not exceed 17.5%.		0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13.2 Transmit modulation: peak code domain error	The measured Peak code domain error shall not exceed -15 dB.		1.0 dB	Formula: Peak code domain error + TT Peak code domain error = -14 dB	

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Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
6.2 Reference sensitivity level	for = -106.7 dBm / 3.84 MHz DPCH_Ec = -117 dBm / 3.84 MHz BER limit = 0.001		0.7 dB	Formula: Îor+ TT DPCH_Ec + TT BER limit unchanged Îor = -106 dBm / 3.84 MHz DPCH_Ec = -116.3 dBm / 3.84 MHz	
6.3 Maximum input level	-25 dBm lor -19 dBc DPCH_Ec/lor		0.7 dB	Formula: lor-TT lor = -25.7 dBm	
6.4 Adjacent Channel Selectivity	Îor = -92.7 dBm / 3.84 MHz DPCH_Ec = -103 dBm / 3.84 MHz loac (modulated) = -52 dBm/3.84 MHz BER limit = 0.001		0 dB	Formula: Îor unchanged DPCH_Ec unchanged Ioac – TT BER limit unchanged Ioac = -52 dBm/3.84 MHz	
6.5 Blocking Characteristics	See Table 6.5.3 and 6.5.4. in TS34.121 BER limit = 0.001		0 dB	Formula: I blocking (modulated) - TT (dBm/3.84MHz) I blocking (CW) - TT (dBm) BER limit unchanged	
6.6 Spurious Response	Iblocking(CW) –44 dBm Fuw: Spurious response frequencies BER limit = 0.001		0 dB	Formula: I _{blocking} (CW) - TT (dBm) Fuw unchanged BER limit unchanged I _{blocking} (CW) = -44 dBm	
6.7 Intermodulation Characteristics	louw1 (CW) -46 dBm louw2 (modulated) -46 dBm / 3.84 MHz Fuw1 (offset) 10 MHz Fuw2 (offset) 20 MHz lor = -103.7 dBm/3.84 MHz DPCH_Ec = -114 dBm/3.84 BER limit = 0.001		0 dB	Formula: lor + TT DPCH_Ec + TT louw1 level unchanged louw2 level unchanged BER limit unchanged. lor = -114 dBm BER limit. = 0.001	
6.8 Spurious Emissions				Formula: Maximum level + Add zero to all the values of Level in table 6.8.1.	TT of Maximum
	Frequency Band	Maximum level		Frequency Band	Maximum level
	9kHz ≤ f < 1GHz	-57dBm /100kHz	0 dB	9kHz ≤ f < 1GHz	-57dBm /100kHz
	1GHz ≤ f ≤ 12.75GHz	-47dBm /1MHz	0 dB	1GHz ≤ f ≤ 2.2GHz	-47dBm /1MHz
			0 dB	$2.2GHz < f \le 4GHz$	-47dBm /1MHz
			0 dB	4GHz < f ≤ 12.75GHz	-47dBm /1MHz
	1920MHz ≤ f ≤ 1980MHz	-60dBm /3.84MHz	0 dB	1920MHz ≤ f ≤ 1980MHz	-60dBm /3.84MHz
	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz	0 dB	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz

Table F.4.2: Derivation of Test Requirements (Receiver tests)

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Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.2 Demodulation of DPCH in static conditions	$\frac{DPCH_E_c}{I_{or}} -5.5 \text{ to } -16.6 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.3 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -5.4 \text{ to } -16.5 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 1-4	$\frac{DPCH_{E_c}}{I_{or}} -2.2 \text{ to } -15.0$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} + \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -2.1 \text{ to } -14.9 \text{ dB}$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 5-8	$\frac{DPCH _ E_c}{I_{or}} -3.2 \text{ to } -7.7 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or} / I_{oc} = 6 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -3.1 \text{ to } -7.6 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 9-12	$\frac{DPCH_E_c}{I_{or}} -4.4 \text{ to } -11.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -4.3 \text{ to } -11.7 \text{ dB}$

Table F.4.3: Derivation of Test Requirements (Performance tests)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 13-16	$\frac{DPCH_E_c}{I_{or}} -2.2 \text{ to } -15.0 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.6$ $\frac{DPCH_E_c}{I_{or}} -2.1 \text{ to } -14.9 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 17-20	$\frac{DPCH - E_c}{I_{or}} - 1.4 \text{ to } -8.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or} / I_{oc} = 6 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH _ E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH _ E_c}{I_{or}} -1.3 \text{ to } -8.7 \text{ dB}$
7.4 Demodulation of DPCH in moving propagation conditions	$\frac{DPCH _ E_c}{I_{or}} -10.9 \text{ to } -14.5$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 10.8 \text{ to} - 14.4 \text{ dB}$
7.5 Demodulation of DPCH birth-death propagation conditions	$\frac{DPCH_E_c}{I_{or}} -8.7 \text{ to } -12.6 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -18.6 \text{ to } -12.5 \text{ dB}:$

Test	Minimum Requirement in TS	Test	Test Requirement in TS 34.121
	25.101	Tolerance (TT)	
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH_{-}E_{c}}{I_{or}} - 16.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 16.7 \text{ dB}:$
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH _E_c}{I_{or}} -18 \text{ to } -18.3 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH _ E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH _ E_c}{I_{or}} - 17.9 \text{ to} - 18.2 \text{ dB}:$
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH_E_c}{I_{or}} = -7.55.0 \text{ to } -9.210.5$ dB $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 0 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 0.8 \text{ to } -2.2 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -7.4\underline{4.9} \text{ to } -9.4\underline{10.4} \text{ dB}:$
7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH_E_c}{I_{or}} -5.5 \text{ to } -15.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = \log 2/\log = 6 \text{ to } 0 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.8 \text{ to } 0.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -5.4 \text{ to } -15.4 \text{ dB}$
Test	Minimum Requirement in TS	Test	Test Requirement in TS 34 121
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1031	25.101	Tolerance (TT)	
7.7.2 Combining of	$\underline{DPCH}_{-}\underline{E_{c}}_{-}$ -12 dB	0.1 dB	Formulas:
TPC commands Test 1	I _{or}	tor DPCH E	$\frac{DPCH_{-}E_{c}}{r}$ = ratio + TT
	lor1 and lor2 -60dBm	$\frac{\underline{DTOT} \underline{D}_c}{I_{or}}$	I or
		07	
		0dB for	$\underline{DPCH}_{-}\underline{E_{c}}$ = -11,9 dB:
		lor2	
			lor2 = -60dBm
			The chackute levels of lor1 and lor2 are
			not important to this test.
7.7.2 Combining of	$\underline{DPCH}_{-}\underline{E_{c}}$ -12 dB	0.1 dB	Formulas:
TPC commands Test 2	I _{or}	$DPCH _E_{a}$	$\frac{DPCH_{-}E_{c}}{I}$ = ratio + TT
	I_{oc} = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	^ /	0.8 dB for	
	$I_{or}/I_{oc} = 0 \text{ dB}$	\hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = 0.8 \text{ dB}$
			$\frac{DPCH_{-}E_{c}}{I}$ -11,9 dB:
7.8.1 Power control in	$DPCH E_{1} = 9$ to $= 16$ dB	0.1 dB	Formulas:
downlink constant		for	$\underline{DPCH}_{\underline{E_c}} = ratio + TT$
BLER target		$\frac{DPCH_E_c}{I}$	I _{or}
	$I_{oc} = -60 \text{ dBm}$	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	\hat{I}_{or}/I_{oc} = 9 to -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I_{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.6 to -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -8.9 to -15.9 dB:
7.8.2, Power control in	$DPCH_{-}E_{c}$ -8.1 to -18.9 dB	0.1 dB	Formulas:
downlink initial convergence	I _{or}	tor DPCH E	$\frac{DPCH_{-}E_{c}}{r}$ = ratio + TT
	I – - 60 dBm	$\frac{I I I I I I - c}{I_{or}}$	\hat{I}_{or}
			$I_{or}/I_{oc} = 1000 \pm 11$
	\hat{I}_{or}/I_{oc} = -1 dB	\hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = -0.4 dB
			$\frac{DPCH_{-}E_{c}}{I}$ -8.0 to -18.8 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH_E_c}{I_{or}} -13.3 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	$\hat{I}_{or}/I_{oc} = 5 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = 5.6 \text{ dB}$ $\frac{DPCH_{-}E_{c}}{L}$ -13.2 dB:
7.9 Downlink compressed mode	$\frac{DPCH_E_c}{I_{or}}$ Test 1 -14.6 dB Test 3 -15.2 dB $I_{oc} = -60$ dBm $\hat{I}_{or}/I_{oc} = 9$ dB	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	I_{or} Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.6 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}}$ Test 1 -14.5 dB Test 3 -15.1 dB:
7.10 Blind transport format detection Tests 1, 2, 3	$\frac{DPCH_E_c}{I_{or}} - 17.7 \text{ to } -18.4 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.3 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 17.6 \text{ to } -18.3 \text{ dB}:$
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH_E_c}{I_{or}} -13.0 \text{ to } -13.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 12.9 \text{ to } -13.7 \text{ dB}:$

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ж	34	<mark>4.121</mark>	CR	258	ж rev	-	ж	Current vers	ion:	5.0.0	ж
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the <i>X</i> symbols.					nbols.						
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Summary of change: a	 Minimum requirements (table 7.6.3.2) are modified according to the 25.101 CR. Test requirements (table 7.6.3.5) are modified accordingly including test tolerance. Derivation of test requirements are modified so that minimum and maximum value of DPCH_Ec/lor in SSDT performance test case are introduced. 			
Consequences if	25.101 and 34.121 are inconsistent. Derivation of test test requirements table			
not approved:	does not introduce whole range of DPCH_Ec/lor in this test case.			
Clauses affected:	€ 7.6.3, F.4			
Other specs affected:	 Y N ★ Other core specifications % ★ Test specifications ★ O&M Specifications 			
Other comments:	f			

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.

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

7.6.3.1 Definition and applicability

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

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

7.6.3.2 Minimum requirements

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

For the parameters specified in table 7.6.3.1 the average downlink $\frac{DPCH _ E_c}{I_{or}}$ power ratio shall be below the specified

value for the BLER shown in table 7.6.3.2.

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

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

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

Test Number	$\frac{DPCH_E_c}{I_{or}}$	BLER
1	- 7,5<u>6,0</u> dB	10 ⁻²
2	– <mark>6,5</mark> 5,0 dB	10 ⁻²
3	–10,5 dB	10 ⁻²
4	–9,2 dB	10 ⁻²

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

7.6.3.3 Test purpose

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

7.6.3.4 Method of test

7.6.3.4.1 Initial conditions

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

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

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

Table 7.6.3.3A: Specific Message Contents for SSDT mode

RRC CONNECTION SETUP for Test 1 and Test 2

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

RRC CONNECTION SETUP for Test 3 and Test 4

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

RADIO BEARER SETUP for Test 1 and Test 2

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

RADIO BEARER SETUP for Test 3 and Test 4

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

Table 7.6.3.3B: Message Contents of ACTIVESET UPDATE message

ACTIVESET UPDATE for Test 1 and Test 2

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

ACTIVESET UPDATE for Test 3 and Test 4

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

7.6.3.4.2 Procedure

Measure BLER in points specified in table 7.6.3.4.

7.6.3.5 Test Requirements

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

value for the BLER shown in table 7.6.3.5.

| |

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

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

Table 7.6.3.5: DCH I	requirements in	multi-path	propagation	conditions	during SSDT	mode
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Test Number	$\frac{DPCH_E_c}{I_{or}}$	BLER
1	– <mark>7,4<u>5,9</u> dB</mark>	10 ⁻²
2	– 6,4<u>4,9</u> dB	10 ⁻²
3	–10,4 dB	10 ⁻²
4	–9,1 dB	10 ⁻²

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

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	Minimum Requirement in TS Test	
	25.101	Tolerance	
		(TT)	
5.2 Maximum Output	Power class 1 (33 dBm)	0.7 dB	Formula: Upper Tolerance limit + TT
Power	Tolerance = $+1/-3$ dB		Lower Tolerance limit – TT
	Power class 2 (27 dBm)		For power classes 1-3:
	Tolerance = $+1/-3$ dB		Upper Tolerance limit = +1.7 dB
	Power class 3 (24 dBm)		Lower Tolerance limit = -3.7 dB
	Tolerance = $+1/-3$ dB		For power class 4:
	Power class 4 (21 dBm)		Upper Tolerance limit = +2.7 dB
	Tolerance = $\pm 2 \text{ dB}$		Lower Tolerance limit = -2.7 dB
5.3 Frequency Error	The UE modulated carrier	10 Hz	Formula: modulated carrier frequency
	frequency shall be accurate to		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).
5.1.1.0		4.0.10	_
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)		Loper Tolerance limit $= \pm 10 \text{ dB}$
			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	
		0.3 dB	
5.4.3 Minimum Output	UE minimum transmit power	1.0 dB	Formula:
Power	shall be less than -50 dBm		UE minimum transmit power + TT
			UE minimum transmit power = -49 dBm

Test	Minimum Requirement in TS	Test	Test Requirement in TS 34.121	
	25.101	Tolerance (TT)		
5.4.4 Out-of- synchronisation handling of output power:	$\frac{DPCCH_E_c}{I_{or}} \text{ levels}$ AB: -22 dB BD: -28 dB DE: -24 dB EF: -18 dB transmit ON/OFF time 200ms $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.4 dB for <u>DPCCH_E</u> I _{or} 0 ms for timing measurem ent	Formulas: Ratio between A and B + TT Ratio between B and D – TT Ratio between D and E – TT Ratio between E and F + TT transmit ON/OFF time + TT timing $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$ $\frac{DPCCH_E_c}{I_{or}} \text{ levels:}$ $\frac{AB: -21.6 \text{ dB}}{I_{or}}$ AB: -21.6 dB BD: -28.4 dB DE: -24.4 dB EF: -17.6 dB transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.	
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = –55dBm.	
5.5.2 Transmit ON/OFF time mask (dynamic case) 5.6 Change of TFC: power control step size	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = []dBm Formula: Upper Tolerance limit + TT Lower Tolerance limit - TT	
power control step size			Lower Tolerance limit – TT Upper limit = -4.7 dB Lower limit = -9.3 dB	
5.7 Power setting in uplink compressed mode	Various	TBD (Subset of 5.4.2)	TBD	

Test	Minimum Requirement in TS 25,101		Test Tolerance	Test Requirement in TS 34.121	
			(TT)		
5.8 Occupied Bandwidth	The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of		0 kHz	Formula: occupied channel bandwidth: TT	
500 /	3.84 Mcps.			occupied channel bandwidth = 5.0 MHz	
5.9 Spectrum emission mask	Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher.		1.5 0B	Add 1.5 to Minimum requirement + 11 Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Zero test tolerance is applied for	
				to FCC regulatory requirem The lower limit shall be –48 MHz or which ever is higher	bana n dae nents. 3.5 dBm / 3.84 er.
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below.		0.0 dB	Formula: Absolute power th	nreshold + TT
	Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB		0.8 dB	Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 N limit: 32.2 dB UE channel +10 MHz or -1 limit: 42.2 dB	MHz, ACLR 0 MHz, ACLR
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
	(000 5 14)		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 ≤1 ≤ 935 MHz	–67 автт /100kHz	UUB	923 MIRZ ≤ I ≤ 933 MIRZ	–67 авті /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 Intermod Products limits re unchanged. CW interferer level = -40 dl	el – TT/2 main Bc
5.13.1 Transmit modulation: EVM	The measured EVM exceed 17.5%.	shall not	0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13.2 Transmit modulation: peak code domain error	The measured Peak domain error shall n -15 dB.	c code ot exceed	1.0 dB	Formula: Peak code domain error + TT Peak code domain error = -14 dB	

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
6.2 Reference sensitivity level	for = -106.7 dBm / 3.84 MHz DPCH_Ec = -117 dBm / 3.84 MHz BER limit = 0.001		0.7 dB	Formula: Îor+ TT DPCH_Ec + TT BER limit unchanged Îor = -106 dBm / 3 DPCH_Ec = -116.3 dBm	3.84 MHz / 3.84 MHz
6.3 Maximum input level	-25 dBm lor -19 dBc DPCH_Ec	c/lor	0.7 dB	Formula: lor-TT	
6.4 Adjacent Channel Selectivity	for = -92.7 dBm / 3.84 MHz DPCH_Ec = -103 dBm / 3.84 MHz loac (modulated) = -52 dBm/3.84 MHz BER limit = 0.001		0 dB	Formula: Tor unchanged DPCH_Ec unchanged Ioac – TT BER limit unchanged	
6.5 Blocking Characteristics	See Table 6.5.3 and 6.5.4. in TS34.121 BER limit = 0.001		0 dB	Formula: I blocking (modulated) - TT (dBm/3.84MHz I blocking (CW) - TT (dBm) BER limit unchanged	
6.6 Spurious Response	Iblocking(CW) –44 dBm Fuw: Spurious response frequencies BER limit = 0.001		0 dB	Formula: I _{blocking} (CW) - TT (dBm) Fuw unchanged BER limit unchanged I _{blocking} (CW) = -44 dBm	
6.7 Intermodulation Characteristics	louw1 (CW) -46 dBm louw2 (modulated) -46 dBm / 3.84 MHz Fuw1 (offset) 10 MHz Fuw2 (offset) 20 MHz lor = -103.7 dBm/3.84 MHz DPCH_Ec = -114 dBm/3.84 BER limit = 0.001		0 dB	Formula: lor + TT DPCH_Ec + TT louw1 level unchanged louw2 level unchanged BER limit unchanged. lor = -114 dBm BER limit. = 0.001	
6.8 Spurious Emissions		1		Formula: Maximum level + Add zero to all the values of Level in table 6.8.1.	TT of Maximum
	Frequency Band	Maximum level		Frequency Band	Maximum level
	9kHz ≤ f < 1GHz	-57dBm /100kHz	0 dB	9kHz ≤ f < 1GHz	-57dBm /100kHz
	1GHz ≤ f ≤ 12.75GHz	-47dBm /1MHz	0 dB	1GHz ≤ f ≤ 2.2GHz	-47dBm /1MHz
			0 dB	2.2GHz < f ≤ 4GHz	-47dBm /1MHz
	1920MHz < f <	-60dBm	0 dB	4GHz < f ≤ 12.75GHz 1920MHz < f < 1980MHz	-47dBm /1MHz -60dBm
	1980MHz 2110MHz < f <	/3.84MHz -60dBm	0 dB	2110MHz < f < 2170MHz	/3.84MHz -60dBm
	2170MHz	/3.84MHz			/3.84MHz

Table F.4.2: Derivation	of Test Requirements	s (Receiver tests)
	or rest negationicity	

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Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.2 Demodulation of DPCH in static conditions	$\frac{DPCH_E_c}{I_{or}} -5.5 \text{ to } -16.6 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.3 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -5.4 \text{ to } -16.5 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 1-4	$\frac{DPCH_E_c}{I_{or}} -2.2 \text{ to } -15.0$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} + \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -2.1 \text{ to } -14.9 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 5-8	$\frac{DPCH_E_c}{I_{or}} -3.2 \text{ to } -7.7 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -3.1 \text{ to } -7.6 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 9-12	$\frac{DPCH_{E_c}}{I_{or}} -4.4 \text{ to } -11.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -4.3 \text{ to } -11.7 \text{ dB}:$

Table F.4.3: Derivation of Test Requirements (Performance tests)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 13-16	$\frac{DPCH_E_c}{I_{or}} -2.2 \text{ to } -15.0 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.6$ $\frac{DPCH_E_c}{I_{or}} -2.1 \text{ to } -14.9 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 17-20	$\frac{DPCH - E_c}{I_{or}} -1.4 \text{ to } -8.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -1.3 \text{ to } -8.7 \text{ dB}:$
7.4 Demodulation of DPCH in moving propagation conditions	$\frac{DPCH _ E_c}{I_{or}} -10.9 \text{ to } -14.5$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 10.8 \text{ to} - 14.4 \text{ dB}$
7.5 Demodulation of DPCH birth-death propagation conditions	$\frac{DPCH _ E_c}{I_{or}} - 8.7 \text{ to } -12.6 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or} / I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH _ E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.4 \text{ dB}$ $\frac{DPCH _ E_c}{I_{or}} -18.6 \text{ to } -12.5 \text{ dB}:$

Test	Minimum Requirement in TS	Tost	Test Requirement in TS 34 121
Test	25.101	Tolerance (TT)	rest Requirement in 10 54.121
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH - E_c}{I_{or}} - 16.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or} / I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{i} / I	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$
			$\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH - E_c}{I_{or}} - 16.7 \text{ dB}:$
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH _ E_c}{I_{or}} -18 \text{ to } -18.3 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH _ E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 17.9 \text{ to } -18.2 \text{ dB}:$
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH _ E_c}{I_{or}} -7.55.0 \text{ to } -9.210.5$ dB $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 0 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH _ E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 0.8 \text{ to } -2.2 \text{ dB}$ $\frac{DPCH _ E_c}{I_{or}} = -7.44.9 \text{ to } -9.410.4 \text{ dB}:$
7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH _ E_c}{I_{or}} -5.5 \text{ to } -15.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or} / I_{oc} = \text{lor2/loc} = 6 \text{ to } 0 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH _ E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or} / I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or} / I_{oc} = 6.8 \text{ to } 0.8 \text{ dB}$ $\frac{DPCH _ E_c}{I_{or}} -5.4 \text{ to } -15.4 \text{ dB}$

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.7.2 Combining of TPC commands Test 1	$\frac{DPCH_E_c}{I_{or}} - 12 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{cr}}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
		OdB for lor1 and lor2	$\frac{DPCH_{-}E_{c}}{I_{or}} = -11,9 \text{ dB:}$ I_{or} $Ior1 = -60\text{dBm}$ $Ior2 = -60\text{dBm}$ The absolute levels of Ior1 and Ior2 are not important to this test.
7.7.2 Combining of TPC commands Test 2	$\frac{DPCH_E_c}{I_{or}} - 12 \text{ dB}$ $I_{or} = -60 \text{ dBm}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_/I_= \text{ratio} + \text{TT}$
	$\hat{I}_{or}/I_{oc} = 0 \text{ dB}$	0.8 dB for \hat{I}_{or}/I_{oc}	I_{oc} unchanged
			$\hat{I}_{or}/I_{oc} = 0.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} \text{ -11,9 dB}:$
7.8.1 Power control in downlink constant BLER target	$\frac{DPCH_E_c}{I_{or}} \text{ -9 to -16 dB}$ $I_{oc} = -60 \text{ dBm}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	\hat{I}_{or}/I_{oc} = 9 to -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = 9.6 \text{ to } -0.4 \text{ dB}$
			$\frac{DPCH_{-L_c}}{I_{or}}$ -8.9 to -15.9 dB:
7.8.2, Power control in downlink initial convergence	$\frac{DPCH_E_c}{I_{or}}$ -8.1 to -18.9 dB	0.1 dB for $\underline{DPCH _ E_c}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	I_{oc} = - 60 dBm	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	\hat{I}_{or}/I_{oc} = -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = -0.4 dB
			$\frac{DPCH_{-}E_{c}}{I_{cr}}$ -8.0 to -18.8 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH_E_c}{I_{or}} -13.3 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	$\begin{array}{c} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH_E_c} \\ I_{or} \end{array}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{or} = \text{ratio} + \text{TT}$
	$\hat{I}_{or}/I_{oc} = 5 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I_{oc} unchanged
			$\hat{I}_{or}/I_{oc} = 5.6 \text{ dB}$ $DPCH_{-E_{c}} = -13.2 \text{ dB};$
7.9 Downlink compressed mode	$\frac{DPCH_E_c}{I_{or}}$ Test 1 - 14.6 dB Tost 3 - 15.2 dB	0.1 dBfor $\frac{DPCH_E_c}{I}$	$\frac{I_{or}}{Formulas:}$ $\frac{DPCH_E_c}{I_{or}} = ratio + TT$
	$I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	$I_{or}/I_{oc} = \text{ratio} + 11$ I_{oc} unchanged
			$\frac{DPCH_E_c}{I_{or}}$ Test 1 -14.5 dB Tost 3 -15.1 dB
7.10 Blind transport format detection Tests 1, 2, 3	$\frac{DPCH_E_c}{I_{or}} -17.7 \text{ to } -18.4 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	\hat{I}_{or}/I_{oc} = -1 dB	0.3 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -17.6 \text{ to } -18.3 \text{ dB}:$
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH_E_c}{I_{or}}$ -13.0 to -13.8 dB	0.1 dB for $\frac{DPCH_E_c}{L}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	$I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -3 \text{ dB}$	I_{or} 0.6 dB for \hat{I} /I	\hat{I}_{or}/I_{oc} = ratio + TT I_{oc} unchanged
		for / foc	\hat{I}_{or}/I_{oc} = -2.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -12.9 to -13.7 dB:

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Reason for change:	The Test requirements do not allow for the effects of test system uncertainties
Summary of change:	 a) Introduction of table 8.3.5.1.5 giving correct RF conditions for test b) Revision of table 8.3.5.2.5 giving correct RF conditions for test c) Revision of Annex F.1.5 to define acceptable test system uncertainties d) Revision of Annex F.2.4 to define Test Tolerances e) Revision of Annex F.4 table 4.4 to refer to derivation of test requirements
Consequences if not approved:	A Test system may incorrectly fail a good UE.
Clauses affected:	8.3.5 and Annex F
Other specs	Y N ✔ Other core specifications ₩ ✔ Test specifications ₩ ✔ O&M Specifications ■
Other comments:	6
Other comments:	✓ Test specifications ✓ O&M Specifications

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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 <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.

8.3.5 Cell Re-selection in CELL_FACH

8.3.5.1 One frequency present in neighbour list

8.3.5.1.1 Definition and applicability

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

The requirements and this test apply to the FDD UE.

8.3.5.1.2 Minimum requirements

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

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

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

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

where

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

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

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

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

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

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

8.3.5.1.3 Test purpose

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

8.3.5.1.4 Method of test

8.3.5.1.4.1 Initial conditions

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

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

The test parameters are given in table 8.3.5.1.1 to 8.3.5.1.54. 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	frea, in neighbour list
	onumor paramotoro		noq. In norginoour not

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

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

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

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

Parameter	Unit	Ce	1	Ce	ll 2	Cell 3		Ce	Cell 4		Cell 4 Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T1 T2 T1 T2		T1	T2	T1	T2		
UTRA RF Channel		Char	nol 1	Char	nol 1	Char	nol 1	Channel 1		Cha	Channel 1		Channel 1	
Number		Chan		Char		Channel I		Channel I		Channel I				
CPICH_Ec/lor	dB	- ^	10	-*	10	-	10	-*	10	-	·10	-10		
PCCPCH_Ec/lor	dB	- ^	12	-'	12	-	12	-'	12	-	·12	-1	12	
SCH_Ec/lor	dB	- ^	12	-'	12	-	12	-'	12	-	·12	-1	2	
PICH_Ec/lor	dB	- '	15	-'	15	-	15	-'	15	-	·15	-1	15	
S-CCPCH_Ec/lor	dB	-1	2	-1	12	-'	12	-1	2	-	12	-1	2	
OCNS_Ec/lor	dB	-1.2	295	-1.2	295	-1.	295	-1.2	295	-1.	.295	-1.2	295	
\hat{I}_{or}/I_{oc}	dB	7.3	10.27	10.27	7.3	0.	27	0.	27	0	.27	0.2	27	
$\hat{I}_{or(Note 1)}$	<u>dBm</u>	<u>-62.73</u>	<u>-59.73</u>	<u>-59.73</u>	<u>-62.73</u>	<u>-69</u>).7 <u>3</u>	<u>-69</u>). <u>73</u>	<u>-6</u>	<u>9.73</u>	<u>-69</u>	.73	
I _{oc}	dBm/3.84 MHz						-70)						
CPICH_Ec/lo	dB	-16	-13	-13	-16	-	23	-23		-	·23	-2	23	
Propagation Condition							AWO	GN						
Cell_selection_and_ reselection_quality_ measure		CPICH	I E _c /N ₀	CPICH	HE _c /N ₀	CP Eo	CPICH CPICH E _c /N ₀		CPICH E _c /N ₀		CPI E _c /	CH ′N₀		
Qqualmin	dB	-2	20	-2	20	-:	.0 -20		-20		-2	20		
Qrxlevmin	dBm	-1	15	-1	15	-1	-115 -115		15	-1	115	-11	15	
UE_TXPWR_ MAX_RACH	dBm	2	1	2	21	2	21	21		:	21	2	1	
		C1, 0	C2: 0	C2, 0	C1: 0	C3,	C1: 0	C4, 0	C1: 0	C5,	C1: 0	C6, 0	21:0	
		C1, 0	C3: 0	C2, 0	C3: 0	C3,	C2: 0	C4, 0	C2: 0	C5,	C2: 0	C6, 0	C2: 0	
Qoffset 2 _{s, n}	dB	C1, 0	C4: 0	C2, (C4: 0	C3,	C4: 0	C4, 0	C3: 0	C5,	C3: 0	C6, 0	23: 0	
		C1, 0	C5: 0	C2, 0	C5: 0	C3,	C5: 0	C4, 0	C5: 0	C5,	C4: 0	C6, 0	24: 0	
		C1, (C6: 0	C2, C6: 0		C3,	C6: 0	C4, 0	C6: 0	C5,	C6: 0	C6, 0	25: 0	
Qhyst	dB	()	(0		0	()		0	0)	
Treselection	S	()	(0		0		0		0	()	
Sintrasearch	dB	not	sent	not	sent	not sent		not	not sent		sent	not s	sent	
IE "FACH Measurement occasion info"		not	sent	not	sent	not	not sent		not sent		not sent		sent	

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

8.3.5.1.4.2 Procedure

- 1) The SS activates cell 1-6 with RF parameters set up according to T1 in table 8.3.5.1.45.
- 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 the CELL_FACH state on Cell 2 and the SS waits for this process to complete.
- 4) After 15 seconds from completion of step_3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.1.4<u>5</u>.
- 5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

- 7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.1.4<u>5</u>.
- 8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until 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 the cell re-selection delay shall be less than 1.7 s.(Minimum requirement + 100ms).

8.3.5.1.5 Test requirements

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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 8.3.5.1.5: Cell specific test requirements for Cell Re-selection in CELL_FACH, one freq. in neighbour list															
Parameter	<u>Unit</u>	Cell 1		Cell 2		Cell 3		Cell 3		Ce	<u> 4</u>	Ce	<u>II 5</u>	Ce	<u>II 6</u>
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>		
<u>UTRA RF Channel</u> <u>Number</u>		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1			
CPICH_Ec/lor	<u>dB</u>	9	.4	-9	.4	-1	<u>0.5</u>	-1	0. <u>5</u>	-10	0. <u>5</u>	-10.5			
PCCPCH_Ec/lor	<u>dB</u>	-11	<u>1.4</u>	<u>-1</u>	<u>1.4</u>	<u>-1</u> :	<u>2.5</u>	<u>-1</u> ;	2. <u>5</u>	<u>-1</u> :	<u>2.5</u>	-12.5			
SCH_Ec/lor	<u>dB</u>	<u>-1</u>	1.4	<u>-1</u>	1.4	-1	<u>2.5</u>	5 -12.5		-12.5		<u>-12.5</u>			
PICH_Ec/lor	<u>dB</u>	<u>-14</u>	<u>4.4</u>	<u>-1</u> 4	<u>4.4</u>	-1	<u>-15.5</u>		<u>-15.5</u>		<u>-15.5</u>		<u>-15.5</u>		
S-CCPCH_Ec/lor	<u>dB</u>	<u>-1</u>	1.4	<u>-1</u>	<u>1.4</u>	-12.5		<u>-12.5</u>		<u>-12.5</u>		<u>-12.5</u>			
OCNS_Ec/lor	<u>dB</u>	-1.	. <u>52</u>	-1.	. <u>52</u>	<u>-1.13</u>		<u>-1.13</u>		-1.13		-1.13			
\hat{I}_{or}/I_{oc} Note 1	<u>dB</u>	<u>7.0</u>	<u>10.4</u>	<u>10.4</u>	<u>7.0</u>	<u>0</u>	.3	<u>0</u>	<u>.3</u>	<u>0</u>	<u>.3</u>	<u>0</u> .	<u>.3</u>		
\hat{I}_{or}	<u>dBm</u>	<u>-63.0</u>	<u>-59.6</u>	<u>-59.6</u>	<u>-59.6</u> <u>-63.0</u>		<u>-69.7</u>		<u>-69.7</u>		9. <u>7</u>	<u>-69.7</u>			
I _{oc}	<u>dBm/3.84</u> <u>MHz</u>		<u></u>												
CPICH_Ec/lo Note 1	<u>dB</u>	<u>-15.7</u>	<u>-12.3</u>	<u>-12.3</u>	<u>-15.7</u>	-2	<u>3.5</u>	-2	3. <u>5</u>	-23	<u>3.5</u>	-23	3. <u>5</u>		

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

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

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

8.3.5.2 Two frequencies present in the neighbour list

8.3.5.2.1 Definition and applicability

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

The requirements and this test apply to the FDD UE.

8.3.5.2.2 Minimum requirements

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

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

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

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

where

T_{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 8.3.5.2.54. 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. Phy	vsical channel	narameters for	S-CCPCH	two freas i	n neighbour list
Table 0.3.3.2.2. T II	ysical chamiler	parameters ior	5-001 011 ,	two neqs. i	i neiginbour nat

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	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		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2		
Number		Channel I		Channel 2		Chanr	Channel		Channel		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		
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	-1.8	2.2	2.2	-1.8	-6.8	-4.8	-6.8	-4.8	-4.8	-6.8	-4.8	-6.8	
Îor (Note 1)	<u>dBm</u>	<u>-</u> 71.85	<u>-</u> 67.75	<u>-</u> <u>67.75</u>	<u>-</u> <u>71.85</u>	<u>-</u> 76.85	<u>-</u> 74.75	<u>-</u> <u>76.85</u>	<u>-</u> 74.75	<u>-</u> 74.75	<u>-</u> <u>76.85</u>	<u>-</u> 74.75	<u>-</u> <u>76.85</u>	
I _{oc}	dBm/3.8 4 MHz						-7	70						
CPICH Ec/lo	dB	-15	-13	-13	-15	-:	20		20	-	20	-:	20	
Propagation		A14/ON						1	-	1	-	1		
Condition		AWGN	N											
Cell_selection_														
and_reselection_		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		CPICH E _c /N ₀		
quality_measure														
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	2: 0	C2, C1	1:0	C3, C ²	1:0	C4, C1	1:0	C5, C1: 0		C6, C1: 0		
		C1, C3: 0		C2, C3: 0		C3, C2: 0		C4, C2: 0		C5, C2: 0		C6, C2: 0		
Qoffset2 _{s, n}	dB	C1, C4	4: 0	C2, C4	4: 0	C3, C4: 0		C4, C3: 0		C5, C3: 0		C6, C3: 0		
		C1, C5	5:0	C2, C5	5:0	C3, C5: 0		C4, C5: 0		C5, C4: 0		C6, C4: 0		
		C1, C6	5:0	C2, C6	5:0	C3, C6	3:0	04, 06: 0		0, 06: 0				
Qhyst2	dB	0		0		0		0		0		0		
I reselection	S	0	- 1	0		0		0		0		U		
Sintrasearch	dB 0B	not se	nt	not sent		not sent		not sent		not sent		not sent		
	ав	not sent		not sent		not sent				not sent		not sent		
IE FACH Moosurement		sont		aant		0.0mt		aant		Oant		aant		
measurement		sent		sent		sent		sent		Sent		sent		
FACH														
Measurement														
occasion cycle		3		3		3		3		3		3		
length coefficient														
Inter-frequency														
FDD measurement		TRUE		TRUE		TRUE		TRUE		TRUE		TRUE		
indicator														
Inter-frequency														
TDD measurement		FALSE	Ξ	FALSE	Ξ	FALSE	Ξ	FALSE	Ξ	FALS	Ξ	FALSE	Ξ	
indicator								1						

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

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

8.3.5.2.4.2 Procedure

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

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

10) Steps 4 to 10 are repeated until 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 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.

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		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2		
CPICH_Ec/lor	<u>dB</u>	4).4	-9).4	<u>-10.7</u> <u>-10.7</u>		<u>-10.7</u>		<u>-10.7</u>				
PCCPCH_Ec/lor	<u>dB</u>	-1	<u>1.4</u>	<u>-1</u>	<u>1.4</u>	<u>-1</u> :	<u>2.7</u>	<u>-12.7</u>		<u>-12.7</u>		<u>-12.7</u>		
<u>SCH_Ec/lor</u>	CH_Ec/lor dB -11.4		<u>1.4</u>	<u>-1</u>	<u>1.4</u>	<u>-1</u> :	<u>2.7</u>	-12	<u>2.7</u>	<u>-12.7</u>		<u>-12.7</u>		
PICH_Ec/lor	<u>dB</u>	-1-	<u>4.4</u>	<u>-1</u> -	<u>-14.4</u>		<u>-15.7</u>		<u>-15.7</u>		<u>-15.7</u>		<u>-15.7</u>	
S-CCPCH_Ec/lor dB		-1	1. <u>4</u>	<u>-11.4</u>		<u>-12.7</u>		<u>-12.7</u>		-12.7		-12.7		
OCNS_Ec/lor	<u>dB</u>	-1.	. <u>52</u>	<u>-1</u>	. <u>52</u>	<u>-1.08</u>		<u>-1.08</u>		<u>-1.08</u>		<u>-1.08</u>		
\hat{I}_{or}/I_{oc} <u>Note 1</u>	<u>dB</u>	<u>-1.80</u>	<u>+4.64</u>	<u>+4.64</u>	<u>-1.80</u>	<u>-6.80</u>	<u>-3.16</u>	<u>-6.80</u>	<u>-3.16</u>	<u>-3.16</u>	<u>-6.80</u>	<u>-3.16</u>	<u>-6.80</u>	
<u>Î</u> or	<u>dBm</u>	<u>-71.8</u>	<u>-67.0</u>	<u>-67.0</u>	<u>-71.8</u>	<u>-76.8</u>	<u>-74.8</u>	<u>-76.8</u>	<u>-74.8</u>	<u>-74.8</u>	<u>-76.8</u>	<u>-74.8</u>	<u>-76.8</u>	
loc	<u>dBm/3.8</u> 4 MHz	<u>-70.0</u>	<u>-71.6</u>	<u>-71.6</u>	<u>-70.0</u>	<u>-70.0</u>	<u>-71.6</u>	<u>-70.0</u>	<u>-71.6</u>	<u>-71.6</u>	<u>-70.0</u>	<u>-71.6</u>	<u>-70.0</u>	
CPICH_Ec/lo Note	<u>dB</u>	<u>-14.4</u>	<u>-11.6</u>	<u>-11.6</u>	<u>-14.4</u>	<u>-20.7</u>	<u>-20.7</u>	<u>-20.7</u>	<u>-20.7</u>	<u>-20.7</u>	-20.7	<u>-20.7</u>	<u>-20.7</u>	

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

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

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

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

Annex F (normative): General test conditions and declarations

The requirements of this clause apply to all applicable tests in the present document.

Many of the tests in the present document measure a parameter relative to a value that is not fully specified in the UE specifications. For these tests, the Minimum Requirement is determined relative to a nominal value specified by the manufacturer.

When specified in a test, the manufacturer shall declare the nominal value of a parameter, or whether an option is supported.

In all the relevant clauses in this clause all Bit Error Ratio (BER), Block Error Ratio (BLER), False transmit format Detection Ratio (FDR) measurements shall be carried out according to the general rules for statistical testing in clause F.6.

F.1 Acceptable uncertainty of Test System

The maximum acceptable uncertainty of the Test System is specified below for each test, where appropriate. The Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, and the equipment under test to be measured with an uncertainty not exceeding the specified values. All ranges and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95 % is the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment.

For RF tests it should be noted that the uncertainties in clause F.1 apply to the Test System operating into a nominal 50 ohm load and do not include system effects due to mismatch between the DUT and the Test System.

F.1.5 Requirements for support of RRM

Clause Maximum Test System Uncertainty Derivation of Test System Uncertainty 8.3.5 Cell Re-selection in CELL_FACH Same as 8.2.2.1 During T1 and T2: 8.3.5.1 One frequency present in the Same as 8.2.2.1 neighbour list $\frac{CPICH_E_c}{\pm 0.1 \text{ dB}}$ I_{or} I_{oc} _____1.0 dB During T1: I_{or} (2) ±0.7 dB I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB During T2: I_{or} (1) ±0.7 dB I_{ar} (2, 3, 4, 5, 6) relative to I_{ar} (1) ±0.3 dB Assumptions: a) The contributing uncertainties for lor(n), channel power ratio, and loc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for lor(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for lor(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The uncertainty for loc and lor(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of lor(2) at T1 and the relative uncertainty of lor(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(1) at T2 and the relative uncertainty of lor(2, 3, 4, 5, 6), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is to be recorded in a TR [FFS].

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty			
8.3.5.2 Two frequencies present in the neighbour list	Same as 8.2.2.2Channel 1 during T1 and T2:	Same as 8.2.2.2			
	$\frac{CPICH _ E_c}{I_{or}} _ \pm 0.1 \text{ dB}$				
	I_{oc} (1) ±1.0 dB				
	$\frac{Channel 1 during T1:}{I_{or} (1) \pm 0.7 dB}$				
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB				
	$\frac{\text{Channel 1 during T2:}}{I_{or}} \frac{(1) \pm 0.7 \text{ dB}}{1}$				
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB				
	Channel 2 during T1 and T2:				
	$\frac{CPICH_E_c}{I_{or}} = \pm 0.1 \text{ dB}$				
	I_{oc} (2) ±1.0 dB				
	$\frac{\text{Channel 2 during T1:}}{I}$				
	$I_{or} (5, 6) \text{ relative to } I_{or} (2) \pm 0.3 \text{ dB}$				
	$\frac{\text{Channel 2 during T2:}}{I}$				
	I (5.6) relative to I (2) +0.3 dB				
	Assumptions:				
	a) to e): Same as for the one-frequency	test 8.3.5.1.			
	lor(3, 4), are uncorrelated to each other. uncertainty of lor(2) and the relative unc uncorrelated to each other.	Similarly, the absolute ertainty of lor(5, 6), are			
	g) The absolute uncertainties for lor(1) a amount of positive correlation from zero correlated).	ind lor(2) may have any (uncorrelated) to one (fully			
	h) The absolute uncertainties for loc(1) a amount of positive correlation from zero correlated).	and loc(2) may have any (uncorrelated) to one (fully			
	An explanation of correlation between us rationale behind the assumptions, is to b	ncertainties, and of the be recorded in a TR [FFS].			

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).
F.2.4 Requirements for support of RRM

Clause	Test Tolerance
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the neighbour list	$\frac{0.3 \text{ dB for}}{\hat{I}_{or}} / I_{oc}$ During T1 and T2:
	<u>+</u> 0. <u>160</u> dB for <u>all Cell 1 and 2</u>
	CPICH_Ec/lor_ratios
	<u>-0.50 dB for all Cell 3, 4, 5, 6 Ec/lor ratios</u> +0.03 dB for lor(3, 4, 5, 6)
	During T1:
	<u>-0.27 dB for lor(1)</u> +0.13 dB for lor(2)
	During T2:
	+0.13 dB for lor(1)
	- <u>0.27 dB for lor(2)</u>
8.3.5.2 Two frequencies present in the neighbour list	$\frac{0.3 \text{ dB for}}{\hat{H}_{or}} \hat{I}_{oc}$ Channel 1 during T1
5	and T2:
	+0.4 <u>60</u> dB for <u>all Cell 1 CPICH</u> Ec/lor
	-0.70 dB for all Cell 3 and 4 Ec/lor ratios
	Channel 1 during T1:
	$\frac{+0.05 \text{ dB for lor(1)}}{+0.05 \text{ dB for lor(3, 4)}}$
	No change for loc(1)
	Channel 1 during T2:
	+0.75 dB for lor(1)
	-1.60 dB for loc(1)
	Channel 2 during T1 and T2:
	+0.60 dB for all Cell 2 Ec/lor ratios
	-0.70 dB for all Cell 5 and 6 Ec/lor ratios
	Channel 2 during T1:
	-0.05 dB for lor(5, 6)
	-1.60 dB for loc(2)
	Channel 2 during T2:
	+0.05 dB for lor(2) +0.05 dB for lor(5, 6)
	No change for loc(2)

Table F.2.4: Test Tolerances for Radio Resource Management Tests

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	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121							
8.3.5 Cell Re-selection										
8.3.5.1 One frequency	Because the relationships be	tween the Test system	uncertainties and the Test Tolerances							
neighbour list	are complex, it is not possible to give a simple derivation of the Test Requirement in t document. The analysis was performed using a spreadsheet, to be recorded in a TR									
	During T1 and T2:	During T1 and T2:	During T1 and T2:							
	Cells 1 and 2:									
	$\frac{\text{CPICH}_\text{Ec/lor} = -10 \text{ dB}}{\text{PCCPCH}_\text{Ec/lor} = -12 \text{ dB}}$	<u>+0.60 dB</u>	$\frac{\text{Ec/lor ratio + TT}}{\text{Ec/lor ratio + TT}}$							
	$\frac{\text{SCH} \text{Ec/lor} = -12 \text{ dB}}{\text{SCH} \text{Ec/lor} = -12 \text{ dB}}$	+0.60 dB	Ec/lor ratio + TT							
	$\frac{PICH_EC/Ior = -15 \text{ dB}}{S-CCPCH_EC/Ior = -12 \text{ dB}}$	+0.60 dB +0.60 dB	$\frac{Ec/lor ratio + TT}{Ec/lor ratio + TT}$							
	<u>Cells 3, 4, 5, 6:</u>	0.50.4P								
	$\frac{\text{CPICH}_\text{EC/IOI} = -10 \text{ dB}}{\text{PCCPCH}_\text{EC/IOI} = -12 \text{ dB}}$	-0.50 dB	$\frac{Ec/lor ratio + TT}{Ec/lor ratio + TT}$							
	$\frac{SCH_EC/Ior = -12 \text{ dB}}{PICH_EC/Ior = -15 \text{ dB}}$	-0.50 dB -0.50 dB	Ec/lor ratio + TT							
	$\underline{\text{S-CCPCH}}_{\text{Ec/lor}} = -12 \text{ dB}$	<u>-0.50 dB</u>	Ec/lor ratio + TT							
	$\frac{\text{lor}(3, 4, 5, 6) = -69.73 \text{ dBm}}{\text{CPICH} _ E_c} = -10 \text{ dB}$	<u>+0.03 dB for lor(3,</u> <u>4, 5, 6)</u>	<u>lor(3, 4, 5, 6) + TT</u> Formulas:							
	I _{or}	$\frac{0.1 \text{ dB for}}{CPICH _E_c}$	<u>CPICH E_c</u> = ratio - TT							
	- I_{oc}-=-70 dBm	I _{or} 0.3 dB for lor/loc	I_{or} lor/loc = ratio - TT							
	lor/loc = 7.3 dB									
	Note: Parameters are valid		-I _{oc} -unchanged							
	2 at time T2		lor/loc = 7 dB							
			<u></u>							
			I _{or}							
	During T1:	During T1:	During T1:							
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	<u>-0.27 dB for lor(1)</u> +0.13 dB for lor(2)	$\frac{\text{lor}(1) + \text{TT}}{\text{lor}(2) + \text{TT}}$							
	$\underline{CPICH}_E_c = -10 \text{ dB}$	0.1 dB for	Formulas:							
	I _{or}	$\frac{CPICH_{E_c}}{I_{or}}$	<u>CPICH $_E_c$ = ratio + TT</u>							
	<u>−<i>I_{oc}</i> − − 70 dBm</u>	0.3 dB for lor/loc	I_{or} lor/loc = ratio + TT							
	lor/loc = 10.27 dB									
	Note: Parameters are valid for cell 1 at time T2 and cell		loc unchanged							
	2 at time T1		IOF/IOC = 10.57 dB							
			$\frac{CPICH_E_c\9.9 \text{ dB:}}{I_{or}}$							
	During T2:	During T2:	During T2:							
	$\frac{\text{lor}(1) = -59.73 \text{ dBm}}{\text{lor}(2) = -62.73 \text{ dBm}}$	+0.13 dB for lor(1) -0.27 dB for lor(2)	$\frac{\text{lor}(1) + TT}{\text{lor}(2) + TT}$							

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121				
8352Two	IS 25.133 Because the relationships he	(II)	upcortaintios and the Test Telerances				
frequencies present in	are complex it is not possible	to give a simple deriva	ation of the Test Requirement in this				
the neighbour list	document. The analysis was	performed using a spre	adsheet, to be recorded in a TR [FFS].				
	Channel 1 during T1 and	Channel 1 during	Channel 1 during T1 and T2:				
	<u>T2:</u>	T1 and T2:					
	Cell 1:						
	$\underline{CPICH}\underline{Ec/Ior} = -10 dB$	<u>+0.60 dB</u>	Ec/lor ratio + TT				
	$\frac{PCCPCH_Ec/lor = -12 \text{ dB}}{SCH_Ec/lor = -12 \text{ dB}}$	<u>+0.60 dB</u>	$\frac{\text{Ec/lor ratio} + \text{TT}}{\text{Ec/lor ratio} + \text{TT}}$				
	$\frac{\text{SCH}_2\text{C/IOI} = -12 \text{ dB}}{\text{PICH} \text{ Ec/IOI} = -15 \text{ dB}}$	+0.60 dB	Ec/lor ratio + TT				
	S-CCPCH_Ec/lor = -12 dB	<u>+0.60 dB</u>	Ec/lor ratio + TT				
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB	<u>-0.70 dB</u> -0.70 dB	$\frac{\text{Ec/lor ratio} + TT}{\text{Ec/lor ratio} + TT}$				
	$SCH_Ec/lor = -12 dB$	-0.70 dB	Ec/lor ratio + TT				
	<u>PICH_Ec/lor = -15 dB</u>	<u>-0.70 dB</u>	Ec/lor ratio + TT				
	$\frac{\text{S-CCPCH Ec/lor} = -12 \text{ dB}}{\text{CPICH E}}$	<u>-0.70 dB</u>	Ec/lor ratio + TT				
	$\frac{CPICH _ L_c}{I} = -10 \text{ dB}$	$CPICH _E_c$	- omulas.				
	or	I _{or}	$\underline{CPICH _E_c} = ratio - TT$				
	$I_{oc} = -70 \text{ dBm}$	0.3 dB for lor/loc	I_{or} lor/loc = ratio - TT				
	lor/loc = -3.4 dB		loc unchanged				
	Note: Parameters are valid for cell 1 at time T1 and cell		loc ratio unchanged				
			lor/loc = -3.7 dB				
			$\frac{CPICH_E_c}{I_{or}} - 10.1 \text{ dB};$				
	Chappel 1 during T1:	Channel 1 during	Channel 1 during T1:				
		<u>T1:</u>					
	lor(1) = -71.85 dBm lor(3, 4) = -76.85 dBm	<u>+0.05 dB for lor(1)</u> +0.05 dB for lor(3,4)	$\frac{10r(1) + TT}{10r(3, 4) + TT}$				
	$\frac{\text{loc}(1) = -70.00 \text{ dBm}}{\text{CPICH} - F}$	$\frac{0.00 \text{ dB for loc(1)}}{0.1 \text{ dP for}}$	loc(1) + TT				
	$\frac{CPICH _ L_c}{I} = -10 \text{ dB}$	$CPICH _E_c$	romulas.				
	Ur	I _{or}	$\underline{-\frac{CPICH _E_c}{-}} = ratio + TT$				
	$I_{oc} = -70 \text{ dBm}$	0.3 dB for lor/loc	I_{or} lor/loc = ratio + TT				
	lor/loc = 2.2 dB		loc unchanged				
	Note: Parameters are valid for cell 1 at time T2 and cell		loc ratio unchanged				
	2 at time T1		lor/loc = 2.5 dB				
			$\frac{CPICH _E_c}{I} _ 9.9 \text{ dB};$				
			▲ or				
	Channel 1 during T2:	Channel 1 during T2:	Channel 1 during T2:				
	lor(1) = -67.75 dBm lor(3, 4) = -74 75 dBm	+0.75 dB for lor(1) -0.05 dB for lor(3, 4)	$\frac{\text{lor}(1) + TT}{\text{lor}(3, 4) + TT}$				
	loc(1) = -70.00 dBm	-1.60 dB for loc(1)	loc(1) + TT				

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	<u>Cell 2:</u> <u>CPICH_Ec/lor = -10 dB</u> <u>PCCPCH_Ec/lor = -12 dB</u> <u>SCH_Ec/lor = -12 dB</u> <u>PICH_Ec/lor = -15 dB</u> <u>S-CCPCH_Ec/lor = -12 dB</u>	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	$\frac{\text{Ec/lor ratio} + TT}{\text{Ec/lor ratio} + TT}$ $\frac{\text{Ec/lor ratio} + TT}{\text{Ec/lor ratio} + TT}$ $\frac{\text{Ec/lor ratio} + TT}{\text{Ec/lor ratio} + TT}$
	Cells 5 and 6: CPICH Ec/lor = -10 dB PCCPCH Ec/lor = -12 dB SCH Ec/lor = -12 dB PICH Ec/lor = -15 dB S-CCPCH Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	$\frac{\text{Ec/lor ratio + TT}}{\text{Ec/lor ratio + TT}}$ $\frac{\text{Ec/lor ratio + TT}}{\text{Ec/lor ratio + TT}}$ $\frac{\text{Ec/lor ratio + TT}}{\text{Ec/lor ratio + TT}}$
	<u>Channel 2 during T1:</u> <u>lor(2) = -67.75 dBm</u> <u>lor(5, 6) = -74.75 dBm</u> <u>loc(2) = -70.00 dBm</u>	Channel 2 during <u>T1:</u> +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.60 dB for loc(2)	<u>Channel 2 during T1:</u> <u>lor(2) + TT</u> <u>lor(5, 6) + TT</u> <u>loc(2) + TT</u>
	<u>Channel 2 during T2:</u> <u>lor(2) = -71.85 dBm</u> <u>lor(5, 6) = -76.85 dBm</u> <u>loc(2) = -70.00 dBm</u>	Channel 2 during T2: +0.05 dB for lor(2) +0.05 dB for lor(5,6) 0.00 dB for loc(2)	$\frac{\text{Channel 2 during T2:}}{\text{lor}(2) + TT}$ $\frac{\text{lor}(5, 6) + TT}{\text{loc}(2) + TT}$

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For HELP on using this form, see bottom of this page or look at the pop-up text over the X symbols.										
Proposed change affects: UICC apps% ME ✓ Radio Access Network ✓ Core Network										
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Reason for change:	The Test requirements do not allow for the effects of test system uncertainties									
Summary of change:	 a) Introduction of table 8.3.5.1.5 giving correct RF conditions for test b) Revision of table 8.3.5.2.5 giving correct RF conditions for test c) Revision of Annex F.1.5 to define acceptable test system uncertainties d) Revision of Annex F.2.4 to define Test Tolerances e) Revision of Annex F.4 table 4.4 to refer to derivation of test requirements 									
Consequences if not approved:	A Test system may incorrectly fail a good UE.									
Clauses affected:	8.3.5 and Annex F									
Other specs	Y N ✔ Other core specifications ₩ ✔ Test specifications ₩ ✔ O&M Specifications ■									
Other comments:	6									
Other comments:	✓ Test specifications ✓ O&M Specifications									

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.

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

8.3.5 Cell Re-selection in CELL_FACH

8.3.5.1 One frequency present in neighbour list

8.3.5.1.1 Definition and applicability

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

The requirements and this test apply to the FDD UE.

8.3.5.1.2 Minimum requirements

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

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

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

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

where

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

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

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

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

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

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

8.3.5.1.3 Test purpose

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

8.3.5.1.4 Method of test

8.3.5.1.4.1 Initial conditions

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

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

The test parameters are given in table 8.3.5.1.1 to 8.3.5.1.54. 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 Active cell condition			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	frea, in neighbour list
	onannoi paramotoro		noq. In norginoour not

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

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

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

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

Parameter	Unit	Ce	1	Ce	ll 2	Ce	Cell 3		II 4	Cell 5		Cell 6			
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2		
UTRA RF Channel		Char	nol 1	Char	nol 1	Char	nol 1	Channel 1		Cha	Channel 1		nol 1		
Number		Chan		Char		Char	iner i	Char	iner i	Cha	Channel I		Channel I		
CPICH_Ec/lor	dB	- ^	10	-*	10	-	10	-*	10	-	·10	-1	10		
PCCPCH_Ec/lor	dB	- ^	12	-'	12	-	12	-'	12	-	·12	-1	12		
SCH_Ec/lor	dB	- ^	12	-'	12	-	12	-'	12	-	·12	-1	2		
PICH_Ec/lor	dB	- '	15	-'	15	-	15	-'	15	-	·15	-1	15		
S-CCPCH_Ec/lor	dB	-1	2	-1	12	-'	12	-1	2	-	12	-1	2		
OCNS_Ec/lor	dB	-1.2	295	-1.2	295	-1.	295	-1.2	295	-1.	.295	-1.2	295		
\hat{I}_{or}/I_{oc}	dB	7.3	10.27	10.27	7.3	0.	27	0.	27	0	.27	0.2	27		
$\hat{I}_{or(Note 1)}$	<u>dBm</u>	<u>-62.73</u>	<u>-59.73</u>	<u>-59.73</u>	<u>-62.73</u>	<u>-69</u>).7 <u>3</u>	<u>-69</u>). <u>73</u>	<u>-6</u>	<u>9.73</u>	<u>-69</u>	.73		
I _{oc}	dBm/3.84 MHz						-70)							
CPICH_Ec/lo	dB	-16	-13 -13 -16		-	23	-23		-	·23	-2	23			
Propagation Condition		AWGN													
Cell_selection_and_ reselection_quality_ measure		CPICH E ₀ /N ₀ CPICH E ₀ /N ₀		CP Eo	ICH /N₀	CPICH E _c /N ₀		CPIC	H E _c /N ₀	CPI E _c /	CH ′N₀				
Qqualmin	dB	-2	20	-2	20	-20		-2	20	-	20	-2	20		
Qrxlevmin	dBm	-1	15	-1	15	-115 -11		15	-1	115	-11	15			
UE_TXPWR_ MAX_RACH	dBm	2	1	2	21	2	21	21		:	21	2	1		
		C1, 0	C2: 0	C2, 0	C1: 0	C3,	C1: 0	C4, 0	C1: 0	C5,	C1: 0	C6, 0	21:0		
		C1, 0	C3: 0	C2, 0	C3: 0	C3, C2: 0		C4, C2: 0		C5,	C2: 0	C6, 0	C2: 0		
Qoffset 2 _{s, n}	dB	C1, 0	C4: 0	C2, (C4: 0	C3,	C3, C4: 0		C3: 0	C5,	C3: 0	C6, 0	23: 0		
		C1, 0	C5: 0	C2, 0	C2, C5: 0		C2, C5: 0 C3, C		C5: 0	C4, 0	C5: 0	C5,	C4: 0	C6, 0	24: 0
		C1, (C6: 0	C2, (C2, C6: 0		C6: 0	C4, 0	C6: 0	C5,	C6: 0	C6, 0	25: 0		
Qhyst	dB	()	(0		0	()		0	0)		
Treselection	S	()	(0		0	()		0	()		
Sintrasearch	dB	not	sent	not	sent	not	sent	not	sent	not	sent	not s	sent		
IE "FACH Measurement occasion info"		not	sent	not	sent	not	not sent		sent	not	sent	not	sent		

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

8.3.5.1.4.2 Procedure

- 1) The SS activates cell 1-6 with RF parameters set up according to T1 in table 8.3.5.1.45.
- 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 the CELL_FACH state on Cell 2 and the SS waits for this process to complete.
- 4) After 15 seconds from completion of step_3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.1.4<u>5</u>.
- 5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

- 7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.1.4<u>5</u>.
- 8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until 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 the cell re-selection delay shall be less than 1.7 s.(Minimum requirement + 100ms).

8.3.5.1.5 Test requirements

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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.

<u>Table 8.3.5.</u>	Table 8.3.5.1.5: Cell specific test requirements for Cell Re-selection in CELL_FACH, one freq. in neighbour list												
Parameter	<u>Unit</u>	Ce	<u>ll 1</u>	Ce	<u>ll 2</u>	Ce	II 3	Ce	<u> 4</u>	Ce	<u>II 5</u>	Ce	<u>II 6</u>
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel</u> <u>Number</u>		Channel 1 Channe		nel 1	Channel 1		Channel 1		<u>Char</u>	nnel 1	<u>Chan</u>	<u>nel 1</u>	
CPICH_Ec/lor	<u>dB</u>	9	-9.4 -9.4 -1			-1	<u>0.5</u>	-1	0. <u>5</u>	-10	0. <u>5</u>	<u>-10.5</u>	
PCCPCH_Ec/lor	<u>dB</u>	-11	-11.4 -11.4			<u>-1</u> :	<u>2.5</u>	<u>-12.5</u>		-12.5		<u>-12.5</u>	
SCH_Ec/lor	<u>dB</u>	<u>-1</u>	-11.4 -11.4			-1	<u>2.5</u>	<u>-12.5</u>		<u>-12.5</u>		<u>-12.5</u>	
PICH_Ec/lor	<u>dB</u>	<u>-14</u>	<u>4.4</u>	<u>-1</u> 4	<u>4.4</u>	-1	<u>5.5</u>	<u>-15.5</u>		<u>-15.5</u>		<u>-15.5</u>	
S-CCPCH_Ec/lor	<u>dB</u>	<u>-1</u>	1.4	<u>-1</u>	<u>1.4</u>	-1	<u>2.5</u>	<u>-12.5</u>		<u>-12.5</u>		<u>-12.5</u>	
OCNS_Ec/lor	<u>dB</u>	-1.	. <u>52</u>	-1.	. <u>52</u>	-1	.13	<u>-1.13</u>		<u>-1.13</u>		<u>-1.13</u>	
\hat{I}_{or}/I_{oc} Note 1	<u>dB</u>	<u>7.0</u>	<u>10.4</u>	<u>10.4</u>	<u>7.0</u>	<u>0</u>	.3	<u>0</u>	<u>.3</u>	<u>0</u>	<u>.3</u>	<u>0</u> .	<u>.3</u>
\hat{I}_{or}	<u>dBm</u>	<u>-63.0</u>	<u>-59.6</u>	<u>-59.6</u>	<u>-63.0</u>	<u>-6</u>	<u>9.7</u>	<u>-6</u>	9. <u>7</u>	<u>-6</u>	9. <u>7</u>	<u>-69</u>	<u>9.7</u>
I _{oc}	<u>dBm/3.84</u> <u>MHz</u>		<u>-70</u>										
CPICH_Ec/lo Note 1	<u>dB</u>	<u>-15.7</u>	<u>-12.3</u>	<u>-12.3</u>	<u>-15.7</u>	-2	<u>3.5</u>	-2	3. <u>5</u>	-23	<u>3.5</u>	-23	3. <u>5</u>

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

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

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

8.3.5.2 Two frequencies present in the neighbour list

8.3.5.2.1 Definition and applicability

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

The requirements and this test apply to the FDD UE.

8.3.5.2.2 Minimum requirements

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

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

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

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

where

T_{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 8.3.5.2.54. 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. Phy	vsical channel	narameters for	S-CCPCH	two freas i	n neighbour list
Table 0.3.3.2.2. T II	ysical chamiler	parameters ior	5-001 011 ,	two neqs. i	i neiginbour nat

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	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		Ohannal 4 Ohann				Chapr		Chann		Channel 2		Channel 2		
Number		Chann		Channel 2				Channel I		Channel 2		Channel 2		
CPICH_Ec/lor	dB	-10		-10		-10		-10		-10		-10		
PCCPCH_Ec/lor	dB	-12		-12		-12		-12		-12		-12	-12	
SCH_Ec/lor	dB	-12		-12		-12		-12		-12		-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	-1.8	2.2	2.2	-1.8	-6.8	-4.8	-6.8	-4.8	-4.8	-6.8	-4.8	-6.8	
Îor (Note 1)	<u>dBm</u>	<u>-</u> 71.85	<u>-</u> 67.75	<u>-</u> <u>67.75</u>	<u>-</u> <u>71.85</u>	<u>-</u> 76.85	<u>-</u> 74.75	<u>-</u> <u>76.85</u>	<u>-</u> 74.75	<u>-</u> 74.75	<u>-</u> <u>76.85</u>	<u>-</u> 74.75	<u>-</u> <u>76.85</u>	
I _{oc}	dBm/3.8 4 MHz						-7	70						
CPICH Ec/lo	dB	-15	-13	-13	-15	-:	20		20	-	20	-:	20	
Propagation		A14/ON							-	1	-	1		
Condition		AWGN	N											
Cell_selection_														
and_reselection_		CPICH	I E _c /N ₀	CPICH	I E _c /N ₀	CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH E _c /N ₀		CPICH	Η E _c /N ₀	
quality_measure														
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		21		
		C1, C2	2: 0	C2, C1: 0		C3, C ²	1:0	C4, C1	1:0	C5, C ²	1:0	C6, C ²	1:0	
		C1, C3	3: 0	C2, C3: 0		C3, C2: 0		C4, C2: 0		C5, C2	2:0	C6, C2	2: 0	
Qoffset2 _{s, n}	dB	C1, C4	4: 0	C2, C4	4: 0	C3, C4: 0		C4, C3: 0		C5, C3: 0		C6, C3: 0		
		C1, C5	5: 0	C2, C5	5: 0	C3, C	5:0	C4, C5: 0		C5, C4: 0		C6, C4: 0		
		C1, C6	5: 0	C2, C6	5: 0	C3, C6: 0 C4		C4, C6: 0		C5, C6: 0		C6, C5: 0		
Qhyst2	dB	0		0		0		0		0		0		
Ireselection	S	0		0		0		0		0		0		
Sintrasearch	dB	not se	nt	not ser	nt	not sent		not se	nt	not se	nt	not se	nt	
Sintersearch	aв	not se	nt	not sei	nt	not sent		not sent		not sent		not sent		
		aant		aant		0.0mt		t		Cont		aant		
Measurement		sent		sent		sent		sent		Sent		sent		
	-													
Measurement														
occasion cycle		3		3		3		3		3		3		
length coefficient														
Inter-frequency														
FDD measurement		TRUE		TRUE		TRUE		TRUE		TRUF		TRUE		
indicator														
Inter-frequency		İ		1				1		1				
TDD measurement		FALSE		FALSE		FALSE	Ξ	FALSE		FALS	Ξ	FALSE	Ξ	
indicator	1													

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

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

8.3.5.2.4.2 Procedure

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

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

10) Steps 4 to 10 are repeated until 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 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.

Parameter	Unit	Ce	ll 1	Ce	ll 2	Ce	II 3	Ce	II 4	Ce	II 5	Ce	ll 6
		T1	T2										
UTRA RF Channel Number		Chann	iel 1	Chann	nel 2	Chann	iel 1	Chann	el 1	Chann	el 2	Chann	el 2
CPICH_Ec/lor	<u>dB</u>	-9).4	-9).4	-1	0.7	-1(<u>).7</u>	-1(<u>).7</u>	-10).7
PCCPCH_Ec/lor	<u>dB</u>	<u>-1</u>	<u>1.4</u>	<u>-1</u>	<u>1.4</u>	<u>-1</u> :	<u>2.7</u>	<u>-12</u>	<u>2.7</u>	<u>-12</u>	<u>2.7</u>	-12	2.7
<u>SCH_Ec/lor</u>	<u>dB</u>	<u>-1</u>	<u>1.4</u>	<u>-1</u>	<u>1.4</u>	<u>-1</u> :	<u>2.7</u>	-12	<u>2.7</u>	<u>-1:</u>	<u>2.7</u>	-12	2.7
PICH_Ec/lor	<u>dB</u>	<u>-1</u> -	<u>4.4</u>	<u>-1</u> -	<u>4.4</u>	<u>-1</u>	<u>5.7</u>	<u>-1</u> :	<u>5.7</u>	<u>-1</u> :	<u>5.7</u>	<u>-15</u>	5.7
S-CCPCH_Ec/lor	<u>dB</u>	-1	1. <u>4</u>	-1	<u>1.4</u>	<u>-1</u> :	2.7	-12	2. <u>7</u>	-12	2. <u>7</u>	-12	2.7
OCNS_Ec/lor	<u>dB</u>	<u>-1</u> .	. <u>52</u>	<u>-1</u>	. <u>52</u>	<u>-1</u> .	.08	<u>-1</u> .	<u>.08</u>	<u>-1</u> .	<u>.08</u>	-1.	<u>08</u>
\hat{I}_{or}/I_{oc} <u>Note 1</u>	<u>dB</u>	<u>-1.80</u>	<u>+4.64</u>	<u>+4.64</u>	<u>-1.80</u>	<u>-6.80</u>	<u>-3.16</u>	<u>-6.80</u>	<u>-3.16</u>	<u>-3.16</u>	<u>-6.80</u>	<u>-3.16</u>	<u>-6.80</u>
<u>Î</u> or	<u>dBm</u>	<u>-71.8</u>	<u>-67.0</u>	<u>-67.0</u>	<u>-71.8</u>	<u>-76.8</u>	<u>-74.8</u>	<u>-76.8</u>	<u>-74.8</u>	<u>-74.8</u>	<u>-76.8</u>	<u>-74.8</u>	<u>-76.8</u>
loc	<u>dBm/3.8</u> 4 MHz	<u>-70.0</u>	<u>-71.6</u>	<u>-71.6</u>	<u>-70.0</u>	<u>-70.0</u>	<u>-71.6</u>	<u>-70.0</u>	<u>-71.6</u>	<u>-71.6</u>	<u>-70.0</u>	<u>-71.6</u>	<u>-70.0</u>
CPICH_Ec/lo Note	<u>dB</u>	<u>-14.4</u>	<u>-11.6</u>	<u>-11.6</u>	<u>-14.4</u>	<u>-20.7</u>							

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

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

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

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

Annex F (normative): General test conditions and declarations

The requirements of this clause apply to all applicable tests in the present document.

Many of the tests in the present document measure a parameter relative to a value that is not fully specified in the UE specifications. For these tests, the Minimum Requirement is determined relative to a nominal value specified by the manufacturer.

When specified in a test, the manufacturer shall declare the nominal value of a parameter, or whether an option is supported.

In all the relevant clauses in this clause all Bit Error Ratio (BER), Block Error Ratio (BLER), False transmit format Detection Ratio (FDR) measurements shall be carried out according to the general rules for statistical testing in clause F.6.

F.1 Acceptable uncertainty of Test System

The maximum acceptable uncertainty of the Test System is specified below for each test, where appropriate. The Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, and the equipment under test to be measured with an uncertainty not exceeding the specified values. All ranges and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95 % is the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment.

For RF tests it should be noted that the uncertainties in clause F.1 apply to the Test System operating into a nominal 50 ohm load and do not include system effects due to mismatch between the DUT and the Test System.

F.1.5 Requirements for support of RRM

Clause Maximum Test System Uncertainty Derivation of Test System Uncertainty 8.3.5 Cell Re-selection in CELL_FACH Same as 8.2.2.1 During T1 and T2: 8.3.5.1 One frequency present in the Same as 8.2.2.1 neighbour list $\frac{CPICH_E_c}{\pm 0.1 \text{ dB}}$ I_{or} I_{oc} _____1.0 dB During T1: I_{or} (2) ±0.7 dB I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB During T2: I_{or} (1) ±0.7 dB I_{ar} (2, 3, 4, 5, 6) relative to I_{ar} (1) ±0.3 dB Assumptions: a) The contributing uncertainties for lor(n), channel power ratio, and loc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for lor(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for lor(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The uncertainty for loc and lor(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of lor(2) at T1 and the relative uncertainty of lor(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(1) at T2 and the relative uncertainty of lor(2, 3, 4, 5, 6), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is to be recorded in a TR [FFS].

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test System Uncertainty	Derivation of Test System
8.3.5.2 Two frequencies present in the neighbour list	Same as 8.2.2.2Channel 1 during T1 and T2:	Same as 8.2.2.2
	$\frac{CPICH _ E_c}{I_{or}} _ \pm 0.1 \text{ dB}$	
	I_{oc} (1) ±1.0 dB	
	$\frac{Channel 1 during T1:}{I_{or} (1) \pm 0.7 dB}$	
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
	$\frac{\text{Channel 1 during T2:}}{I_{or}} \frac{(1) \pm 0.7 \text{ dB}}{1}$	
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
	Channel 2 during T1 and T2:	
	$\frac{CPICH_E_c}{I_{or}} = \pm 0.1 \text{ dB}$	
	I_{oc} (2) ±1.0 dB	
	$\frac{\text{Channel 2 during T1:}}{I}$	
	$\frac{I_{or}}{I_{or}} (5, 6) \text{ relative to } I_{or} (2) \pm 0.3 \text{ dB}$	
	$\frac{\text{Channel 2 during T2:}}{I (2) + 0.7 \text{ dB}}$	
	$\frac{I_{or} (5, 6) \text{ relative to } I_{or} (2) \pm 0.3 \text{ dB}}{$	
	Assumptions: <u>a) to e): Same as for the one-frequency</u>	test 8.3.5.1.
	f) The absolute uncertainty of lor(1) and lor(3, 4), are uncorrelated to each other. uncertainty of lor(2) and the relative unc uncorrelated to each other.	the relative uncertainty of Similarly, the absolute ertainty of lor(5, 6), are
	g) The absolute uncertainties for lor(1) a amount of positive correlation from zero correlated).	ind lor(2) may have any (uncorrelated) to one (fully
	h) The absolute uncertainties for loc(1) a amount of positive correlation from zero correlated).	and loc(2) may have any (uncorrelated) to one (fully
	An explanation of correlation between up rationale behind the assumptions, is to b	ncertainties, and of the be recorded in a TR [FFS].

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.4 Requirements for support of RRM

Clause	Test Tolerance
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the neighbour list	$\frac{0.3 \text{ dB for}}{\hat{I}_{or}} / I_{oc}$ During T1 and T2:
	<u>+</u> 0. <u>160</u> dB for <u>all Cell 1 and 2</u>
	CPICH_Ec/lor_ratios
	<u>-0.50 dB for all Cell 3, 4, 5, 6 Ec/lor ratios</u> +0.03 dB for lor(3, 4, 5, 6)
	During T1:
	<u>-0.27 dB for lor(1)</u> +0.13 dB for lor(2)
	During T2:
	+0.13 dB for lor(1)
	- <u>0.27 dB for lor(2)</u>
8.3.5.2 Two frequencies present in the neighbour list	$\frac{0.3 \text{ dB for}}{\hat{H}_{or}} \hat{I}_{oc}$ Channel 1 during T1
5	and T2:
	+0.4 <u>60</u> dB for <u>all Cell 1 CPICH</u> Ec/lor
	-0.70 dB for all Cell 3 and 4 Ec/lor ratios
	Channel 1 during T1:
	$\frac{+0.05 \text{ dB for lor(1)}}{+0.05 \text{ dB for lor(3, 4)}}$
	No change for loc(1)
	Channel 1 during T2:
	+0.75 dB for lor(1)
	-1.60 dB for loc(1)
	Channel 2 during T1 and T2:
	+0.60 dB for all Cell 2 Ec/lor ratios
	-0.70 dB for all Cell 5 and 6 Ec/lor ratios
	Channel 2 during T1:
	-0.05 dB for lor(5, 6)
	-1.60 dB for loc(2)
	Channel 2 during T2:
	+0.05 dB for lor(2) +0.05 dB for lor(5, 6)
	No change for loc(2)

Table F.2.4: Test Tolerances for Radio Resource Management Tests

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	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.5 Cell Re-selection			
8.3.5.1 One frequency	Because the relationships be	tween the Test system	uncertainties and the Test Tolerances
neighbour list	document. The analysis was	performed using a spre	eadsheet, to be recorded in a TR [FFS].
	During T1 and T2:	During T1 and T2:	During T1 and T2:
	Cells 1 and 2:		
	$\frac{\text{CPICH}_\text{Ec/lor} = -10 \text{ dB}}{\text{PCCPCH}_\text{Ec/lor} = -12 \text{ dB}}$	<u>+0.60 dB</u>	$\frac{\text{Ec/lor ratio + TT}}{\text{Ec/lor ratio + TT}}$
	$\frac{\text{SCH} \text{Ec/lor} = -12 \text{ dB}}{\text{SCH} \text{Ec/lor} = -12 \text{ dB}}$	+0.60 dB	Ec/lor ratio + TT
	$\frac{PICH_EC/Ior = -15 \text{ dB}}{S-CCPCH_EC/Ior = -12 \text{ dB}}$	+0.60 dB +0.60 dB	$\frac{Ec/lor ratio + TT}{Ec/lor ratio + TT}$
	<u>Cells 3, 4, 5, 6:</u>	0.50.4P	
	$\frac{\text{CPICH}_\text{EC/IOI} = -10 \text{ dB}}{\text{PCCPCH}_\text{EC/IOI} = -12 \text{ dB}}$	-0.50 dB	$\frac{Ec/lor ratio + TT}{Ec/lor ratio + TT}$
	$\frac{SCH_EC/Ior = -12 \text{ dB}}{PICH_EC/Ior = -15 \text{ dB}}$	-0.50 dB -0.50 dB	Ec/lor ratio + TT
	$\underline{\text{S-CCPCH}}_{\text{Ec/lor}} = -12 \text{ dB}$	<u>-0.50 dB</u>	Ec/lor ratio + TT
	$\frac{\text{lor}(3, 4, 5, 6) = -69.73 \text{ dBm}}{\text{CPICH} _ E_c} = -10 \text{ dB}$	<u>+0.03 dB for lor(3,</u> <u>4, 5, 6)</u>	<u>lor(3, 4, 5, 6) + TT</u> Formulas:
	I _{or}	$\frac{0.1 \text{ dB for}}{CPICH _E_c}$	<u>CPICH E_c</u> = ratio - TT
	- I_{oc}-=-70 dBm	I _{or} 0.3 dB for lor/loc	I_{or} lor/loc = ratio - TT
	lor/loc = 7.3 dB		
	Note: Parameters are valid		-I _{oc} -unchanged
	2 at time T2		lor/loc = 7 dB
			<u></u>
			I _{or}
	During T1:	During T1:	During T1:
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	<u>-0.27 dB for lor(1)</u> +0.13 dB for lor(2)	$\frac{\text{lor}(1) + \text{TT}}{\text{lor}(2) + \text{TT}}$
	$\underline{CPICH}_E_c = -10 \text{ dB}$	0.1 dB for	Formulas:
	I _{or}	$\frac{CPICH_{E_c}}{I_{or}}$	<u>CPICH $_E_c$ = ratio + TT</u>
	- <u>I_{oc}-=-70 dBm</u>	0.3 dB for lor/loc	I_{or} lor/loc = ratio + TT
	lor/loc = 10.27 dB		
	Note: Parameters are valid for cell 1 at time T2 and cell		loc unchanged
	2 at time T1		IOF/IOC = 10.57 dB
			$\frac{CPICH_E_c\9.9 \text{ dB:}}{I_{or}}$
	During T2:	During T2:	During T2:
	$\frac{\text{lor}(1) = -59.73 \text{ dBm}}{\text{lor}(2) = -62.73 \text{ dBm}}$	+0.13 dB for lor(1) -0.27 dB for lor(2)	$\frac{\text{lor}(1) + TT}{\text{lor}(2) + TT}$

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121
8352Two	IS 25.133 Because the relationships he	(II)	upcortaintios and the Test Telerances
frequencies present in	are complex it is not possible	to give a simple deriva	ation of the Test Requirement in this
the neighbour list	document. The analysis was	performed using a spre	adsheet, to be recorded in a TR [FFS].
	Channel 1 during T1 and	Channel 1 during	Chappel 1 during T1 and T2:
	<u>T2:</u>	T1 and T2:	
	Cell 1:		
	$\underline{CPICH}\underline{Ec/Ior} = -10 dB$	<u>+0.60 dB</u>	Ec/lor ratio + TT
	$\frac{PCCPCH_Ec/lor = -12 \text{ dB}}{SCH_Ec/lor = -12 \text{ dB}}$	<u>+0.60 dB</u>	$\frac{\text{Ec/lor ratio} + \text{TT}}{\text{Ec/lor ratio} + \text{TT}}$
	$\frac{\text{SCH}_2\text{C/IOI} = -12 \text{ dB}}{\text{PICH} \text{ Ec/IOI} = -15 \text{ dB}}$	+0.60 dB	Ec/lor ratio + TT
	S-CCPCH_Ec/lor = -12 dB	<u>+0.60 dB</u>	Ec/lor ratio + TT
	Cells 3 and 4: CPICH_Ec/lor = -10 dB PCCPCH_Ec/lor = -12 dB	<u>-0.70 dB</u> -0.70 dB	$\frac{\text{Ec/lor ratio} + TT}{\text{Ec/lor ratio} + TT}$
	$SCH_Ec/lor = -12 dB$	-0.70 dB	Ec/lor ratio + TT
	<u>PICH_Ec/lor = -15 dB</u>	<u>-0.70 dB</u>	Ec/lor ratio + TT
	$\frac{\text{S-CCPCH Ec/lor} = -12 \text{ dB}}{\text{CPICH E}}$	<u>-0.70 dB</u>	Ec/lor ratio + TT
	$\frac{CPICH _ L_c}{I} = -10 \text{ dB}$	$CPICH _E_c$	- omulas.
	or	I _{or}	$\underline{CPICH _E_c} = ratio - TT$
	$I_{oc} = -70 \text{ dBm}$	0.3 dB for lor/loc	I_{or} lor/loc = ratio - TT
	lor/loc = -3.4 dB		loc unchanged
	Note: Parameters are valid for cell 1 at time T1 and cell		loc ratio unchanged
			lor/loc = -3.7 dB
			$\frac{CPICH_E_c}{I_{or}} - 10.1 \text{ dB}$
	Chappel 1 during T1:	Channel 1 during	Channel 1 during T1:
		<u>T1:</u>	
	lor(1) = -71.85 dBm lor(3, 4) = -76.85 dBm	<u>+0.05 dB for lor(1)</u> +0.05 dB for lor(3,4)	$\frac{10r(1) + TT}{10r(3, 4) + TT}$
	$\frac{\text{loc}(1) = -70.00 \text{ dBm}}{\text{CPICH} - F}$	$\frac{0.00 \text{ dB for loc(1)}}{0.1 \text{ dP for}}$	loc(1) + TT
	$\frac{CPICH _ L_c}{I} = -10 \text{ dB}$	$CPICH _E_c$	romulas.
	Ur	I _{or}	$\underline{-CPICH _E_c} = ratio + TT$
	$I_{oc} = -70 \text{ dBm}$	0.3 dB for lor/loc	I_{or} lor/loc = ratio + TT
	lor/loc = 2.2 dB		loc unchanged
	Note: Parameters are valid for cell 1 at time T2 and cell		loc ratio unchanged
	2 at time T1		lor/loc = 2.5 dB
			$\frac{CPICH _E_c}{I} _ 9.9 \text{ dB};$
			▲ or
	Channel 1 during T2:	Channel 1 during T2:	Channel 1 during T2:
	lor(1) = -67.75 dBm lor(3, 4) = -74 75 dBm	+0.75 dB for lor(1) -0.05 dB for lor(3, 4)	$\frac{\text{lor}(1) + TT}{\text{lor}(3, 4) + TT}$
	loc(1) = -70.00 dBm	-1.60 dB for loc(1)	loc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	<u>Cell 2:</u> <u>CPICH_Ec/lor = -10 dB</u> <u>PCCPCH_Ec/lor = -12 dB</u> <u>SCH_Ec/lor = -12 dB</u> <u>PICH_Ec/lor = -15 dB</u> <u>S-CCPCH_Ec/lor = -12 dB</u>	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	$\frac{\text{Ec/lor ratio} + TT}{\text{Ec/lor ratio} + TT}$ $\frac{\text{Ec/lor ratio} + TT}{\text{Ec/lor ratio} + TT}$ $\frac{\text{Ec/lor ratio} + TT}{\text{Ec/lor ratio} + TT}$
	Cells 5 and 6: CPICH Ec/lor = -10 dB PCCPCH Ec/lor = -12 dB SCH Ec/lor = -12 dB PICH Ec/lor = -15 dB S-CCPCH Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	$\frac{\text{Ec/lor ratio + TT}}{\text{Ec/lor ratio + TT}}$ $\frac{\text{Ec/lor ratio + TT}}{\text{Ec/lor ratio + TT}}$ $\frac{\text{Ec/lor ratio + TT}}{\text{Ec/lor ratio + TT}}$
	<u>Channel 2 during T1:</u> <u>lor(2) = -67.75 dBm</u> <u>lor(5, 6) = -74.75 dBm</u> <u>loc(2) = -70.00 dBm</u>	Channel 2 during <u>T1:</u> +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.60 dB for loc(2)	<u>Channel 2 during T1:</u> <u>lor(2) + TT</u> <u>lor(5, 6) + TT</u> <u>loc(2) + TT</u>
	<u>Channel 2 during T2:</u> <u>lor(2) = -71.85 dBm</u> <u>lor(5, 6) = -76.85 dBm</u> <u>loc(2) = -70.00 dBm</u>	Channel 2 during T2: +0.05 dB for lor(2) +0.05 dB for lor(5,6) 0.00 dB for loc(2)	$\frac{\text{Channel 2 during T2:}}{\text{lor}(2) + TT}$ $\frac{\text{lor}(5, 6) + TT}{\text{loc}(2) + TT}$

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For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the # symbols.											
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Summary of change:	: # Test Requirements are included
Consequences if	# Test could fail "good UEs" because Test Requirements differ from the Minimum
not approved:	Requirements
Clauses affected:	¥ 8.7.1.2
Other specs affected:	Y N X Other core specifications % X Test specifications % X O&M Specifications %
Other comments:	ж

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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 <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.

8.7.1.2 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 dB.

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

Table 8.7.1.2.1.1: 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 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	Unit	Tes	st 1	Test 2			
Falailletei	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	-10			
PCCPCH_Ec/lor	dB	-1	2	-12			
SCH_Ec/lor	dB	-1	2	-1	12		
PICH_Ec/lor	dB	-1	5	-1	15		
DPCH_Ec/lor	dB	-15	-	-15	-		
OCNS_Ec/lor	dB	-1.11	-0.94	-1.11	-0.94		
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		
Propagation condition	-	AWGN AWGN					
NOTE 1: CPICH RSCP and Ic	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.

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) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.4.

<u>42</u>) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

- 23) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 34)SS shall transmit MEASUREMENT CONTROL message for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.
- 45) UE shall transmit periodically MEASUREMENT REPORT messages.
- 56) 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.
- 67) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 78) 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 8.7.1.2.1.24 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 56) and 67) above are repeated.
- 89) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- <u>910</u>) 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
	Value/Keillark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 - TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	В
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100

-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as
	currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	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

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	
-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	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
Maximum mumbres of sources to be all	monitorea set on usea frequency
-iviaximum number of reported cells	Virtual/active set cells + 2
	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 elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Moscurement Information elements	Not Flesent
Measurement Identity	2
-Measurement Command	2 Sotup
-Measurement Departing Made	Setup
-Measurement Reporting Mode	A shure under des ed en e de DLO
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
	Not Descent
	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
 Inter-frequency measurement quantity 	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
 Measurement quantity for frequency quality 	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-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	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
	Periodical reporting criteria
Amount of roporting	
-Amount of reporting	500 mg
-neputing interval	500 1115
Privsical channel information elements	Net Dresset
-DPCH compressed mode status into	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

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

8.7.1.2.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in <u>clause table</u> 8.7.1.2.1.24.

Table 8.7.1.2.1.3: CPICH_RSCP Inter frequency relative accuracy, test requirements

Paramotor	Unit	Accur	Conditions	
Farameter	onn	Normal condition	Extreme condition	<u>lo [dBm]</u>
CPICH_RSCP	<u>dBm</u>	<u>±7.1</u>	<u>±7.1</u>	<u>-9450</u>

Perspector Unit Test 1 Test 2						
Parameter	Unit	Cell 1 Cell 2		Cell 1	Cell 2	
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	
CPICH_Ec/lor	<u>dB</u>	-1	-10 -10			
PCCPCH_Ec/lor	<u>dB</u>	-1	2	-1	12	
SCH_Ec/lor	dB	-1	2	-	12	
PICH_Ec/lor	<u>dB</u>	<u>-15</u> <u>-15</u>				
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>		<u>-15</u>	=	
OCNS_Ec/lor	<u>dB</u>	<u>-1.11</u> <u>-0.94</u>		<u>-1.11</u>	<u>-0.94</u>	
loc	<u>dBm/ 3.84</u> <u>MHz</u>	<u>-61.6</u>	<u>-61.6</u> <u>-61.6</u> <u>-83.0</u>			
<u>Îor/loc</u>	<u>dB</u>	9.84 9.84 0.3 -9.24				
CPICH RSCP, Note 1	<u>dBm</u>	<u>-61.8</u>	<u>-61.8</u>	<u>-92.7</u>	<u>-112.7</u>	
lo, Note 1	<u>dBm</u>	<u>-51.3</u>	<u>-51.3</u>	<u>-79.8</u>	<u>-93.0</u>	
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 sequential	y. Test 1 shall b	e done first. Afte	r test 1 has bee	n 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 8.7.1.2.1.4: CPICH RSCP Inter frequency tests parameters

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

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July – 01 August 2003

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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.

8.7.1.2 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 dB.

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

Table 8.7.1.2.1.1: 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 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.

|--|

Devementer	11:4	Tes	st 1	Test 2		
Parameter	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	-10		-10		
PCCPCH_Ec/lor	dB	-12		-12		
SCH_Ec/lor	dB	-12		-12		
PICH_Ec/lor	dB	-15		-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	
Propagation condition	-	AW	'GN	AWGN		
NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.						

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for test 2 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

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) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.4.

12) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

- 23) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 34) SS shall transmit MEASUREMENT CONTROL message for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.
- 45) UE shall transmit periodically MEASUREMENT REPORT messages.
- 56) 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.
- 67) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 78) 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 8.7.1.2.1.24 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 56) and 67) above are repeated.
- 89) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- <u>910</u>) 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
	Value/Keillark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 - TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	В
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100

-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as
	currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	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

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	
-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	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
-iviaximum number of reported cells	Virtual/active set cells + 2
	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 elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Moscurement Information elements	Not Flesent
Measurement Identity	2
-Measurement Command	2 Sotup
-Measurement Departing Made	Setup
-Measurement Reporting Mode	A shure under des ed en e de DLO
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
	Not Descent
	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
 Measurement quantity for frequency quality 	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-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	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	500 mg
-neputing interval	500 1115
Privsical channel information elements	Net Dresset
-DPCH compressed mode status into	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

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

8.7.1.2.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in <u>clause table</u> 8.7.1.2.1.24.

Table 8.7.1.2.1.3: CPICH_RSCP Inter frequency relative accuracy, test requirements

Paramotor	Unit	Accur	acy [dB]	Conditions
Farameter	onn	Normal condition	Extreme condition	lo [dBm]
CPICH_RSCP	<u>dBm</u>	<u>±7.1</u>	<u>±7.1</u>	<u>-9450</u>

Demonster	11	Tes	st 1	Te	st 2	
Parameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	
CPICH_Ec/lor	<u>dB</u>	-1	<u>0</u>	<u>-10</u>		
PCCPCH_Ec/lor	<u>dB</u>	-1	2	<u>-12</u>		
SCH_Ec/lor	dB	-1	2	Υ.	12	
PICH_Ec/lor	<u>dB</u>	<u>-15</u>		-	<u>15</u>	
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	-	<u>-15</u>		
OCNS_Ec/lor	<u>dB</u>	<u>-1.11</u>	<u>-0.94</u>	<u>-1.11</u>	<u>-0.94</u>	
loc	<u>dBm/ 3.84</u> <u>MHz</u>	<u>-61.6</u> <u>-61.6</u>		<u>-83.00</u>	<u>-93.46</u>	
<u>Îor/loc</u>	<u>dB</u>	9.84 9.84		<u>0.3</u>	<u>-9.24</u>	
CPICH RSCP, Note 1	<u>dBm</u>	<u>-61.8</u> <u>-61.8</u>		<u>-92.7</u>	<u>-112.7</u>	
lo, Note 1	<u>dBm</u>	<u>-51.3</u> <u>-51.3</u> <u>-79.8</u> <u>-93.0</u>				
Propagation condition - <u>AWGN</u> 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 sequential	y. Test 1 shall b	e done first. Afte	r test 1 has bee	n 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 8.7.1.2.1.4: CPICH RSCP Inter frequency tests parameters

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

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July – 01 August 2003

ж		<mark>34.121</mark>	CR 263	жr	ev	-	ж	Current vers	ion:	5.0.0	ж
For <u>HELP</u> o	n u:	sing this for	rm, see bottom	of this pag	ge or	look	at the	e pop-up text	over	the ೫ syr	nbols.
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Reason for change:	a lest Requirements are missing.
Summary of change	: # Test Requirements are included
Consequences if	* Test could fail "good UEs" because Test Requirements differ from the Minimum
not approved:	Requirements
Clauses affected:	第 8.7.1.2
	YN
Other specs	米 X Other core specifications 米
affected:	X Test specifications
	X 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.

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 dB.

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

Table 8.7.1.2.1.1: 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 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.

|--|

Devementer	11:4	Test 1			Test 2		
Parameter	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	-10			
PCCPCH_Ec/lor	dB	-1	2	-12			
SCH_Ec/lor	dB	-1	2	-1	2		
PICH_Ec/lor	dB	-15		-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		
lo, 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.

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) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.4.

12) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

- 23) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 34) SS shall transmit MEASUREMENT CONTROL message for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.
- 45) UE shall transmit periodically MEASUREMENT REPORT messages.
- 56) 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.
- 67) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 78) 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 8.7.1.2.1.24 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 56) and 67) above are repeated.
- 89) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- <u>910</u>) 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
	Value/Keillark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 - TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	В
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100

-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as
	currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	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

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	
-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	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
Maximum mumbres of sources to be all	monitorea set on usea frequency
-iviaximum number of reported cells	Virtual/active set cells + 2
	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 elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Moscurement Information elements	Not Flesent
Measurement Identity	2
-Measurement Command	2 Sotup
-Measurement Departing Made	Setup
-Measurement Reporting Mode	A shure under des ed en e de DLO
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
	Not Descent
	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
 Measurement quantity for frequency quality 	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-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	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	500 mg
-neputing interval	500 1115
Privsical channel information elements	Net Dresset
-DPCH compressed mode status into	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

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

8.7.1.2.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in <u>clause table</u> 8.7.1.2.1.24.

Table 8.7.1.2.1.3: CPICH_RSCP Inter frequency relative accuracy, test requirements

Parameter	Unit	Accur	Conditions	
	onn	Normal condition	Extreme condition	lo [dBm]
CPICH_RSCP	<u>dBm</u>	<u>±7.1</u> <u>±7.1</u>		<u>-9450</u>

Demonster	11	Tes	st 1	Test 2					
Parameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2				
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2				
CPICH_Ec/lor	<u>dB</u>	-1	<u>0</u>	Υ.	<u>10</u>				
PCCPCH_Ec/lor	<u>dB</u>	-1	2	٦.	<u>12</u>				
SCH_Ec/lor	dB	-1	2	Υ.	12				
PICH_Ec/lor	<u>dB</u>	-1	<u>5</u>	<u>-15</u>					
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	-	<u>-15</u>					
OCNS_Ec/lor	<u>dB</u>	<u>-1.11</u>	<u>-0.94</u>	<u>-1.11</u>	<u>-0.94</u>				
loc	<u>dBm/ 3.84</u> <u>MHz</u>	<u>-61.6</u>	<u>-61.6</u>	<u>-83.00</u>	<u>-93.46</u>				
<u>Îor/loc</u>	<u>dB</u>	<u>9.84</u>	<u>9.84</u>	<u>0.3</u>	<u>-9.24</u>				
CPICH RSCP, Note 1	<u>dBm</u>	<u>-61.8</u>	<u>-61.8</u>	<u>-92.7</u>	<u>-112.7</u>				
lo, Note 1	<u>dBm</u>	<u>-51.3</u>	<u>-51.3</u>	<u>-79.8</u>	<u>-93.0</u>				
Propagation condition	<u>_</u>	AW	GN	AW	/GN				
NOTE 1: CPICH RSCP and to levels have been calculated from other parameters for information									
purposes. They are not settable parameters themselves.									
Tests shall be done sequential	y. Test 1 shall b	e done first. Afte	r test 1 has bee	n executed test	parameters				
for test 2 shall be set within 5 s	econds so that l	for test 2 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.							

Table 8.7.1.2.1.4: CPICH RSCP Inter frequency tests parameters

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

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July – 01 August 2003

		CHANG	E REQ	UES	т		CR-Form-v7
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For <u>HELP</u> on	using this fo	rm, see bottom of t	his page or	look at	the pop-up te	ext over th	e ж symbols.
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Summary of change: #	Minimum requirements have been modified. Test Requirements are included.
Consequences if #	TS 25.133 and TS 34.121 are inconsistent. Test could fail "good UEs" because
not approved:	Test Requirements differ from the Minimum Requirements.

Clauses affected:	೫ 8.7.1.1
Other specs affected:	Y N X Other core specifications X Test specifications X O&M Specifications
Other comments:	ж ж

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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.

8.7.1 CPICH RSCP

8.7.1.1 Intra frequency measurements accuracy

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the actual CPICH RSCP power from same cell.

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

8.7.1.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

- CPICH_RSCP1 $|_{dBm} \ge -114 \text{ dBm}.$

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

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

		Accur	Conditions	
Parameter Unit Nor		Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dBm	±6	±9	-9470
CFICH_KSCF	dBm	±8	±11	-7050

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.1 and A.9.1.1.2.

8.7.1.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits in clause 8.7.1.1.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

- 8.7.1.1.1.4 Method of test
- 8.7.1.1.1.4.1 Initial conditions

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

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

In this case all cells are on the same frequency. CPICH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Baramotor	Unit	Test 1		Tes	st 2	Test 3		
Faiallelei	Offic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Char	Channel 1		inel 1	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	-15 -15		-15			
DPCH_Ec/lor	dB	-15	-	-15	-	-15	-	
OCNS_Ec/lor	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94	
loc	dBm/ 3.84 MHz	-75	.54	-59	.98	-97. <mark>5247</mark>		
Îor/loc	dB	4	0	9	0	0	-6.53	
CPICH RSCP, Note 1	dBm	-81.5	-85.5	-60.98	-69.88	- 107. <mark>54</mark> <u>7</u>	-114.0	
Io, Note 1	dBm/3.84 MHz	-6	69	-50		-9	94	
Propagation condition	-	- AWGN AWGN AWGN					GN	
NOTE 1: CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not sottable parameters themselves								

Table 8.7.1.1.1.2: CPICH RSCP Intra frequency test-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] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.1.4.2 Procedure

1) <u>A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.4.</u>

<u>+2</u>)SS shall transmit MEASUREMENT CONTROL message.

23) UE shall transmit periodically MEASUREMENT REPORT messages.

- 34) SS shall check CPICH_RSCP value in MEASUREMENT REPORT messages. CPICH RSCP power of Cell 1 reported by UE is compared to actual CPICH RSCP power for each MEASUREMENT REPORT message.
- 45) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.24 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 34 above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.24 for Test 3. While RF parameters are set up according to table 8.7.1.1.1.24 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.24 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 34) above is repeated.
- 50) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 67) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
LIE 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 RI C
- Periodical Reporting / Event Triager 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	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	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

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.1.1.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2.

Baramotor	Unit	Accur	Conditions	
Farameter	<u>om</u>	Normal condition	Extreme condition	lo [dBm]
	<u>dBm</u>	<u>±7.4</u>	<u>±10.4</u>	<u>-9470</u>
CPICH_RSCP	<u>dBm</u>	<u>±9.4</u>	<u>±12.4</u>	<u>-7050</u>

Table 8.7.1.1.1.3: CPICH RSCP Intra frequency absolute accuracy, test requirement

Table 8.7.1.1.1.4: CPICH RSCP Intra frequency test parameters

Paramotor	Unit	Tes	<u>st 1</u>	Te	<u>st 2</u>	Test 3		
Farameter	<u>onn</u>	Cell 1	Cell 2	Cell 1	Cell 2	<u>Cell 1</u>	Cell 2	
UTRA RF Channel number		<u>Char</u>	<u>nel 1</u>	Channel 1		Channel 1		
CPICH_Ec/lor	<u>dB</u>	-1	0	-	10	-1	0	
PCCPCH_Ec/lor	<u>dB</u>	-1	2	-1	12	-1	2	
<u>SCH_Ec/lor</u>	<u>dB</u>	-1	2	-	12	-1	2	
PICH_Ec/lor	<u>dB</u>	-1	<u> 5</u>	-1	<u>15</u>	<u>-15</u>		
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	_	<u>-15</u>		<u>-15</u>	_	
OCNS_Ec/lor	<u>dB</u>	<u>-1.11</u>	<u>-0.94</u>	<u>-1.11</u>	<u>-0.94</u>	<u>-1.11</u>	<u>-0.94</u>	
loc	<u>dBm/ 3.84 MHz</u>	-74	.54	<u>-61,6</u>		<u>-96.47</u>		
<u>Îor/loc</u>	<u>dB</u>	<u>4.3</u>	<u>0.3</u>	<u>9.3</u>	<u>0.3</u>	<u>0.3</u>	<u>-6.23</u>	
CPICH RSCP, Note 1	<u>dBm</u>	<u>-80.2</u>	<u>-84.2</u>	<u>-62.3</u>	<u>-71.3</u>	<u>-106.17</u>	<u>-112.7</u>	
lo, Note 1	<u>dBm</u>	<u>-6</u>	<u>7.8</u>	-5	<u>1,4</u>	-92	<u>2,8</u>	
Propagation condition	<u>-</u>	AW	<u>'GN</u>	AWGN		AW	' <u>GN</u>	
NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They								
are not settable paran	are not settable parameters themselves.							
Tests shall be done sequentially	. Test 1 shall be done	first. After	test 1 has	been exec	cuted test p	parameters	for tests	
2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests								

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

8.7.1.1.2 Relative accuracy requirement

8.7.1.1.2.1 Definition and applicability

The relative accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on the same frequency.

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

8.7.1.1.2.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

- CPICH_RSCP1,2 $|_{dBm} \ge$ -114 dBm.

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

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

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

		Accur	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
CPICH_RSCP	dBm	±3	±3	-9450

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.2 and A.9.1.1.2.

8.7.1.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.1.2.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

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

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

In this case all cells are on the same frequency. CPICH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

12)SS shall transmit MEASUREMENT CONTROL message.

<u>23</u>) UE shall transmit periodically MEASUREMENT REPORT messages.

34) 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.

45) The result of step 3) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

56) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.42.23 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 34) and 45) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.42.23 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.42.23 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 34) and 45) above are repeated.

67) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

78) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.1.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.1.1.2.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in <u>clause table</u> 8.7.1.1.2.2.

Table 8.7.1.1.2.2: CPICH_RSCP Intra frequency relative accuracy, test requirementsParameterUnitAccuracy [dB]ConditionsNormal conditionExtreme conditionIo [dBm]CPICH_RSCPdBm±3.8±3.8

Table 8.7.1.1.2.3: CPICH RSCP Intra frequency test parameters

Demonster	11	Tes	st 1	Test 2		Tes	st 3	
Parameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Char	nel 1	Channel 1		Chan	nel 1	
CPICH_Ec/lor	<u>dB</u>	-1	0	-	0	<u>-1</u>	0	
PCCPCH_Ec/lor	<u>dB</u>	-1	2	<u> </u>	2	<u>-1</u>	2	
SCH_Ec/lor	dB	-1	2	-1	2	-1	2	
PICH_Ec/lor	dB	-1	- <u>15</u>		-15		5	
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	11	<u>-15</u>	_	<u>-15</u>	- 1	
OCNS_Ec/lor	<u>dB</u>	<u>-1.11</u>	<u>-0.94</u>	<u>-1.11</u>	-0.94	<u>-1.11</u>	<u>-0.94</u>	
loc	<u>dBm/ 3.84 MHz</u>	<u>-74</u>	.54	<u>-61,6</u>		<u>-96.47</u>		
<u>Îor/loc</u>	<u>dB</u>	<u>4.3</u>	<u>0.3</u>	<u>9.3</u>	<u>0.3</u>	<u>0.3</u>	<u>-6.23</u>	
CPICH RSCP, Note 1	<u>dBm</u>	<u>-80.2</u>	<u>-84.2</u>	-62.3	-71.3	<u>-106.17</u>	<u>-112.7</u>	
lo, Note 1	<u>dBm</u>	-6	7. <u>8</u>	-5	1,4	-92	2 <u>,8</u>	
Propagation condition	-	AW	' <u>GN</u>	AWGN		AW	<u>GN</u>	
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 exec	cuted test p	parameters	for tests	
2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

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

CHANGE REQUEST										CR-FUIII-V7
¥	<mark>34.121</mark>	CR 2	265	жrev	-	Ħ	Current vers	ion:	4.0.0	ж
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the # symbols.										
Title: %	Test Requ	uiremen	its for RRM C		SCP II	ntra I	Frequency Me	easu	rement	
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Reason for change: ¥	Core requirements have been modified in 25.133 CR578 (R4-030481, RP- 030209). Test Requirements are missing.
Summary of change: #	Minimum requirements have been modified. Test Requirements are included.
Consequences if #	TS 25.133 and TS 34.121 are inconsistent. Test could fail "good UEs" because
not approved:	Test Requirements differ from the Minimum Requirements.
Clauses affected: #	8.7.1.1
	YN
Other specs #	X Other core specifications #
affected:	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.

8.7.1 CPICH RSCP

8.7.1.1 Intra frequency measurements accuracy

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the actual CPICH RSCP power from same cell.

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

8.7.1.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

- CPICH_RSCP1 $|_{dBm} \ge -114 \text{ dBm}.$

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

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

		Accur	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dBm	±6	±9	-9470
CFICH_KSCF	dBm	±8	±11	-7050

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.1 and A.9.1.1.2.

8.7.1.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits in clause 8.7.1.1.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

- 8.7.1.1.1.4 Method of test
- 8.7.1.1.1.4.1 Initial conditions

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

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

In this case all cells are on the same frequency. CPICH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Baramotor	Unit	Tes	st 1	Tes	st 2	Test 3	
Faiallelei	Offic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Char	Channel 1		inel 1	Channel 1	
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	-15		-15		-15	
DPCH_Ec/lor	dB	-15	-	-15	-	-15	-
OCNS_Ec/lor	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
loc	dBm/ 3.84 MHz	-75	.54	-59.98		-97. <mark>52<u>47</u></mark>	
Îor/loc	dB	4	0	9	0	0	-6.53
CPICH RSCP, Note 1	dBm	-81.5	-85.5	-60.98	-69.88	- 107. <mark>54</mark> <u>7</u>	-114.0
lo, Note 1	dBm/3.84 MHz	-69		-69 -50		-9)4
Propagation condition	- AWGN AWGN AWGN						
NOTE 1: CPICH RSCP and Io I	evels have been calc	ulated from	n other par	ameters fo	or informati	on purpose	es. They

Table 8.7.1.1.1.2: CPICH RSCP Intra frequency test 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] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.1.4.2 Procedure

1) <u>A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.4.</u>

<u>+2</u>)SS shall transmit MEASUREMENT CONTROL message.

23) UE shall transmit periodically MEASUREMENT REPORT messages.

- 34) SS shall check CPICH_RSCP value in MEASUREMENT REPORT messages. CPICH RSCP power of Cell 1 reported by UE is compared to actual CPICH RSCP power for each MEASUREMENT REPORT message.
- 45) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.24 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 34 above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.24 for Test 3. While RF parameters are set up according to table 8.7.1.1.1.24 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.24 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 34) above is repeated.
- 50) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 67) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
LIE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	Not i lesent
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	Weary
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	r enoulour reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	initia nequency 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	
-SEN-SEN 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	TRUF
-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	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

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.1.1.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2.

Paramotor	Unit	Accur	Conditions	
Farameter	<u>onn</u>	Normal condition	Extreme condition	lo [dBm]
	dBm	<u>±7.4</u>	<u>±10.4</u>	-9470
CPICH_RSCP	<u>dBm</u>	<u>±9.4</u>	<u>±12.4</u>	<u>-7050</u>

Table 8.7.1.1.1.3: CPICH RSCP Intra frequency absolute accuracy, test requirement

Table 8.7.1.1.1.4: CPICH RSCP Intra frequency test parameters

Paramotor	Unit	Tes	<u>st 1</u>	Te	<u>st 2</u>	Test 3	
Farameter	<u>onn</u>	Cell 1	Cell 2	Cell 1	Cell 2	<u>Cell 1</u>	Cell 2
UTRA RF Channel number		<u>Char</u>	Channel 1		nnel 1	Channel 1	
CPICH_Ec/lor	<u>dB</u>	-1	0	-	10	-10	
PCCPCH_Ec/lor	<u>dB</u>	-1	2	-1	12	-1	2
<u>SCH_Ec/lor</u>	<u>dB</u>	-1	2	-	12	-1	2
PICH_Ec/lor	<u>dB</u>	-1	<u> 5</u>	-15		<u>-15</u>	
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	_	<u>-15</u>		<u>-15</u>	_
OCNS_Ec/lor	<u>dB</u>	<u>-1.11</u>	<u>-0.94</u>	<u>-1.11</u>	<u>-0.94</u>	<u>-1.11</u>	<u>-0.94</u>
loc	<u>dBm/ 3.84 MHz</u>	-74	.54	<u>-61,6</u>		<u>-96.47</u>	
<u>Îor/loc</u>	<u>dB</u>	<u>4.3</u>	<u>0.3</u>	<u>9.3</u>	<u>0.3</u>	<u>0.3</u>	<u>-6.23</u>
CPICH RSCP, Note 1	<u>dBm</u>	<u>-80.2</u>	<u>-84.2</u>	<u>-62.3</u>	<u>-71.3</u>	<u>-106.17</u>	<u>-112.7</u>
lo, Note 1	<u>dBm</u>	<u>-6</u>	<u>7.8</u>	-5	<u>1,4</u>	-92	<u>2,8</u>
Propagation condition	-	AW	<u>'GN</u>	AW	/ <u>GN</u>	AW	' <u>GN</u>
NOTE 1: CPICH RSCP and lo	levels have been calc	ulated fron	n other par	ameters fo	or informati	on purpose	<u>es. They</u>
are not settable paran	neters themselves.						
Tests shall be done sequentially	Test 1 shall be done	first. After	test 1 has	been exec	cuted test p	parameters	for tests
2 and 3 shall be set within 5 sec	onds so that UE does	not loose	the Cell 2 i	n between	the tests		

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

8.7.1.1.2 Relative accuracy requirement

8.7.1.1.2.1 Definition and applicability

The relative accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on the same frequency.

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

8.7.1.1.2.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

- CPICH_RSCP1,2 $|_{dBm} \ge$ -114 dBm.

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

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

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

		Accur	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
CPICH_RSCP	dBm	±3	±3	-9450

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.2 and A.9.1.1.2.

8.7.1.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.1.2.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

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

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

In this case all cells are on the same frequency. CPICH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

12)SS shall transmit MEASUREMENT CONTROL message.

<u>23</u>) UE shall transmit periodically MEASUREMENT REPORT messages.

34) 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.

45) The result of step 3) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

56) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.42.23 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 34) and 45) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.42.23 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.42.23 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 34) and 45) above are repeated.

67) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

78) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.1.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.1.1.2.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in <u>clause table</u> 8.7.1.1.2.2.

Table 8.7.1.1.2.2: CPICH_RSCP Intra frequency relative accuracy, test requirementsParameterUnitAccuracy [dB]ConditionsNormal conditionExtreme conditionIo [dBm]CPICH_RSCPdBm±3.8±3.8

Table 8.7.1.1.2.3: CPICH RSCP Intra frequency test parameters

Peremeter	l Init	Te	st 1	Tes	st 2	Test 3		
Parameter	<u>onit</u>	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Char	nel 1	Char	nnel 1	Channel 1		
CPICH_Ec/lor	<u>dB</u>		0	-1	10	<u>-10</u>		
PCCPCH_Ec/lor	<u>dB</u>		2	-1	12	-1	2	
SCH_Ec/lor	<u>dB</u>		2	-1	12	-1	2	
PICH_Ec/lor	<u>dB</u>	-	<u>-15</u>		1 <u>5</u>	<u>-15</u>		
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	_	<u>-15</u>	_	<u>-15</u>	-	
OCNS_Ec/lor	<u>dB</u>	<u>-1.11</u>	<u>-0.94</u>	<u>-1.11</u>	<u>-0.94</u>	<u>-1.11</u>	<u>-0.94</u>	
loc	<u>dBm/ 3.84 MHz</u>	-74	.54	<u>-61,6</u>		<u>-96.47</u>		
<u>Îor/loc</u>	<u>dB</u>	<u>4.3</u>	<u>0.3</u>	<u>9.3</u>	<u>0.3</u>	<u>0.3</u>	<u>-6.23</u>	
CPICH RSCP, Note 1	<u>dBm</u>	-80.2	-84.2	-62.3	-71.3	<u>-106.17</u>	<u>-112.7</u>	
lo, Note 1	<u>dBm</u>	-6	7. <u>8</u>	-5	1, <u>4</u>	-92	2, <u>8</u>	
Propagation condition	_	AW	<u>'GN</u>	AW	<u>/GN</u>	AW	GN	
NOTE 1: CPICH RSCP and lo	evels have been calc	ulated fron	n other par	ameters fo	or informati	ion purpose	<u>es. They</u>	
are not settable parameters themselves.								
Tests shall be done sequentially	Test 1 shall be done	first. After	test 1 has	been exec	cuted test	oarameters	for tests	
2 and 3 shall be set within 5 second	onds so that UE does	not loose	<u>the Cell 2 i</u>	in between	the tests.			

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

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July – 01 August 2003

CHANGE REQUEST										
æ	34.121	CR 26	<mark>6</mark>	rev	-	ж	Current vers	^{ion:} 5.0.0	ж	
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the # symbols.										
Proposed chang	e affects:	UICC apps	ж 📃	ME X	Rac	dio A	ccess Networ	k Core Ne	etwork	
Title:	ដ <mark>Test Req</mark>	uirements f	or RRM CPI	CH RS	CP Ir	ntra I	-requency Me	asurement		
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Reason for chan	ge: ೫ Core	e requireme	nts have bee	en mod	lified	in 25	.133 CR579	(R4-030482, R	P-	

Reason for change:	030209). Test Requirements are missing
Summary of change.	: # Minimum requirements have been modified. Test Requirements are included.
Consequences if	# TS 25.133 and TS 34.121 are inconsistent. Test could fail "good UEs" because
not approved:	Test Requirements differ from the Minimum Requirements.
Clauses affected:	¥ 8.7.1.1
	Y N
Other specs	X Other core specifications X
affected:	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.

8.7.1 CPICH RSCP

8.7.1.1 Intra frequency measurements accuracy

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the actual CPICH RSCP power from same cell.

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

8.7.1.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

- CPICH_RSCP1 $|_{dBm} \ge -114 \text{ dBm}.$

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

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

		Accur	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
	dBm	±6	±9	-9470
CFICH_KSCF	dBm	±8	±11	-7050

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.1 and A.9.1.1.2.

8.7.1.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits in clause 8.7.1.1.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

- 8.7.1.1.1.4 Method of test
- 8.7.1.1.1.4.1 Initial conditions

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

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

In this case all cells are on the same frequency. CPICH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Baramotor	Unit	Tes	st 1	Tes	st 2	Test 3	
Faiallelei	Offic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/lor	dB	-1	0	-10		-10	
PCCPCH_Ec/lor	dB	-1	2	-12		-12	
SCH_Ec/lor	dB	-1	2	-12		-12	
PICH_Ec/lor	dB	-15		-15		-15	
DPCH_Ec/lor	dB	-15	-	-15	-	-15	-
OCNS_Ec/lor	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
loc	dBm/ 3.84 MHz	-75.54		-59.98		-97. <mark>52</mark> 47	
Îor/loc	dB	4	0	9	0	0	-6.53
CPICH RSCP, Note 1	dBm	-81.5	-85.5	-60.98	-69.88	- 107. <mark>54</mark> <u>7</u>	-114.0
lo, Note 1	dBm/3.84 MHz	-69		-50		-9)4
Propagation condition	- AWGN AWGN AW				AW	GN	
NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves							

Table 8.7.1.1.1.2: CPICH RSCP Intra frequency test-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] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.1.4.2 Procedure

1) <u>A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.4.</u>

<u>+2</u>)SS shall transmit MEASUREMENT CONTROL message.

23) UE shall transmit periodically MEASUREMENT REPORT messages.

- 34) SS shall check CPICH_RSCP value in MEASUREMENT REPORT messages. CPICH RSCP power of Cell 1 reported by UE is compared to actual CPICH RSCP power for each MEASUREMENT REPORT message.
- 45) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.24 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 34 above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.24 for Test 3. While RF parameters are set up according to table 8.7.1.1.1.24 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.24 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 34) above is repeated.
- 50) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- 67) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
LIE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	Not i resent
Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	Moarry
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
	r enoucar reporting
-Additional measurement list	Not Present
	Intra-frequency measurement
-Intra-frequency measurement	initia frequency measurement
- Intra-frequency measurement objects list	Not Present
-Intra-frequency measurement quantity	Not i resent
-Filter coefficient	0
-CHOICE mode	
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-SEN-SEN observed time difference reporting	
indicator	No report
-Coll synchronisation information reporting	
indicator	TDUE
-Coll Identity reporting indicator	TRUE
	FDD
-CPICH Ec/NO reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Difference reporting indicator	TRUE
-Reporting quantities for monitored set cells	INOL
-SEN-SEN observed time difference reporting	No report
indicator	
-Cell synchronisation information reporting	FALSE
indicator	I NEOL
-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	Not Tresent
	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
	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	200 113
DPCH comproseed mode status info	Not Procent
-Di Ori compresseu mode status inio	

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.1.1.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2.

Baramotor	Unit	Accur	Conditions	
Farameter	<u>om</u>	Normal condition	Extreme condition	lo [dBm]
	<u>dBm</u>	<u>±7.4</u>	<u>±10.4</u>	<u>-9470</u>
CFICH_K3CF	<u>dBm</u>	<u>±9.4</u>	<u>±12.4</u>	<u>-7050</u>

Table 8.7.1.1.1.3: CPICH RSCP Intra frequency absolute accuracy, test requirement

Table 8.7.1.1.1.4: CPICH RSCP Intra frequency test parameters

Paramotor	Unit	Tes	<u>st 1</u>	Te	<u>st 2</u>	Test 3		
Farameter	<u>onn</u>	Cell 1	Cell 2	Cell 1	Cell 2	<u>Cell 1</u>	Cell 2	
UTRA RF Channel number		Channel 1		Channel 1		Channel 1		
CPICH_Ec/lor	<u>dB</u>	-1	0	<u>-10</u>		<u>-10</u>		
PCCPCH_Ec/lor	<u>dB</u>	-1	2	<u>-12</u>		-12		
<u>SCH_Ec/lor</u>	<u>dB</u>	-1	2	<u>-12</u>		<u>-12</u>		
PICH_Ec/lor	<u>dB</u>	-1	5	<u>-15</u>		<u>-15</u>		
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	11	<u>-15</u>		<u>-15</u>	_	
OCNS_Ec/lor	<u>dB</u>	<u>-1.11</u>	<u>-0.94</u>	<u>-1.11</u>	<u>-0.94</u>	<u>-1.11</u>	<u>-0.94</u>	
loc	<u>dBm/ 3.84 MHz</u>	-74.54		<u>-61,6</u>		<u>-96.47</u>		
<u>Îor/loc</u>	<u>dB</u>	<u>4.3</u>	<u>0.3</u>	<u>9.3</u>	<u>0.3</u>	<u>0.3</u>	<u>-6.23</u>	
CPICH RSCP, Note 1	<u>dBm</u>	<u>-80.2</u>	<u>-84.2</u>	<u>-62.3</u>	<u>-71.3</u>	<u>-106.17</u>	<u>-112.7</u>	
lo, Note 1	<u>dBm</u>	<u>-67.8</u> <u>-51,4</u> <u>-92</u>					<u>2,8</u>	
Propagation condition	<u>-</u>	AW	' <u>GN</u>	AWGN		AW	' <mark>GN</mark>	
NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They								
are not settable parameters themselves.								
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests								
2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests								

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

8.7.1.1.2 Relative accuracy requirement

8.7.1.1.2.1 Definition and applicability

The relative accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on the same frequency.

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

8.7.1.1.2.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

- CPICH_RSCP1,2 $|_{dBm} \ge -114 \text{ dBm}.$

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

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

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

		Accur	Conditions	
Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
CPICH_RSCP	dBm	±3	±3	-9450

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.2 and A.9.1.1.2.

8.7.1.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.1.2.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

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

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

In this case all cells are on the same frequency. CPICH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

12)SS shall transmit MEASUREMENT CONTROL message.

<u>23</u>) UE shall transmit periodically MEASUREMENT REPORT messages.

34) 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.

45) The result of step 3) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

56) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.42.23 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 34) and 45) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.42.23 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.42.23 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 34) and 45) above are repeated.

67) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

78) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.1.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.1.1.2.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in <u>clause table</u> 8.7.1.1.2.2.

Table 8.7.1.1.2.2: CPICH_RSCP Intra frequency relative accuracy, test requirements Parameter Unit Accuracy [dB] Conditions Normal condition Extreme condition Io [dBm] CPICH_RSCP dBm ±3.8 ±3.8 -94...-50

Table 8.7.1.1.2.3: CPICH RSCP Intra frequency test parameters

Demonster	11	Tes	st 1	Te	st 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	<u>dB</u>	-1	0	<u>-10</u>		<u>-10</u>			
PCCPCH_Ec/lor	<u>dB</u>	-1	-12		<u>-12</u>		<u>-12</u> <u>-12</u>		2
SCH_Ec/lor	dB	-1	2	<u>-12</u>		<u>-12</u> <u>-12</u>			
PICH_Ec/lor	dB	-1	-15		-15		5		
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	11	<u>-15</u>	_	<u>-15</u>	- 1		
OCNS_Ec/lor	<u>dB</u>	<u>-1.11</u>	<u>-0.94</u>	<u>-1.11</u>	-0.94	<u>-1.11</u>	<u>-0.94</u>		
loc	<u>dBm/ 3.84 MHz</u>	<u>-74</u>	-74.54		<u>-61,6</u>		<u>-96.47</u>		
<u>Îor/loc</u>	<u>dB</u>	<u>4.3</u>	<u>0.3</u>	<u>9.3</u>	<u>0.3</u>	<u>0.3</u>	<u>-6.23</u>		
CPICH RSCP, Note 1	<u>dBm</u>	<u>-80.2</u>	<u>-84.2</u>	-62.3	-71.3	<u>-106.17</u>	<u>-112.7</u>		
lo, Note 1	<u>dBm</u>	-67.8 -51,4 -92,8							
Propagation condition	-	<u>- AWGN AWGN AV</u>				AW	<u>GN</u>		
NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They									
are not settable parameters themselves.									
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests									
2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.									

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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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.
8.4 RRC Connection Control

8.4.1 RRC Re-establishment delay

8.4.1.1 Test 1

8.4.1.1.1 Definition and applicability

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

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

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

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.1.2 Minimum requirement

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

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

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

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

where

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

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

N ₃₁₃ =	20
T ₃₁₃ =	0s
T _{search} =	100ms
$T_{RA} =$	The additional delay caused by the random access procedure. 40 ms is assumed in this test case.
T _{SI}	is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.33 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

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

8.4.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

188

8.4.1.1.4 Method of test

8.4.1.1.4.1 Initial conditions

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

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

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

Table 8.4.1.1 Gen	eral test parameters	for RRC re-establis	nment delay, Test 1
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Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference	As specified in clause C.3.1 and C.2.1
		measurement channel	
		12.2 kbps	
Power Control		On	
Active cell, Initial		Cell 1	
condition			
Active cell, Final		Cell 2	
condition			
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall only include intra frequency
			neighbours.
Cell 2			Included in the monitored set
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

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

Parameter	Unit	Cell 1		Ce	2
		T1	T2	T1	T2
Cell Frequency	ChNr		1		1
CPICH_Ec/lor	dB	-1	0	-1	0
PCCPCH_Ec/lor	dB	-1	2	-1	2
SCH_Ec/lor	dB	-1	2	-12	
PICH_Ec/lor	dB	-1	5	-15	
DCH_Ec/lor	dB	-17	-Infinity	Not applicable	
OCNS_Ec/lor	dB	-1.049	-0.941	-0.941	
\hat{I}_{or}/I_{oc}	dB	2,39	-Infinity	4,39	<u>0,02</u>
I _{oc}	dBm/ 3.84 MHz		-7	0	
CPICH_Ec/lo	dB	-15	-Infinity	-1	3
Propagation Condition			AWO	GN	

8.4.1.1.4.2 Procedure

1

- 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 2.0 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to 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 1920ms(Minimum requirement + 100ms), allow 2s in the test case.

8.4.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% 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.

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8.4 RRC Connection Control

8.4.1 RRC Re-establishment delay

8.4.1.1 Test 1

8.4.1.1.1 Definition and applicability

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

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

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

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.1.2 Minimum requirement

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

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

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

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

where

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

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

N ₃₁₃ =	20
T ₃₁₃ =	0s
$T_{search} =$	100ms
$T_{RA} =$	The additional delay caused by the random access procedure. 40 ms is assumed in this test case.
T _{SI}	is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

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

8.4.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

188

8.4.1.1.4 Method of test

8.4.1.1.4.1 Initial conditions

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

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

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

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

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

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

Parameter	Unit	Cell 1		Ce	2
		T1	T2	T1	T2
Cell Frequency	ChNr		1		1
CPICH_Ec/lor	dB	-1	0	-1	0
PCCPCH_Ec/lor	dB	-1	2	-1	2
SCH_Ec/lor	dB	-1	2	-12	
PICH_Ec/lor	dB	-1	5	-15	
DCH_Ec/lor	dB	-17	-Infinity	Not applicable	
OCNS_Ec/lor	dB	-1.049	-0.941	-0.941	
\hat{I}_{or}/I_{oc}	dB	2,39	-Infinity	4,39	<u>0,02</u>
I _{oc}	dBm/ 3.84 MHz		-7	0	
CPICH_Ec/lo	dB	-15	-Infinity	-1	3
Propagation Condition			AWO	GN	

8.4.1.1.4.2 Procedure

1

- 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 2.0 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to 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 1920ms(Minimum requirement + 100ms), allow 2s in the test case.

8.4.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% 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.

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Summary of chang	յe: ೫	The Îc althou	or/loc v igh Ce	value is co II1 disapp	prrected pears dur	for T2. ing T2	. Now	the	Îor/loc rema	ins co	onstant	for	Cell2
Consequences if	ж	25.1	01 and	<mark> 34.121 a</mark>	are incon	sisten	t. T1	may	not be able t	to imp	olemen	t th	e test
not approved:		case are a requi	corre applied iremer	ctly when I. Furtherr It to fail th	also test nore, this le test ca	t tolera s may ise.	ances caus	e a t	sed by test e erminal fulfill	equipr ing th	nent u le core	nce	rtainties
Clauses affected:	ж	8.4.1	.1										

Other specs affected:	ж	Y	N X X X	Other core specifications # Test specifications O&M Specifications	
Other comments:	ж				

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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 <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.
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8.4 RRC Connection Control

8.4.1 RRC Re-establishment delay

8.4.1.1 Test 1

8.4.1.1.1 Definition and applicability

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

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

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

The phase reference is the primary CPICH.

The requirements of this test apply to the FDD UE.

8.4.1.1.2 Minimum requirement

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

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

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

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

where

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

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

N ₃₁₃ =	20
T ₃₁₃ =	0s
$T_{search} =$	100ms
$T_{RA} =$	The additional delay caused by the random access procedure. 40 ms is assumed in this test case.
T _{SI}	is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

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

8.4.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

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8.4.1.1.4 Method of test

8.4.1.1.4.1 Initial conditions

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

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

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

Table 8.4.1.1 Gen	eral test parameters	for RRC re-establis	nment delay, Test 1
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Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference	As specified in clause C.3.1 and C.2.1
		measurement channel	
		12.2 kbps	
Power Control		On	
Active cell, Initial		Cell 1	
condition			
Active cell, Final		Cell 2	
condition			
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall only include intra frequency
			neighbours.
Cell 2			Included in the monitored set
Reporting frequency	Seconds	4	
T1	S	10	
T2	S	6	

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

Parameter	Unit	Ce	1	Ce	2
		T1	T2	T1	T2
Cell Frequency	ChNr		1		1
CPICH_Ec/lor	dB	-1	0	-1	0
PCCPCH_Ec/lor	dB	-1	2	-1	2
SCH_Ec/lor	dB	-12		-1	2
PICH_Ec/lor	dB	-15		-15	
DCH_Ec/lor	dB	-17 -Infinity		Not applicable	
OCNS_Ec/lor	dB	-1.049	-0.941	-0.9	941
\hat{I}_{or}/I_{oc}	dB	2,39	-Infinity	4,39	<u>0,02</u>
I _{oc}	dBm/ 3.84 MHz	-70		0	
CPICH_Ec/lo	dB	-15 -Infinity -13		3	
Propagation Condition			AWO	GN	

8.4.1.1.4.2 Procedure

1

- 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 2.0 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
- 7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
- 8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to 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 1920ms(Minimum requirement + 100ms), allow 2s in the test case.

8.4.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% 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.

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CHANGE REQUEST									
ж	34.12	21 CR	<mark>270</mark> ៖	rev	-	ж	Current vers	sion: <mark>3.13.0</mark> [#]	£
For HELP on using this form, see bottom of this page or look at the pop-up text over the # symbols.									
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Reason for change:	In 25.215 section 5.1.9, SFN-SFN observed time difference type 1 is not applicable for CELL_DCH state. This already corrected in the core specification 25.133.
Summary of change:	testcase to be aligned with 25.133.
Consequences if	He test case would be incorrect.
not approved:	
Clauses affected:	発 8.7.5.1.4
Other specs affected:	Y N # Other core specifications # Test specifications # 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.

8.7.5 SFN-SFN observed time difference

8.7.5.1 SFN-SFN observed time difference type 1

8.7.5.1.1 Definition and applicability

This measurement is specified in clause 5.1.9 of TS 25.215 [22]. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.

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

8.7.5.1.2 Minimum requirements

The accuracy requirement in table 8.7.5.1.1 is valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114 \text{ dBm}.$

$$\left| CPICH _ RSCP1 \right|_{in \, dBm} - CPICH _ RSCP2 \right|_{in \, dBm} \le 20 dB$$

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

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

Table 8.7.5.1.1

Parameter	Unit	Accuracy [chip]	Conditions lo [dBm/3.84 MHz]
SFN-SFN observed time difference type1	chip	± 1	-9450

The normative reference for this requirement is TS 25.133 [2] clause 9.1.8.1.1 and A.9.1.5.1.2.

8.7.5.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-SFN observed time difference type 1 is within the limit specified in clause 8.7.5.1.2. This measurement is for identifying time difference between two cells.

8.7.5.1.4 Method of test

8.7.5.1.4.1 Initial conditions

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

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

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

- 1) Connect SS to the UE antenna connector as shown in figure A.1
- 2) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3.2. The RF parameters for Test 1 are set up according to table 8.7.5.1.2.

In this case all cells are in the same frequency. Table 8.7.5.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Deremeter	l Init	Test 1	Test 2	Test 3	
Farameter	Unit	Cell 1 Cell 2	Cell 1 Cell 2	Cell 1 Cell 2	
UTRA RF Channel number		Channel 1	Channel 1	Channel 1	
CPICH_Ec/lor	dB	-10	-10	-10	
PCCPCH_Ec/lor	dB	-12	-12	-12	
SCH_Ec/lor	dB	-12	-12	-12	
PICH_Ec/lor	dB	-15	-15	-15	
S-CCPCH_Ec/lorDPCH_Ec/lor	dB	-15 -12	-15 -12	-15 -12	
OCNS_Ec/lor	dB	-1.11 -1.29	-1.11 -1.29	-1.11<u>-1.29</u>	
Îor/loc	dB	10.5	10.5	10.5	
loc	dBm/ 3.84 MHz	lo -13.7 dB = loc, Note 1	<i>lo</i> –13.7 <i>dB</i> = <i>loc</i> , Note 1	lo -13.7 dB = loc, Note 1	
lo	dBm/3.84 MHz	-50	-72	-94	
Relative delay of path received from cell 2 with respect to cell 1	chip		x Note 2		
Propagation condition	-	AWGN	AWGN	AWGN	
NOTE 1: loc level shall be adju lor/loc.	sted according the tot	al signal power <i>lo</i> at	receiver input and the	e geometry factor	
NOTE2: For example, x= 4915	20 or 9830399				

Table 8.7.5.1.2: SFN-SFN observed time difference type 1 Intra frequency test 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.

8.7.5.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT message.
- 3) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual SFN-SFN observed time difference type 1 value for each MEASUREMENT REPORT message.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.2 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 8.7.5.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.2 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.

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# 34.121 CR 271 # rev # Current version: 4.0.0 For HELP on using this form, see bottom of this page or look at the pop-up text over the # s Proposed change affects: UICC apps# ME X Radio Access Network Core N Fitle: # CR to 34.121 Rel-4; Corretion to SFN-SFN observed time difference type 1 Source: # T1 Vork item code: # Date: # 16/06/2003 Category: # A If (corresponds to a correction in an earlier release) Release 1990 B (addition of feature), Rel to the hole of the following for the to hole of the following for the following for the following for the to hole of the following for the to hole of the following for the following	CHANGE REQUEST									
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Reason for change: ೫	In 25.215 section 5.1.9, SFN-SFN observed time difference type 1 is not applicable for CELL_DCH state. This already corrected in the core specification 25.133.
Summary of change: #	The CELL_DCH state have been removed from SFN-SFN observed time difference type 1 testcase to be aligned with 25.133.
Consequences if # not approved:	The test case would be incorrect.
Clauses affected: #	8.7.5.1.4
Other specs # affected:	Y N Other core specifications # Test specifications # O&M Specifications #

Other comments: 米

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8.7.5 SFN-SFN observed time difference

8.7.5.1 SFN-SFN observed time difference type 1

8.7.5.1.1 Definition and applicability

This measurement is specified in clause 5.1.9 of TS 25.215 [22]. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.

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

8.7.5.1.2 Minimum requirements

The accuracy requirement in table 8.7.5.1.1 is valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114 \text{ dBm}.$

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

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

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

Table 8.7.5.1.1

Parameter	Unit	Accuracy [chip]	Conditions lo [dBm/3.84 MHz]
SFN-SFN observed time difference type1	chip	± 1	-9450

The normative reference for this requirement is TS 25.133 [2] clause 9.1.8.1.1 and A.9.1.5.1.2.

8.7.5.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-SFN observed time difference type 1 is within the limit specified in clause 8.7.5.1.2. This measurement is for identifying time difference between two cells.

8.7.5.1.4 Method of test

8.7.5.1.4.1 Initial conditions

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

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

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

- 1) Connect SS to the UE antenna connector as shown in figure A.1
- 2) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3.2. The RF parameters for Test 1 are set up according to table 8.7.5.1.2.

In this case all cells are in the same frequency. Table 8.7.5.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Peremeter	Unit	Test 1	Test 2	Test 3	
Farameter	Unit	Cell 1 Cell 2	Cell 1 Cell 2	Cell 1 Cell 2	
UTRA RF Channel number		Channel 1	Channel 1	Channel 1	
CPICH_Ec/lor	dB	-10	-10	-10	
PCCPCH_Ec/lor	dB	-12	-12	-12	
SCH_Ec/lor	dB	-12	-12	-12	
PICH_Ec/lor	dB	-15	-15	-15	
S-CCPCH_Ec/lor DPCH_Ec/lor	dB	<u>-12<mark>-15</mark></u>	<u>-12<mark>-15</mark></u>	<u>-12<mark>-15</mark></u>	
OCNS_Ec/lor	dB	<u>-1.29<mark>-1.11</mark></u>	<u>-1.29</u> -1.11	<u>-1.29</u> -1.11	
Îor/loc	dB	10.5	10.5	10.5	
loc	dBm/ 3.84 MHz	Io -13.7 dB = Ioc,	lo - 13.7 dB = loc,	lo - 13.7 dB = loc,	
		Note 1	Note 1	Note 1	
lo	dBm/3.84 MHz	-50	-72	-94	
Relative delay of path received			x		
from cell 2 with respect to cell	chip		Note 2		
1					
Propagation condition	-	AWGN	AWGN	AWGN	
NOTE 1: loc level shall be adjust	sted according the tot	al signal power lo at	receiver input and the	e geometry factor	
Ïor/loc.					
NOTE2: For example, x= 4915	20 or 9830399				

	able 8.7.5.1.2: SFN-SFN	observed time difference type	1 Intra frequency	y test parameters
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Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.5.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT message.
- 3) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual SFN-SFN observed time difference type 1 value for each MEASUREMENT REPORT message.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.2 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 8.7.5.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.2 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.

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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.

8.7.5 SFN-SFN observed time difference

8.7.5.1 SFN-SFN observed time difference type 1

8.7.5.1.1 Definition and applicability

This measurement is specified in clause 5.1.9 of TS 25.215 [22]. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.

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

8.7.5.1.2 Minimum requirements

The accuracy requirement in table 8.7.5.1.1 is valid under the following conditions:

CPICH_RSCP1,2|_{dBm} \geq -114 dBm.

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

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

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

Table 8.7.5.1.1

Parameter	Unit	Accuracy [chip]	Conditions lo [dBm/3.84 MHz]
SFN-SFN observed time difference type1	chip	± 1	-9450

The normative reference for this requirement is TS 25.133 [2] clause 9.1.8.1.1 and A.9.1.5.1.2.

8.7.5.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-SFN observed time difference type 1 is within the limit specified in clause 8.7.5.1.2. This measurement is for identifying time difference between two cells.

8.7.5.1.4 Method of test

8.7.5.1.4.1 Initial conditions

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

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

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

- 1) Connect SS to the UE antenna connector as shown in figure A.1
- 2) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3.2. The RF parameters for Test 1 are set up according to table 8.7.5.1.2.

In this case all cells are in the same frequency. Table 8.7.5.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Peremeter	Unit	Test 1	Test 2	Test 3	
Farameter	Unit	Cell 1 Cell 2	Cell 1 Cell 2	Cell 1 Cell 2	
UTRA RF Channel number		Channel 1	Channel 1	Channel 1	
CPICH_Ec/lor	dB	-10	-10	-10	
PCCPCH_Ec/lor	dB	-12	-12	-12	
SCH_Ec/lor	dB	-12	-12	-12	
PICH_Ec/lor	dB	-15	-15	-15	
S-CCPCH_Ec/lor DPCH_Ec/lor	dB	<u>-12<mark>-15</mark></u>	<u>-15</u> <u>-12</u> -15		
OCNS_Ec/lor	dB	<u>-1.29<mark>-1.11</mark></u>	<u>-1.29</u> -1.11 <u>-1.29</u> -1.11		
Îor/loc	dB	10.5	10.5	10.5	
loc	dBm/ 3.84 MHz		lo - 13.7 dB = loc,	lo - 13.7 dB = loc,	
		Note 1	Note 1	Note 1	
lo	dBm/3.84 MHz	-50	-72	-94	
Relative delay of path received			x		
from cell 2 with respect to cell	chip	Note 2			
1					
Propagation condition	-	AWGN	AWGN	AWGN	
NOTE 1: loc level shall be adjust	sted according the tot	al signal power lo at	receiver input and the	e geometry factor	
Ïor/loc.					
NOTE2: For example, x= 491520 or 9830399					

	able 8.7.5.1.2: SFN-SFN	observed time difference type	1 Intra frequency	y test 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.

8.7.5.1.4.2 Procedure

- 1) SS shall transmit MEASUREMENT CONTROL message.
- 2) UE shall transmit periodically MEASUREMENT REPORT message.
- 3) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual SFN-SFN observed time difference type 1 value for each MEASUREMENT REPORT message.
- 4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.2 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 8.7.5.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.5.1.2 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.

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Reason for change: ೫	The CRC bits for the reference measurement channel using RLC-TM for DTCH transport channel parameters are incorrect based on "A.4 DL reference measurement channel for BTFD performance requirements)" in 25.101 sections A.4.				
Summary of change: ℜ	The size of CRC was changed to 12 bits.				
Consequences if #	The test case would be incorrect.				
not approved:					
Clauses affected: #	C.4.2				
Other specs ೫ affected:	Y N Other core specifications # Test specifications # O&M Specifications #				

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Other comments:

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C.4.2 DL reference measurement channel for BTFD performance requirements

The parameters for DL reference measurement channel for BTFD are specified in table C.4.2.1, table C.4.2.2, table C.4.2.3 and table C.4.2.4. The channel coding for information is shown in figures C.4.1, C.4.2, and C.4.3. For the RLC configuration of AM DCCHs Timer_STATUS_Periodic shall not be set in RRC CONNECTION SETUP message used in test procedure for RF test as defined in TS34.108 clause 7.3. This is to prevent unexpected DCHs from being transmitted through such RLC entities when the timer has expired in order to sure that the required TFC from the minimum set of TFCs can continuously convey a DCH for DTCH during the test.

Parameter	Rate 1	Unit		
Information bit rate	12,2	kbps		
DPCH		ksps		
Slot Format #i		8		-
TFCI		Off		-
Power offsets PO1, PO2 and PO3		0		dB
DTX position		Fixed		-

Table C.4.2.2: DL	reference measurement	channel, transport	channel parameters	s for SRB
		, .	•	

Higher	RA	B/Signalling RB	SRB		
RLC	Logical ch	annel type	DCCH		
	RLC mode	9	UM/AM		
	Payload s	izes, bit	88/80		
	Max data	rate, bps	2200/2000		
	PDU head	ler, bit	8/16		
	TrD PDU	header, bit	N/A		
MAC	MAC head	der, bit	4		
	MAC mult	iplexing	Yes		
Layer 1	ayer 1 TrCH type Transport Channel Identity		DCH		
			20		
	TB sizes,	bit	100		
	TFS	TF0, bits	0*100		
		TF1, bits	1*100		
	TTI, ms		40		
	Coding typ	be	Convolution Coding		
	Coding Ra	ate	1/3		
	CRC, bit		12		
	Max numb	per of bits/TTI after	360		
	channel co	oding			
	Uplink: Ma frame befo	ax number of bits/radio	90		
	RM attribu	ite	256		

Table C.4.2.3: DL reference measurement channel using RLC-TM for DTCH, transport channel parameters

Higher Layer	RAB/Signalling RB	12.2k/10.2k/7.95k/7.4k/6.7k/5.9k/5.15k/4.75k/1.95k
RLC	Logical channel type	DTCH
	RLC mode	ТМ
	Payload sizes, bit	244, 204, 159, 148, 134, 118, 103, 95, 39
	Max data rate, bps	12200

-									
	PDU hea	der, bit	N/A						
	TrD PDU	header,	0						
	bit								
MAC	MAC header, bit		0						
	MAC mu	Itiplexing	N/A						
Layer 1	TrCH typ	е	DCH						
	Transpor	t Channel	1						
	Identity								
	TB sizes,	, bit	244, 204, 159, 148, 134, 118, 103, 95, 39,0						
	TFS	TF0 bit	1x0						
		TF1 bit	1x244						
	TF2 bit TF3 bit TF4 bit TF5 bit		1x204						
			1x159						
			1x148						
			1x134						
		TF6 bit	1x118						
		TF7 bit	1x103						
		TF8 bit	1x95						
		TF9 bit	1x39						
	TTI, ms		20						
	Coding ty	/pe	CC						
	Coding R	late	1/3						
	CRC, bit		<u>012</u>						
	RM attrib	ute	256						

27

CHANGE REQUEST												
ж	34.121	CR 274	жrev	-	ж	Current vers	^{iion:} <mark>3.13.(</mark>) ^ж				
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Reason for change: ೫	The Test requirements do not allow for the effects of test system uncertainties									
Summary of change: ೫	a) Introduction of table 8.3.5.1.5 giving correct RF condtions for test									
	b) Revision of table 8.3.5.2.5 giving correct RF conditions for test									
	c) Revision of Annex F.1.5 to define acceptable test system uncertainties									
	d) Revision of Annex F.2.4 to define Test Tolerances									
	e) Revision of Annex F.4 table 4.4 to refer to derivation of test requirements									
Consequences if %	A Test system may incorrectly fail a good UE.									
not approved:	, , , , ,									
Clauses affected: #	8.3.5 and Annex F									
	YN									
Other specs %	✓ Other core specifications									
affected:	Test specifications									
	✓ O&M Specifications									
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8.3.5 Cell Re-selection in CELL_FACH

8.3.5.1 One frequency present in neighbour list

8.3.5.1.1 Definition and applicability

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

The requirements and this test apply to the FDD UE.

8.3.5.1.2 Minimum requirements

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

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

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

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

where

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

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

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

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

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

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

8.3.5.1.3 Test purpose

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

8.3.5.1.4 Method of test

8.3.5.1.4.1 Initial conditions

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

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

The test parameters are given in table 8.3.5.1.1 to 8.3.5.1.54. 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	frea, in neighbour list
	onumor paramotoro		noq. In norginoour not

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

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

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

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

Parameter	Unit	Cell 1 Cell 2		Ce	Cell 3 Cell 4			Ce	ell 5	Cell 6				
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	
UTRA RF Channel	TRA RF Channel		Channel 1		Channel 1		Channel 1		Channel 1		Ob an and A		Channel 1	
Number		Channel I		Channel 1		Channel I		Channel I		Channel I		Channel I		
CPICH_Ec/lor	dB	-^	10	-	10	-	10	-*	10	-	·10	-1	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	-1	15	-	15	-	15	- '	15	-	·15	-15		
S-CCPCH_Ec/lor	dB	-1	2	-1	12	- '	12	-1	2	-	12	-1	2	
OCNS_Ec/lor	dB	-1.2	295	-1.2	295	-1.	295	-1.2	295	-1.	.295	-1.2	295	
\hat{I}_{or}/I_{oc}	dB	7.3	10.27	10.27	7.3	0.	27	0.	27	0	.27	0.2	27	
$\hat{I}_{or(Note 1)}$	<u>dBm</u>	<u>-62.73</u>	<u>-59.73</u>	<u>-59.73</u>	<u>-62.73</u>	<u>-69</u>).7 <u>3</u>	<u>-69</u>). <u>73</u>	<u>-6</u>	<u>9.73</u>	<u>-69</u>	. <u>73</u>	
I _{oc}	dBm/3.84 MHz					-70								
CPICH_Ec/lo	dB	-16	-13 -13 -16		-	23	-23		-23		-2	23		
Propagation Condition		AWGN												
Cell_selection_and_ reselection_quality_ measure		CPICH	CPICH E _c /N ₀ CPICH E _c /N ₀		CP Ec	ICH /N₀	CPICH E _c /N ₀		CPICH E _c /N ₀		CPI E₀/	CH ′N₀		
Qqualmin	dB	-2	20	-2	20	-:	20	0 -20		-20		-2	20	
Qrxlevmin	dBm	-1	15	-1	15	-1	-115 -115		-115		-1	15		
UE_TXPWR_ MAX_RACH	dBm	2	1	2	21	2	21	21		21		2	1	
		C1, C2: 0		C2, C1: 0		C3, C1: 0		C4, C1: 0		C5, C1: 0		C6, 0	C1: 0	
		C1, C3: 0		C2, C3: 0		C3, C2: 0		C4, C2: 0		C5, C2: 0		C6, C2: 0		
Qoffset 2 _{s, n}	dB	C1, 0	C4: 0	C2, 0	C4: 0	C3,	C3, C4: 0		C4, C3: 0		C5, C3: 0		C6, C3: 0	
		C1, 0	C5: 0	C2, (C5: 0	C3,	C5: 0	C4, 0	C5: 0	C5, C4: 0		C6, 0	24: 0	
		C1, 0	C6: 0	C2, 0	C6: 0	C3,	C6: 0	C4, 0	C6: 0	C5, C6: 0		C6, 0	25: 0	
Qhyst	dB	()	0		0		0			0	0)	
Treselection	S	()	0		0		0		0		0)	
Sintrasearch	asearch dB not sent not sent		not	sent	not	sent	not	sent	not s	sent				
IE "FACH Measurement occasion info"		not	sent	not	sent	not sent		not sent		not sent		not sent		

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

8.3.5.1.4.2 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 the CELL_FACH state on Cell 2 and the SS waits for this process to complete.
- 4) After 15 seconds from completion of step_3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.1.4<u>5</u>.
- 5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.
- 6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

- 7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.1.4<u>5</u>.
- 8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then a success is recorded and the procedure moves to step 10.
- 9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until 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 the cell re-selection delay shall be less than 1.7 s.(Minimum requirement + 100ms).

8.3.5.1.5 Test requirements

i

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 8.3.5.1.5: Cell specific test requirements for Cell Re-selection in CELL_FACH, one freq. in neighbour list													
Parameter	<u>Unit</u>	<u>Ce</u>	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		<u>II 6</u>
		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel</u> <u>Number</u>		<u>Char</u>	Channel 1		Channel 1		Channel 1		<u>nel 1</u>	Channel 1		Channel 1	
CPICH_Ec/lor	<u>dB</u>	-9.4 -9.4				-1	0. <u>5</u>	-10.5		-1	0. <u>5</u>	-10.5	
PCCPCH_Ec/lor	<u>dB</u>	-11.4 -11.4			-1	2. <u>5</u>	-12.5		<u>-1</u> :	2. <u>5</u>	<u>-12.5</u>		
SCH_Ec/lor	<u>dB</u>	-11	1.4	-11.4		-1	2. <u>5</u>	<u>-12.5</u>		-12.5		<u>-12.5</u>	
PICH_Ec/lor	<u>dB</u>	<u>-14</u>	<u>4.4</u>	<u>-1</u> 4	<u>4.4</u>	-1	<u>5.5</u>	<u>-15.5</u>		<u>-15.5</u>		<u>-15.5</u>	
S-CCPCH_Ec/lor	<u>dB</u>	<u>-1</u>	1.4	<u>-1</u>	<u>1.4</u>	-1	<u>-12.5</u> <u>-12.5</u>		<u>2.5</u>	<u>-12.5</u>		<u>-12.5</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-1</u> .	52	<u>-1</u> .	. <u>52</u>	-1	<u>-1.13</u> <u>-1.13</u>		<u>-1.13</u>		<u>-1.13</u>		
\hat{I}_{or}/I_{oc} Note 1	<u>dB</u>	<u>7.0</u>	<u>10.4</u>	<u>10.4</u>	<u>10.4</u> <u>7.0</u>		<u>0.3</u>		3	0.3		0.3	
\hat{I}_{or}	<u>dBm</u>	<u>-63.0</u>	<u>-59.6</u>	<u>-59.6</u>	<u>-63.0</u>	<u>-6</u>	<u>9.7</u>	<u>-69.7</u>		<u>-69.7</u>		<u>-69.7</u>	
I _{oc}	<u>dBm/3.84</u> <u>MHz</u>		<u>70</u>										
CPICH_Ec/lo Note 1	<u>dB</u>	<u>-15.7</u>	<u>-12.3</u>	<u>-12.3</u>	<u>-15.7</u>	-2	<u>3.5</u>	-23	3. <u>5</u>	-2	<u>3.5</u>	-23	<u>3.5</u>

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

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

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

8.3.5.2 Two frequencies present in the neighbour list

8.3.5.2.1 Definition and applicability

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

The requirements and this test apply to the FDD UE.

8.3.5.2.2 Minimum requirements

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

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

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

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

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 8.3.5.2.54. 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 Sei – Persisten	rvice Class (ASC#0) ice 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 9 2 5 2 2 Db	voicel chennel neremet	are for S CCDCU And	frage in neighbour list
Table 0.3.3.2.2. Ph	ysical channel paramete	ers for 3-00700, two	o freqs. In heighbour 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	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		Chann		Chann		Chapr		Chann		Chapr		Chann		
Number		Channel I		Channel 2		Channel I		Chann		Chanr	iei z	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			
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	-1.8	2.2	2.2	-1.8	-6.8	-4.8	-6.8	-4.8	-4.8	-6.8	-4.8	-6.8	
Îor (Note 1)	<u>dBm</u>	<u>-</u> 71.85	<u>-</u> 67.75	<u>-</u> <u>67.75</u>	<u>-</u> <u>71.85</u>	<u>-</u> 76.85	<u>-</u> 74.75	<u>-</u> <u>76.85</u>	<u>-</u> 74.75	<u>-</u> 74.75	<u>-</u> <u>76.85</u>	<u>-</u> 74.75	<u>-</u> <u>76.85</u>	
I _{oc}	dBm/3.8 4 MHz						-7	70						
CPICH Ec/lo	dB	-15	-13	-13	-15	-:	20		20	-	20	-:	20	
Propagation		A14/ON							-	1	-	1		
Condition		AWGN	N											
Cell_selection_														
and_reselection_		CPICH	I E _c /N ₀	CPICH	I E _c /N ₀	CPICH	Η E _c /N ₀	CPICH	I E _c /N ₀	CPICH	Η E _c /N ₀	CPICH	Η E _c /N ₀	
quality_measure														
Qqualmin	dB	-20		-20		-20 -20		-20		-20				
Qrxlevmin	dBm	-115		-115	-115		-115		-115		-115		-115	
UE_TXPWR_ MAX_RACH	dBm	21		21		21		21		21		21		
		C1, C2	2: 0	C2, C1	1:0	C3, C ²	1:0	C4, C1	1:0	C5, C ²	1:0	C6, C ²	1:0	
		C1, C3	3: 0	C2, C3	3: 0	C3, C2	2:0	C4, C2	2:0	C5, C2	2:0	C6, C2	2: 0	
Qoffset2 _{s, n}	dB	C1, C4	4: 0	C2, C4	4: 0	C3, C4	4: 0	C4, C3	3: 0	C5, C3	3: 0	C6, C3	3: 0	
		C1, C5	5: 0	C2, C5	5: 0	C3, C	5:0	C4, C5	5: 0	C5, C4	4: 0	C6, C4	4: 0	
		C1, C6	5: 0	C2, C6	5: 0	C3, C6	3: 0	C4, C6	5: 0	C5, C6	5:0	C6, C	5: 0	
Qhyst2	dB	0		0		0 0		0		0				
Ireselection	S	0		0		0		0		0		0		
Sintrasearch	dB	not se	nt	not sent		not sent		not sent		not sent		not sent		
Sintersearch	aв	not se	nt	not sent		not sent		not sent		not sent		not sent		
		aant		t		0.0mt		t		Cont		aant		
Measurement		sent		sent		sent		sent		Sent		sent		
	-													
Measurement														
		3		3		3		3		3		3		
length coefficient														
Inter-frequency														
FDD measurement		TRUE		TRUE		TRUE		TRUE		TRUE		TRUE		
indicator														
Inter-frequency														
TDD measurement		FALSE	Ξ	FALSE	Ξ	FALSE	Ξ	FALSE	Ξ	FALS	Ξ	FALSE	Ξ	
indicator	1													

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

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

8.3.5.2.4.2 Procedure

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

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

10) Steps 4 to 10 are repeated until 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 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.

Parameter	Unit	Ce	ll 1	Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2										
UTRA RF Channel Number		Chann	iel 1	Chann	nel 2	Chann	iel 1	Chann	el 1	Chann	el 2	Chann	el 2
CPICH_Ec/lor	<u>dB</u>	-9).4	-9).4	-1	0.7	-1(<u>).7</u>	-1(<u>).7</u>	-10).7
PCCPCH_Ec/lor	<u>dB</u>	<u>-1</u>	<u>1.4</u>	<u>-1</u>	<u>1.4</u>	<u>-1</u> :	<u>2.7</u>	<u>-12</u>	<u>2.7</u>	<u>-12</u>	<u>2.7</u>	-12	2.7
<u>SCH_Ec/lor</u>	<u>dB</u>	<u>-1</u>	<u>1.4</u>	<u>-1</u>	<u>1.4</u>	<u>-1</u> :	<u>2.7</u>	-12	<u>2.7</u>	<u>-1:</u>	<u>2.7</u>	-12	2.7
PICH_Ec/lor	<u>dB</u>	<u>-1</u> -	<u>4.4</u>	<u>-1</u> -	<u>4.4</u>	<u>-1</u>	<u>5.7</u>	<u>-1</u> :	<u>5.7</u>	<u>-1</u> :	<u>5.7</u>	<u>-15</u>	5.7
S-CCPCH_Ec/lor	<u>dB</u>	-1	1. <u>4</u>	-1	<u>1.4</u>	<u>-1</u> :	2.7	-12	2. <u>7</u>	-12	2. <u>7</u>	-12	2.7
OCNS_Ec/lor	<u>dB</u>	<u>-1</u> .	. <u>52</u>	<u>-1</u>	. <u>52</u>	<u>-1</u> .	.08	<u>-1</u> .	.08	<u>-1</u> .	<u>.08</u>	-1.	<u>08</u>
\hat{I}_{or}/I_{oc} <u>Note 1</u>	<u>dB</u>	<u>-1.80</u>	<u>+4.64</u>	<u>+4.64</u>	<u>-1.80</u>	<u>-6.80</u>	<u>-3.16</u>	<u>-6.80</u>	<u>-3.16</u>	<u>-3.16</u>	<u>-6.80</u>	<u>-3.16</u>	<u>-6.80</u>
<u>Î</u> or	<u>dBm</u>	<u>-71.8</u>	<u>-67.0</u>	<u>-67.0</u>	<u>-71.8</u>	<u>-76.8</u>	<u>-74.8</u>	<u>-76.8</u>	<u>-74.8</u>	<u>-74.8</u>	<u>-76.8</u>	<u>-74.8</u>	<u>-76.8</u>
loc	<u>dBm/3.8</u> 4 MHz	<u>-70.0</u>	<u>-71.6</u>	<u>-71.6</u>	<u>-70.0</u>	<u>-70.0</u>	<u>-71.6</u>	<u>-70.0</u>	<u>-71.6</u>	<u>-71.6</u>	<u>-70.0</u>	<u>-71.6</u>	<u>-70.0</u>
CPICH_Ec/lo Note	<u>dB</u>	<u>-14.4</u>	<u>-11.6</u>	<u>-11.6</u>	<u>-14.4</u>	<u>-20.7</u>							

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

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

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

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

Annex F (normative): General test conditions and declarations

The requirements of this clause apply to all applicable tests in the present document.

Many of the tests in the present document measure a parameter relative to a value that is not fully specified in the UE specifications. For these tests, the Minimum Requirement is determined relative to a nominal value specified by the manufacturer.

When specified in a test, the manufacturer shall declare the nominal value of a parameter, or whether an option is supported.

In all the relevant clauses in this clause all Bit Error Ratio (BER), Block Error Ratio (BLER), False transmit format Detection Ratio (FDR) measurements shall be carried out according to the general rules for statistical testing in clause F.6.

F.1 Acceptable uncertainty of Test System

The maximum acceptable uncertainty of the Test System is specified below for each test, where appropriate. The Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, and the equipment under test to be measured with an uncertainty not exceeding the specified values. All ranges and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95 % is the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment.

For RF tests it should be noted that the uncertainties in clause F.1 apply to the Test System operating into a nominal 50 ohm load and do not include system effects due to mismatch between the DUT and the Test System.

F.1.5 Requirements for support of RRM

Clause Maximum Test System Uncertainty Derivation of Test System Uncertainty 8.3.5 Cell Re-selection in CELL_FACH Same as 8.2.2.1 During T1 and T2: 8.3.5.1 One frequency present in the Same as 8.2.2.1 neighbour list $\frac{CPICH_E_c}{\pm 0.1 \text{ dB}}$ I_{or} I_{oc} _____1.0 dB During T1: I_{or} (2) ±0.7 dB I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB During T2: I_{or} (1) ±0.7 dB I_{ar} (2, 3, 4, 5, 6) relative to I_{ar} (1) ±0.3 dB Assumptions: a) The contributing uncertainties for lor(n), channel power ratio, and loc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for lor(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for lor(n) across different cells may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). d) Across different cells, the channel power ratio uncertainties may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). e) The uncertainty for loc and lor(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of lor(2) at T1 and the relative uncertainty of lor(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of lor(1) at T2 and the relative uncertainty of lor(2, 3, 4, 5, 6), are uncorrelated to each other. An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is to be recorded in a TR [FFS].

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test System Uncertainty	Derivation of Test System
8.3.5.2 Two frequencies present in the	Same as 8.2.2.2 Channel 1 during T1 and	Same as 8.2.2.2
neighbour list	<u>T2:</u>	
	$CPICH _E_c$	
	$\frac{1}{I_{\text{max}}} = \frac{1}{2} \frac{\pm 0.1 \text{ dB}}{2}$	
	I_{oc} (1) ±1.0 dB	
	Channel 1 during T1:	
	$I_{\rm ar}(1) \pm 0.7 \mathrm{dB}$	
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
	Channel 1 during T2:	
	$I_{or}(1) \pm 0.7 \text{ dB}$	
	I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB	
	Channel 2 during T1 and T2:	
	$\frac{CPICH _E_c}{1 \text{ dB}}$	
	I or	
	<u>I_{oc} (2) ±1.0 dB</u>	
	Channel 2 during T1:	
	I _{or} (2) ±0.7 dB	
	$\underline{I_{or}}(5, 6) \text{ relative to } \underline{I_{or}}(2) \pm 0.3 \text{ dB}$	
	Channel 2 during T2:	
	I_{or} (2) ±0.7 dB	
	$\frac{I_{or} (5, 6) \text{ relative to } I_{or} (2) \pm 0.3 \text{ dB}}{$	
	Assumptions: a) to e): Same as for the one-frequency	test 8 3 5 1
	f) The absolute uncertainty of lor(1) and	the relative uncertainty of
	lor(3, 4), are uncorrelated to each other.	Similarly, the absolute
	uncertainty of lor(2) and the relative unc uncorrelated to each other.	ertainty of lor(5, 6), are
	g) The absolute uncertainties for lor(1) a	nd lor(2) may have any
	amount of positive correlation from zero correlated).	(uncorrelated) to one (fully
	h) The absolute uncertainties for loc(1) a	and loc(2) may have any
	amount of positive correlation from zero correlated).	(uncorrelated) to one (fully
	An explanation of correlation between u	ncertainties, and of the
	rationale behind the assumptions, is to b	be recorded in a TR [FFS].

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.4 Requirements for support of RRM

Clause	Test Tolerance
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the neighbour list	$\frac{0.3 \text{ dB for}}{\hat{I}_{or}} / I_{oc}$ During T1 and T2:
	<u>+0.460-</u> dB for <u>all Cell 1 and 2</u>
	CPICH_Ec/lor ratios
	<u>-0.50 dB for all Cell 3, 4, 5, 6 Ec/lor ratios</u> +0.03 dB for lor(3, 4, 5, 6)
	During T1:
	-0.27 dB for lor(1)
	+0.13 dB for lor(2)
	During T2:
	$\pm 0.13 \text{ dB for lor(1)}$
3.3.5.2 Two frequencies present in the	$\frac{0.3 \text{ dB for } \hat{I}_{or} / I_{oc}}{1 \text{ dB for } \hat{I}_{or} / I_{oc}}$
	and T2:
	+0.4 <u>60</u> dB for all Cell 1 CPICH_Ec/Ior
	ratios
	Channel 1 during T1:
	$\pm 0.05 \text{ dB for lor(1)}$ $\pm 0.05 \text{ dB for lor(3, 4)}$
	No change for loc(1)
	Channel 1 during T2:
	$\pm 0.75 \text{ dB for lor(1)}$
	-0.05 dB for lor(3, 4)
	<u>-1.60 dB for loc(1)</u>
	Channel 2 during T1 and T2:
	+0.60 dB for all Cell 2 Ec/lor ratios
	-0.70 dB for all Cell 5 and 6 Ec/lor ratios
	Channel 2 during T1:
	+0.75 dB for lor(2)
	-1.60 dB for loc(2)
	+0.05 dB for lor(2)
	+0.05 dB for lor(5, 6)
	No change for loc(2)

Table F.2.4: Test Tolerances for Radio Resource Management Tests

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	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121			
8.3.5 Cell Re-selection						
8.3.5.1 One frequency	Because the relationships be	tween the Test system	uncertainties and the Test Tolerances			
neighbour list	document. The analysis was performed using a spreadsheet, to be recorded in a					
	During T1 and T2:	During T1 and T2:	During T1 and T2:			
	Cells 1 and 2:					
	$\frac{\text{CPICH}_\text{Ec/lor} = -10 \text{ dB}}{\text{PCCPCH}_\text{Ec/lor} = -12 \text{ dB}}$	<u>+0.60 dB</u>	$\frac{\text{Ec/lor ratio + TT}}{\text{Ec/lor ratio + TT}}$			
	$\frac{\text{SCH} \text{Ec/lor} = -12 \text{ dB}}{\text{SCH} \text{Ec/lor} = -12 \text{ dB}}$	+0.60 dB	Ec/lor ratio + TT			
	$\frac{PICH_EC/Ior = -15 \text{ dB}}{S-CCPCH_EC/Ior = -12 \text{ dB}}$	+0.60 dB +0.60 dB	$\frac{Ec/lor ratio + TT}{Ec/lor ratio + TT}$			
	<u>Cells 3, 4, 5, 6:</u>					
	$\frac{\text{CPICH}_\text{EC/IOI} = -10 \text{ dB}}{\text{PCCPCH}_\text{EC/IOI} = -12 \text{ dB}}$	-0.50 dB	$\frac{Ec/lor ratio + TT}{Ec/lor ratio + TT}$			
	$\frac{SCH_EC/Ior = -12 \text{ dB}}{PICH_EC/Ior = -15 \text{ dB}}$	-0.50 dB -0.50 dB	Ec/lor ratio + TT			
	$\underline{\text{S-CCPCH}}_{\text{Ec/lor}} = -12 \text{ dB}$	<u>-0.50 dB</u>	Ec/lor ratio + TT			
	$\frac{\text{lor}(3, 4, 5, 6) = -69.73 \text{ dBm}}{\text{CPICH} _ E_c} = -10 \text{ dB}$	<u>+0.03 dB for lor(3,</u> <u>4, 5, 6)</u>	<u>lor(3, 4, 5, 6) + TT</u> Formulas:			
	I _{or}	$\frac{0.1 \text{ dB for}}{CPICH _E_c}$	<u>CPICH E_c</u> = ratio - TT			
	- I_{oc}-=-70 dBm	I _{or} 0.3 dB for lor/loc	I_{or} lor/loc = ratio - TT			
	lor/loc = 7.3 dB					
	Note: Parameters are valid		-I _{oc} -unchanged			
	2 at time T2		lor/loc = 7 dB			
			<u>CPICH_E_c -10.1 dB:</u>			
			I _{or}			
	During T1:	During T1:	During T1:			
	lor(1) = -62.73 dBm lor(2) = -59.73 dBm	<u>-0.27 dB for lor(1)</u> +0.13 dB for lor(2)	$\frac{\text{lor}(1) + \text{TT}}{\text{lor}(2) + \text{TT}}$			
	$\underline{CPICH}_E_c = -10 \text{ dB}$	0.1 dB for	Formulas:			
	I _{or}	$\frac{CPICH_{E_c}}{I_{or}}$	<u>CPICH $_E_c$ = ratio + TT</u>			
	- <u>I_{oc}-=-70 dBm</u>	0.3 dB for lor/loc	I_{or} lor/loc = ratio + TT			
	lor/loc = 10.27 dB					
	Note: Parameters are valid for cell 1 at time T2 and cell		loc unchanged			
	2 at time T1		IOF/IOC = 10.57 dB			
			$\frac{CPICH_E_c\9.9 \text{ dB:}}{I_{or}}$			
	During T2:	During T2:	During T2:			
	$\frac{\text{lor}(1) = -59.73 \text{ dBm}}{\text{lor}(2) = -62.73 \text{ dBm}}$	+0.13 dB for lor(1) -0.27 dB for lor(2)	$\frac{\text{lor}(1) + TT}{\text{lor}(2) + TT}$			

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121
8 3 5 2 Two	IS 25.133 Recause the relationships be	(II)	upcortaintios and the Test Telerances
frequencies present in	are complex it is not possible	to give a simple deriva	ation of the Test Requirement in this
the neighbour list	document. The analysis was	performed using a spre	adsheet, to be recorded in a TR [FFS].
	Channel 1 during T1 and	Channel 1 during	Chappel 1 during T1 and T2:
	<u>T2:</u>	T1 and T2:	
	Cell 1:		
	$\underline{CPICH}\underline{Ec/Ior} = -10 dB$	<u>+0.60 dB</u>	Ec/lor ratio + TT
	$\frac{PCCPCH_Ec/lor = -12 \text{ dB}}{SCH_Ec/lor = -12 \text{ dB}}$	<u>+0.60 dB</u>	$\frac{\text{Ec/lor ratio} + \text{TT}}{\text{Ec/lor ratio} + \text{TT}}$
	$\frac{3011}{2010} = -12 \text{ dB}$	+0.60 dB	Ec/lor ratio + TT
	S-CCPCH_Ec/lor = -12 dB	<u>+0.60 dB</u>	Ec/lor ratio + TT
	$\frac{\text{Cells 3 and 4:}}{\text{CPICH Ec/lor} = -10 \text{ dB}}$	<u>-0.70 dB</u> -0.70 dB	$\frac{\text{Ec/lor ratio} + TT}{\text{Ec/lor ratio} + TT}$
	$SCH_Ec/lor = -12 dB$	-0.70 dB	Ec/lor ratio + TT
	<u>PICH_Ec/lor = -15 dB</u>	<u>-0.70 dB</u>	Ec/lor ratio + TT
	$\frac{\text{S-CCPCH} \text{ Ec/lor} = -12 \text{ dB}}{\text{CPLCH} \text{ E}}$	<u>-0.70 dB</u>	Ec/lor ratio + TT
	$\frac{CPICH _ E_c}{I} = -10 \text{ dB}$	$CPICH _E_c$	- omulas.
	or	I _{or}	$\underline{-CPICH _E_c} = ratio - TT$
	$I_{oc} = -70 \text{ dBm}$	0.3 dB for lor/loc	I_{or} lor/loc = ratio - TT
	lor/loc = -3.4 dB		loc unchanged
	Note: Parameters are valid for cell 1 at time T1 and cell		loc ratio unchanged
	z at time i z		lor/loc = -3.7 dB
			$\frac{CPICH_E_c}{I_{or}} \sim 10.1 \text{ dB};$
	Channel 1 during T1:	Channel 1 during	Chappel 1 during T1:
	Onamer Faamig TT.	<u>T1:</u>	
	lor(1) = -71.85 dBm lor(3, 4) = -76.85 dBm	<u>+0.05 dB for lor(1)</u> +0.05 dB for lor(3.4)	$\frac{\text{lor}(1) + TT}{\text{lor}(3, 4) + TT}$
	$\frac{\text{loc}(1) = -70.00 \text{ dBm}}{\text{CPICIL}}$	0.00 dB for loc(1)	loc(1) + TT
	$\frac{CPICH - E_c}{I} = -10 \text{ dB}$	$CPICH _E_c$	Formulas:
	or	I _{or}	$\underline{CPICH _ E_c} = ratio + TT$
	- <i>I_{oc}</i>	0.3 dB for lor/loc	I_{or} lor/loc = ratio + TT
	lor/loc = 2.2 dB		loc unchanged
	Note: Parameters are valid for cell 1 at time T2 and cell		loc ratio unchanged
	2 at time T1		lor/loc = 2.5 dB
			$\frac{CPICH _E_c}{L} - 9.9 \text{ dB};$
			L _{or}
	Channel 1 during T2:	Channel 1 during T2:	Channel 1 during T2:
	lor(1) = -67.75 dBm lor(3, 4) = -74.75 dBm	+0.75 dB for lor(1) -0.05 dB for lor(3, 4)	$\frac{\text{lor}(1) + \text{TT}}{\text{lor}(3, 4) + \text{TT}}$
	loc(1) = -70.00 dBm	<u>-1.60 dB for loc(1)</u>	$\frac{1}{10c(1) + TT}$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:	Channel 2 during T1 and T2:
	<u>Cell 2:</u> <u>CPICH_Ec/lor = -10 dB</u> <u>PCCPCH_Ec/lor = -12 dB</u> <u>SCH_Ec/lor = -12 dB</u> <u>PICH_Ec/lor = -15 dB</u> <u>S-CCPCH_Ec/lor = -12 dB</u>	+0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB	$\frac{\text{Ec/lor ratio} + TT}{\text{Ec/lor ratio} + TT}$ $\frac{\text{Ec/lor ratio} + TT}{\text{Ec/lor ratio} + TT}$ $\frac{\text{Ec/lor ratio} + TT}{\text{Ec/lor ratio} + TT}$
	Cells 5 and 6: CPICH Ec/lor = -10 dB PCCPCH Ec/lor = -12 dB SCH Ec/lor = -12 dB PICH Ec/lor = -15 dB S-CCPCH Ec/lor = -12 dB	-0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	$\frac{\text{Ec/lor ratio + TT}}{\text{Ec/lor ratio + TT}}$ $\frac{\text{Ec/lor ratio + TT}}{\text{Ec/lor ratio + TT}}$ $\frac{\text{Ec/lor ratio + TT}}{\text{Ec/lor ratio + TT}}$
	<u>Channel 2 during T1:</u> <u>lor(2) = -67.75 dBm</u> <u>lor(5, 6) = -74.75 dBm</u> <u>loc(2) = -70.00 dBm</u>	Channel 2 during <u>T1:</u> +0.75 dB for lor(2) -0.05 dB for lor(5, 6) -1.60 dB for loc(2)	<u>Channel 2 during T1:</u> <u>lor(2) + TT</u> <u>lor(5, 6) + TT</u> <u>loc(2) + TT</u>
	<u>Channel 2 during T2:</u> <u>lor(2) = -71.85 dBm</u> <u>lor(5, 6) = -76.85 dBm</u> <u>loc(2) = -70.00 dBm</u>	Channel 2 during T2: +0.05 dB for lor(2) +0.05 dB for lor(5,6) 0.00 dB for loc(2)	$\frac{\text{Channel 2 during T2:}}{\text{lor}(2) + TT}$ $\frac{\text{lor}(5, 6) + TT}{\text{loc}(2) + TT}$

CHANGE REQUEST									CR-Form-v7	
ж		<mark>34.121</mark>	CR	275	жrev	-	ж	Current versi	^{on:} 4.0.() ^ж
For <u>HELP</u> or	n us	ing this for	m, see	e bottom of this	s page or le	ook a	at the	e pop-up text	over the ¥ s	ymbols.
Proposed chang	je ai	ffects: l	JICC a	apps#	ME X	Rac	lio A	ccess Networ	k Core	Network
Title:	ж	CR to 34.	121 R	el-4; Corretion	to Inter-sy	sten	n Ha	ndover from L	JTRAN FDD	to GSM
Source:	ж	T1								
Work item code:	ж							<i>Date:</i> ೫	16/06/2003	3
Category:	۲ ۲ ۲	A Use <u>one</u> of <i>i</i> F (co. A (co release B (ad C (fu D (ed D tailed exp be found in	the follo rrespon dition c nctional ritorial r blanatic	owing categories) nds to a correction of feature), I modification of modification) ons of the above <u>TR 21.900</u> .	s: on in an ear feature) categories	<i>lier</i> can		Release: # Use <u>one</u> of a 2 R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	Rel-4 the following r (GSM Phase (Release 199 (Release 199 (Release 199 (Release 4) (Release 5) (Release 6)	eleases: 2) 6) 7) 8) 9)

Reason for change: ೫	Corrected errors in the Inter-system Handover from UTRAN FDD t GSM test case
Summary of change: ℜ	In section 8.3.4.4.2, procedure 7, the event was changed to refer to 3C instead of 2C. In the MEASUREMENT CONTROL message the Measurement Command was changed to setup. The Inter-RAT reporting quantity should be present.
Consequences if # not approved:	The test case would be incorrect.
Clauses affected: #	8.3.4

Other specs affected:	ж	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 http://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

8.3.4 Inter-system Handover from UTRAN FDD to GSM

8.3.4.1 Definition and applicability

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

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

8.3.4.2 Minimum requirement

The hard handover delay shall be less than 40 ms. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The hard handover delay as listed in table 8.3.4.1 equals the RRC procedure delay plus the interruption time listed in table 8.3.4.2. The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms.

Table 8.3.4.1: FDD/GSM handover - handover delay

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

Table 8.3.4.2: FDD/GSM handover - interruption time

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

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

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

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

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

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

The test parameters are given in table 8.3.4.3, 8.3.4.4 and 8.3.4.5 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a HANDOVER FROM UTRAN COMMAND in advance to T3 with activation time "now". In GSM Handover command contained in that message, IE starting time shall not be included. The RRC HANDOVER FROM UTRAN COMMAND 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].

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

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

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

Parameter	Unit	Cell 1 (UTRA)				
		T1, T2, T3				
CPICH_Ec/lor	dB	-10				
PCCPCH_Ec/lor	dB	-12				
SCH_Ec/lor	dB	-12				
PICH_Ec/lor	dB	-15				
DCH_Ec/lor	dB	Note 1				
OCNS_Ec/lor	dB	Note 2				
\hat{I}_{or}/I_{oc}	dB	0				
I _{oc}	dBm/3. 84 MHz	-70				
CPICH_Ec/lo	dB	-13				
Propagation						
Condition		AWGN				
Note 1: The DPCH level is controlled by the power control loop						
Note 2 : The power of the OCNS channel that is added shall make						
the total power from the cell to be equal to $I_{\rm or}$						

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

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

Baramotor	Unit	Cell	2 (GSM)		
Farailleter	Unit	T1	T2, T3		
Absolute RF Channel Number		ARFCN 1			
RXLEV	dBm	-85	-75		

8.3.4.4.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1.
- 2) The UE is switched on
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel
- 5) SS shall transmit a MEASUREMENT CONTROL message to cell 1
- 6) After 20 seconds, the SS shall switch the power settings from T1 to T2
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event $\frac{2C_{3C}}{2C_{3C}}$
- SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time "now" and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell.
- 9) After 5 seconds, the SS shall switch the power settings from T2 to T3
- 10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3, then the number of successful tests is increased by one.
- [Editor's note: TS 34.108, 7.3.4 shall specify the messages HANDOVER ACCESS, PHYSICAL INFORMATION, SABM, UA and HANDOVER COMPLETE]
- 11) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 12) Repeat step 1-11 [TBD] times

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Specific Message Contents

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

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	4 <u>2</u>
-Measurement Command (10.3.7.46)	ModifySetup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE Measurement type	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
 Measurement quantity for UTRAN quality estimate 	
(10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within
	virtual active set or of the other RAT
-Maximum number of reported cells	2
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	1
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within
	virtual active set or of the other RAT
-Maximum number of reported cells	2
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Activation time	"now"
RB information elements	
-RAB information list	1
-RAB Info	Not present
Other information elements	
-CHOICE System type	GSM
-Frequency Band	GSM/DCS 1800 Band
-GSM message	
-Single GSM message	[TBD]
-GSM message List	GSM HANDOVER COMMAND formatted
	as BIT STRING(1512). The contents of
	table.

HANDOVER COMMAND

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

MEASUREMENT REPORT message for Inter-RAT test cases

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

8.3.4.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% 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.

Rel-4

Rel-5

Rel-6

(Release 4)

(Release 5)

(Release 6)

CHANGE REQUEST									
ж		<mark>34.121</mark> C	CR <mark>276</mark>	жrev	-	Ħ	Current vers	^{ion:} 5.0.0	ж
For <u>HELP</u>	on us	ing this form,	, see bottom of this	s page or	look	at th	e pop-up text	over the sy	mbols.
Proposed change affects: UICC apps% MEX Radio Access Network Core Network									
Title:	Ж	CR to 34.12	1 Rel-5; Corretion	to Inter-s	yster	n Ha	ndover from l	JTRAN FDD to	o GSM
Source:	ж	T1							
Work item cod	е: Ж						Date: ℜ	16/06/2003	
Category:	¥	A Use <u>one</u> of the F (corre A (corre release) B (addit C (funct	e following categories ction) esponds to a corrective tion of feature), tional modification of	s: on in an ea feature)	arlier		Release: % Use <u>one</u> of 2 R96 R97 R98 R99	Rel-5 the following rel (GSM Phase 2, (Release 1996, (Release 1998, (Release 1998, (Release 1998)	eases:))))

Reason for change: ೫	Corrected errors in the Inter-system Handover from UTRAN FDD t GSM test case			
Summary of change: 策	In section 8.3.4.4.2, procedure 7, the event was changed to refer to 3C instead of 2C. In the MEASUREMENT CONTROL message the Measurement Command was changed to setup. The Inter-RAT reporting quantity should be present.			
Consequences if #	The test case would be incorrect.			
not approved:				
Clauses affected: #	8.3.4			
	YN			
Other specs % affected:	Other core specifications # Test specifications # O&M Specifications •			

D (editorial modification)

be found in 3GPP TR 21.900.

Detailed explanations of the above categories can

How to create CRs using this form:

Other comments:

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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.
- 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 http://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

8.3.4 Inter-system Handover from UTRAN FDD to GSM

8.3.4.1 Definition and applicability

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

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

8.3.4.2 Minimum requirement

The hard handover delay shall be less than 40 ms. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The hard handover delay as listed in table 8.3.4.1 equals the RRC procedure delay plus the interruption time listed in table 8.3.4.2. The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms.

Table 8.3.4.1: FDD/GSM handover - handover delay

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

Table 8.3.4.2: FDD/GSM handover - interruption time

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

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

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

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

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

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

The test parameters are given in table 8.3.4.3, 8.3.4.4 and 8.3.4.5 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a HANDOVER FROM UTRAN COMMAND in advance to T3 with activation time "now". In GSM Handover command contained in that message, IE starting time shall not be included. The RRC HANDOVER FROM UTRAN COMMAND 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].

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

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 34.121 clause C.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode patterns			Only applicable for UE requiring compressed mode patterns
- GSM carrier RSSI measurement		DL Compressed mode reference pattern 2 in Set 2	As specified in TS 34.121 [1] clause C.5, table C.5.2
- GSM Initial BSIC identification		Pattern 2	As specified in clause TS 25.133 [2] 8.1.2.5.2.1 table 8.7.
- GSM BSIC re- confirmation		Pattern 2	As specified in clause TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
Active cell		Cell 1	
Inter-RAT		GSM Carrier RSSI	
measurement quantity			
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for event 3B and 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the compressed mode patterns starts.
N Identify abort		66	Taken from TS 25.133 [2] 8.1.2.5.2.1 table 8.7.
T Reconfirm abort		5.5	Taken from TS 25.133 [2] 8.1.2.5.2.2 table 8.8.
T1	S	20	
T2	S	5	
Т3	s	5	

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

Parameter	Unit	Cell 1 (UTRA)	
		T1, T2, T3	
CPICH_Ec/lor	dB	-10	
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
DCH_Ec/lor	dB	Note 1	
OCNS_Ec/lor	dB	Note 2	
\hat{I}_{or}/I_{oc}	dB	0	
I _{oc} dBm/3. 84 MHz		-70	
CPICH_Ec/lo	dB	-13	
Propagation	Propagation		
Condition			
Note 1: The DPCH level is controlled by the power control loop			
Note 2 : The power of the OCNS channel that is added shall make			
the total power from the cell to be equal to $I_{\rm or}$.			

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

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

Parameter	Unit	Cell 2 (GSM)	
Falailletei	Onic	T1	T2, T3
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-85	-75

8.3.4.4.2 Procedure

- 1) The RF parameters for cell 1 are set up according to T1.
- 2) The UE is switched on
- 3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
- 4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel
- 5) SS shall transmit a MEASUREMENT CONTROL message to cell 1
- 6) After 20 seconds, the SS shall switch the power settings from T1 to T2
- 7) UE shall transmit a MEASUREMENT REPORT message triggered by event $\frac{2C_{3C}}{2C_{3C}}$
- SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time "now" and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell.
- 9) After 5 seconds, the SS shall switch the power settings from T2 to T3
- 10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3, then the number of successful tests is increased by one.
- [Editor's note: TS 34.108, 7.3.4 shall specify the messages HANDOVER ACCESS, PHYSICAL INFORMATION, SABM, UA and HANDOVER COMPLETE]
- 11) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
- 12)Repeat step 1-11 [TBD] times

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Specific Message Contents

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

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	Value/Remark	
Message Type (10.2.17)		
UE information elements		
-RRC transaction identifier	0	
-Integrity check info	Not Present	
Measurement Information elements		
-Measurement Identity	4 <u>2</u>	
-Measurement Command (10.3.7.46)	ModifySetup	
-Measurement Reporting Mode (10.3.7.49)		
-Measurement Report Transfer Mode	AM RLC	
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger	
-Additional measurements list (10.3.7.1)	Not Present	
-CHOICE Measurement type	Inter-RAT measurement	
-Inter-RAT measurement (10.3.7.27)		
-Inter-RAT measurement objects list (10.3.7.23)	Not Present	
-Inter-RAT measurement quantity (10.3.7.29)		
 Measurement quantity for UTRAN quality estimate 		
(10.3.7.38)		
-Filter coefficient	0	
-CHOICE mode	FDD	
-Measurement quantity	CPICH Ec/N0	
-CHOICE system	GSM	
-Measurement quantity	GSM Carrier RSSI	
-Filter coefficient	0	
-BSIC verification required	Required	
-Inter-RAT reporting quantity (10.3.7.32)	Not Present	
-Reporting cell status (10.3.7.61)		
-CHOICE reported cell	Report cells within active set or within	
	virtual active set or of the other RAI	
-Maximum number of reported cells	2	
-CHOICE report criteria	Inter-RAT measurement reporting criteria	
-Inter-RAT measurement reporting criteria (10.3.7.30)		
-Parameters required for each event	1	
-Inter-RAT event identity (10.3.7.24)	Event 3C	
- I hreshold own system	Not Present	
-VV	Not Present	
- I nresnold other system	-80 dBm	
-Hysteresis	0 dB	
- I lime to trigger	0 ms	
-Reporting cell status (10.3.7.61)	Depart calls within active act or within	
	Report cells within active set or within	
Maximum number of reported calls		
-waximum number of reported cells	۷	
Physical channel information elements	Net Dresset	
-DPCH compressed mode status into (10.3.6.34)	Not Present	

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Activation time	"now"
RB information elements	
-RAB information list	1
-RAB Info	Not present
Other information elements	
-CHOICE System type	GSM
-Frequency Band	GSM/DCS 1800 Band
-GSM message	
-Single GSM message	[TBD]
-GSM message List	GSM HANDOVER COMMAND formatted
	as BIT STRING(1512). The contents of
	table.

HANDOVER COMMAND

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

MEASUREMENT REPORT message for Inter-RAT test cases

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

8.3.4.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% 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.

		CR-Form-v			
CHANGE REQUEST					
ж	34.121 CR 277 #rev -	# Current version: 3.13.0 #			
For <u>HELP</u> on	using this form, see bottom of this page or look a	at the pop-up text over the X symbols.			
Proposed chang	e affects: UICC apps೫ ME Ⅹ Rad	io Access Network Core Network			
Title:	CR to 34.121 R99; Correction to CPICH Ec/lo AWGN propagation condition test case	o in correct reporting of neighbours in			
Source:	₩ T1				
Nork item code:	Ħ	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 	Release: R99 Use <u>one</u> of the following releases: 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)			

Reason for change: ೫	There is no margin taken into account for this testcase for period T2.			
The CPICH Ec/lo in Cell 1 period T2 is set to -13 dB and the CPICH 2 was set to -15 dB. The reporting range is 4 dB. This meets the m accuracy requirement of 2 dB however no margin is given which co UE's to fail if on the border since uncertainly have not been taken in Therefore the CPICH Ec/lo in Cell 2 period T2 is changed to -14.5 margin of 0.5 dB. Typically other testcases take into account a 0.5 of This was changed in the core specification 25.133. This change rec align with core specification				
Summary of change: # Changed the CPICH Ec/lo parameter to increase by a factor of 0.5 dB to inclu- the margin in Cell 2 for time period T2.				
Consequences if # not approved:	The test case would be incorrect.			
Clauses affected: #	8.6.2			
Other specs ж affected:	Y N Other core specifications # Test specifications # O&M Specifications #			

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Other comments:

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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.

8.6.2 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

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

A cell shall be considered detectable when CPICH $Ec/Io \ge -20$ dB, SCH_ $Ec/Io \ge -17$ dB for at least one channel tap and SCH_Ec/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

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

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_{Frea}: 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	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		-70	
CPICH_Ec/lo	dB	-13	-Inf	-Inf
Propagation Condition			AWGN	

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables 8.6.2.1.2 and 8.6.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

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 threshold		0	Applicable for event 1A
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	Cell 1		Ce	ll 2	Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/lor	dB	-10		-10		-10	
PCCPCH_Ec/lor	dB	-12		-12		-12	
SCH_Ec/lor	dB	-12		-12		-12	
PICH_Ec/lor	dB	-15		-15		-15	
DPCH_Ec/lor	dB	-17		N/A		N/A	
OCNS		-1.049		-0.941		-0.941	
\hat{I}_{or}/I_{oc}	dB	0	<u>5.42</u> 4 .3 9	-Infinity	<u>3.92</u> 2.3 9	-1.8	-1.8
I _{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/lo	dB	-13	-13	-Infinity	<u>-14.5</u> - 15	-14	-14
Propagation Condition	AWGN						

[CP Form v7	
CHANGE REQUEST									
ж	34.121	CR 278	жrev	-	ж	Current vers	^{ion:} 4.0.0	ж	
For <u>HELP</u> on	using this for	rm, see bottom of thi	is page or	look a	at the	e pop-up text	over the X sy	mbols.	
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Title:	₩ CR to 34. AWGN p	121 Rel-4; Correctic ropagation condition	n to CPIC test case	H Ec/	/lo in	correct repo	rting of neighb	ours in	
Source:	ដ <mark>T1</mark>								
Work item code:	ж					<i>Date:</i> ೫	16/06/2003		
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Reason for change: ೫	There is no margin taken into account for this testcase for period T2.				
	The CPICH Ec/lo in Cell 1 period T2 is set to -13 dB and the CPICH Ec/lo in Cell 2 was set to -15 dB. The reporting range is 4 dB. This meets the measurement accuracy requirement of 2 dB however no margin is given which could cause UE's to fail if on the border since uncertainly have not been taken into account. Therefore the CPICH Ec/lo in Cell 2 period T2 is changed to -14.5 dB giving a margin of 0.5 dB. Typically other testcases take into account a 0.5 dB margin. This was changed in the core specification 25.133. This change request is to align with core specification				
Summary of change: Ж	Changed the CPICH Ec/lo parameter to increase by a factor of 0.5 dB to include the margin in Cell 2 for time period T2.				
Consequences if % not approved:	The test case would be incorrect.				
Clauses affected: #	8.6.2				
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affected:	Other core specifications ж Test specifications 0&M Specifications				

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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.

8.6.2 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

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

A cell shall be considered detectable when CPICH $Ec/Io \ge -20$ dB, SCH_ $Ec/Io \ge -17$ dB for at least one channel tap and SCH_Ec/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

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

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_{Frea}: 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	Cell3	
		Т0	Т0	Т0
CPICH_Ec/lor	dB	-10	-10	-10
PCCPCH_Ec/lor	dB	-12	-12	-12
SCH_Ec/lor	dB	-12	-12	-12
PICH_Ec/lor	dB	-15	-15	-15
DPCH_Ec/lor	dB	-17	N/A	N/A
OCNS_Ec/lor	dB	-1.049	-0.941	-0.941
\hat{I}_{or}/I_{oc}	dB	0	-Inf	-Inf
I _{oc}	dBm/3 .84 MHz		-70	
CPICH_Ec/lo	dB	-13	-Inf	-Inf
Propagation Condition			AWGN	

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables 8.6.2.1.2 and 8.6.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

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

Table 8.6.2.1.2: 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	Cell 1		Ce	ll 2	Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/lor	dB	-10		-10		-10	
PCCPCH_Ec/lor	dB	-12		-12		-12	
SCH_Ec/lor	dB	-12		-12	-12		
PICH_Ec/lor	dB	-15		-15		-15	
DPCH_Ec/lor	dB	-17		N/A		N/A	
OCNS		-1.049		-0.941		-0.941	
\hat{I}_{or}/I_{oc}	dB	0	<u>5.42</u> 4 .3 ອ	-Infinity	<u>3.92</u> 2.3 ਉ	-1.8	-1.8
I _{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/lo	dB	-13	-13	-Infinity	<u>-14.5</u> - 15	-14	-14
Propagation Condition	AWGN						

		CHANGE	EREQ	UE	ST			CR-Form-v
ж	<mark>34.121</mark>	CR 279	жrev	-	₩ Cu	rrent versi	on: 5.0.	^ж 0
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the # symbols.								
Proposed change	e affects:	UICC apps೫	ME X	Radi	io Acces	ss Networl	k Core	Network
Title:	CR to 34 AWGN p	121 Rel-5; Correctic ropagation condition	n to CPICI test case	H Ec/	lo in cor	rect repor	ting of neigh	bours in
Source:	¥ <mark>T1</mark>							
Work item code:	ж					Date: ೫	16/06/2003	3
Category:	₭ A Use one of F (co A (co release B (ac C (fu D (co Detailed ex be found in	the following categorie prrection) prresponds to a correct e) ddition of feature), nctional modification o ditorial modification) planations of the above 3GPP TR 21 900	es: tion in an ea f feature) e categories	<i>rlier</i> s can	Re L	elease: % Jse <u>one</u> of t 2 R96 R97 R98 R98 R99 Rel-4 Rel-5 Rel-6	Rel-5 the following I (GSM Phase (Release 199 (Release 199 (Release 199 (Release 4) (Release 5) (Release 6)	releases: 2) 6) 7) 8) 9)

Reason for change: ೫	There is no margin taken into account for this testcase for period T2.				
	The CPICH Ec/lo in Cell 1 period T2 is set to -13 dB and the CPICH Ec/lo in Cell 2 was set to -15 dB. The reporting range is 4 dB. This meets the measurement accuracy requirement of 2 dB however no margin is given which could cause UE's to fail if on the border since uncertainly have not been taken into account. Therefore the CPICH Ec/lo in Cell 2 period T2 is changed to -14.5 dB giving a margin of 0.5 dB. Typically other testcases take into account a 0.5 dB margin. This was changed in the core specification 25.133. This change request is to align with core specification				
Summary of change: ℜ	Changed the CPICH Ec/lo parameter to increase by a factor of 0.5 dB to include the margin in Cell 2 for time period T2.				
Consequences if % not approved:	The test case would be incorrect.				
Clauses affected: %	8.6.2				
	ΥΝ				
Other specs # affected:	Other core specifications # Test specifications # O&M Specifications #				

How to create CRs using this form:

ж

Other comments:
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.

8.6.2 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

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

A cell shall be considered detectable when CPICH $Ec/Io \ge -20$ dB, SCH_ $Ec/Io \ge -17$ dB for at least one channel tap and SCH_Ec/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

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

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.

 $T_{\text{basic_measurement_FDD inter}} = 50 \text{ ms.}$ This is the time period used in the equation for defining the measurement period for inter frequency CPICH measurements.

N_{Frea}: 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	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	-70				
CPICH_Ec/lo	dB	-13	-Inf	-Inf		
Propagation Condition	AWGN					

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables 8.6.2.1.2 and 8.6.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

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

Table 8.6.2.1.2: 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	Cell 1 Cell 2		Cell 3			
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Ch	annel 1	Char	nel 1	Cha	nnel 2
CPICH_Ec/lor	dB	-10		-10		-10	
PCCPCH_Ec/lor	dB	-12		-12		-12	
SCH_Ec/lor	dB	-12		-12		-12	
PICH_Ec/lor	dB	-15		-15		-15	
DPCH_Ec/lor	dB	-17		N/A		N/A	
OCNS		-1.049		-0.941		-0.941	
\hat{I}_{or}/I_{oc}	dB	0	<u>5.42</u> 4 .3 ອ	-Infinity	<u>3.92</u> 2.3 9	-1.8	-1.8
I _{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/lo	dB	-13	-13	-Infinity	<u>-14.5</u> - 15	-14	-14
Propagation Condition	AWGN						

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July – 01 August 2003

CHANGE REQUEST													
¥		<mark>34.121</mark>	CR	280	жre	ev	-	ж	Curren	t vers	ion:	<mark>3.13.</mark>	0 ^ж
For <u>HELP</u> 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:	ж	Test Req	uireme	ents for RRM (CPICH	I Ec/I	<mark>o Int</mark>	ra Fr	equenc	y Mea	asure	ement	
Source:	ж	T1											
Work item code:	æ								Dai	te: Ж	14/	07/2003	
Category:	¥	F Use <u>one</u> of F (con A (cor B (ado C (fun D (edi Detailed exp be found in	the follo rection) respon dition or ctional torial m olanatic 3GPP	owing categorie ds to a correction f feature), modification of odification) ons of the above <u>TR 21.900</u> .	es: on in a feature e cateç	n earl e) gories	<i>ier re</i> can	lease	Releas Use <u>o</u> 2 9) R9 R9 R9 R9 R9 R9 R9 R9 R9 R9 R9 R9 R9 R	8e: 米 n <u>e</u> of 7 8 9 1-4 1-5 1-6	R9 (GSN (Rele (Rele (Rele (Rele (Rele (Rele	9 Illowing re A Phase 2 pase 1996 pase 1997 pase 1998 pase 1999 pase 4) pase 5) pase 6)	eleases: ?) ?) ?) ?) ?)
Reason for change: # Test Requirements are missing.													

Reason for change: a	i rest Requirements are missing.
Summary of change: #	Test Requirements are included
Consequences if #	Test could fail "good UEs" because Test Requirements differ from the Minimum
not approved:	Requirements
Clauses affected: #	8.7.2.1
	YN
Other specs #	Contractions %
affected:	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.

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

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

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.

Table 8.7.2.1.1.2: CPICH Ec/lo Intra frequency parameters

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		Chan	inel 1	Channel 1		Chan	nel 1
CPICH_Ec/lor	dB	-1	0	-1	0	-1	0
PCCPCH_Ec/lor	dB	-1	2	-12		-12	
SCH_Ec/lor	dB	-1	2	-12		-12	
PICH_Ec/lor	dB	-15		-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	-56.98		-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
lo, Note 1	dBm/3.84 MHz	-5	50	-86		-94	
Propagation condition	-	AW	'GN	AWGN		AW	GN
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They							
are not settable parameters themselves.							

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

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) <u>A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.1.5.</u>

<u>+2</u>)SS shall transmit MEASUREMENT CONTROL message.

- 23) UE shall transmit periodically MEASUREMENT REPORT messages.
- 34) 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.

45) 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 8.7.2.1.1.25 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 34) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.25 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 34) above is repeated.

56) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

67) 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	$-0.5 \le \text{CPICH Ec/lo} < 0$	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 CONT	ROL message f	or Intra frequenc	v measurement (Step) 1)):
	I to E moodugo i	or maa noquono	y mououromone,	Corop	, i	<i>.</i>

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.

			Accuracy [dB]		Conditions
	Parameter Unit		Normal condition	Extreme condition	lo [dBm/3.84 MHz]
 	CPICH_Ec/lo	dB	$\begin{array}{c} -\underline{3.12.71.91.5} & \text{for } -14 \leq \text{CPICH} \\ & \text{Ec/lo} \\ -3.\underline{26}2\underline{.4} & \text{for } -16 \leq \text{CPICH Ec/lo} < - \\ & 14 \\ -4.\underline{26}3\underline{.4} & \text{for } -20 \leq \text{CPICH Ec/lo} < - \\ & 16 \end{array}$	-4. <mark>26</mark> 3 <u>.4</u>	-9487
			\pm 1. <u>9</u> 5 for -14 \leq CPICH Ec/lo \pm 2. <u>4</u> for -16 \leq CPICH Ec/lo < -14 \pm 3. <u>4</u> for -20 \leq CPICH Ec/lo < -16	± 3 <u>.4</u>	-8750

Table 8.7.2.1.1.4: CPICH	_Ec/lo Intra frequenc	y absolute accuracy,	, test requirements
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The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.1.1.5: CPICH_Ec/lo Intra frequency tests parameters

Peremeter	Unit	Tes	<u>st 1</u>	Test 2		Test 3			
Farameter	<u>onit</u>	Cell 1	Cell 2	Cell 1	Cell 2	<u>Cell 1</u>	Cell 2		
UTRA RF Channel number		Channel 1		<u>Char</u>	<u>nel 1</u>	Channel 1			
CPICH_Ec/lor	<u>dB</u>	-9	.7	-9	<u>.8</u>	-9	<u>.9</u>		
PCCPCH_Ec/lor	<u>dB</u>	-1	2	-1	2	-1	2		
SCH_Ec/lor	<u>dB</u>	-1	2	-1	2	-12			
PICH_Ec/lor	<u>dB</u>	<u>-1</u>	<u>-15</u> <u>-15</u>		-15		<u>5</u>		
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	-	<u>-15</u>	_	<u>-6</u>	-		
OCNS_Ec/lor	<u>dB</u>	<u>-1.15</u>	<u>-0.98</u>	<u>-1.13</u>	<u>-0.97</u>	<u>2.57</u>	<u>-0.95</u>		
loc	<u>dBm/ 3.84 MHz</u>	<u>-58</u>	<u>3.5</u>	<u>-89</u>	.07	<u>-93.98</u>			
<u>Îor/loc</u>	<u>dB</u>	<u>3.3</u>	<u>3.3</u>	<u>-2.6</u>	<u>-2.6</u>	<u>-8.7</u>	<u>-8.7</u>		
CPICH Ec/lo, Note 1	<u>dBm</u>	<u>-13.6</u>	<u>-13.6</u>	<u>-15.6</u>	<u>-15.6</u>	<u>-19.6</u>	<u>-19.6</u>		
lo, Note 1	<u>dBm</u>	<u>-5</u>	1. <u>3</u>	-85	. <u>85</u>	<u>-92</u>	<u>2.9</u>		
Propagation condition	<u>-</u>	AWGN AWGN		<u>AW</u>	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 seconds so that UE does not loose the Cell 2 in between the tests.

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

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

$$- \frac{|CPICH _RSCP1|_{in \ dBm} - CPICH _RSCP2|_{in \ dBm}| \le 20 dB}{\left. \left. \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in \ dB}} - \left(\frac{CPICH _E_c}{I_{or}} \right) \right|_{in \ dB} \le 20 dB.$$

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]
	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 9.1.2.1.2 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) 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 8.7.2.1.1.3.
- <u>+2</u>)SS shall transmit MEASUREMENT CONTROL message.
- 23) UE shall transmit periodically MEASUREMENT REPORT messages.
- 34) 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.

45) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

56) 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 8.7.2.1.1.23 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 34) and 45) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.23 for Test 3. While RF parameters are set up according to table 8.7.2.1.1.24 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.24 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 34) and 45) above are repeated.
- 67) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

78) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

1

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 <u>clause table</u> 8.7.2.1.2.2.

Table 8.7.2.1.2.2: CPICH Ec/lo Intra frequency relative accuracy

Paramotor	Unit	Accuracy [dB]	Conditions	
<u>Farameter</u> <u>Unit</u>		Normal condition	Extreme condition	lo [dBm]
	<u>dB</u>	<u>+2.3 for -14 ≤ CPICH Ec/Io</u>		<u>-9450</u>
CPICH_Ec/lo		± 2.8 for $-16 \leq CPICH Ec/lo < -14$	<u>±3.8</u>	
		± 3.8 for $-20 \leq CPICH Ec/lo < -16$		

Table 8.7.2.1.2.3: CPICH Ec/lo Intra frequency tests parameters

Peremeter	l Init	Tes	<u>st 1</u>	Test 2		Test 3		
Farameter	<u>onit</u>	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Char	<u>nel 1</u>	Char	nel 1	Channel 1		
CPICH_Ec/lor	<u>dB</u>	-9). <u>7</u>	-9.8		-9) <u>.9</u>	
PCCPCH_Ec/lor	<u>dB</u>	-1	2		2	-1	2	
SCH_Ec/lor	<u>dB</u>	-1	2	-	-12		2	
PICH_Ec/lor	<u>dB</u>	-1	<u>-15</u> <u>-15</u>		-15		15	
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	_	<u>-15</u>	-	<u>-6</u>		
OCNS_Ec/lor	<u>dB</u>	<u>-1.15</u>	<u>-0.98</u>	<u>-1.13</u>	<u>-0.97</u>	<u>2.57</u>	<u>-0.95</u>	
loc	<u>dBm/ 3.84 MHz</u>	<u>-5</u>	<u>8.5</u>	-89	.07	<u>-93.98</u>		
<u>Îor/loc</u>	<u>dB</u>	<u>3.3</u>	<u>3.3</u>	<u>-2.6</u>	<u>-2.6</u>	<u>-8.7</u>	<u>-8.7</u>	
CPICH Ec/lo, Note 1	<u>dBm</u>	<u>-13.6</u>	<u>-13.6</u>	<u>-15.6</u>	<u>-15.6</u>	<u>-19.6</u>	<u>-19.6</u>	
lo, Note 1	<u>dBm</u>	<u>-5</u>	1 <u>,3</u>	-85	.85	-93	<u>2.9</u>	
Propagation condition	-	AW	'GN	AW	'GN	AW	'GN	
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They								
are not settable parameters themselves.								
Tests shall be done sequentially.	Test 1 shall be done	first. After	test 1 has	been exec	cuted test p	parameters	s for tests	
2 and 3 shall be set within 5 seconds so that LIE does not loose the Coll 2 in between the tests								

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

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July – 01 August 2003

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	-	X O&M Specifications						
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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.

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

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

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.

Table 8.7.2.1.1.2: CPICH Ec/lo Intra frequency parameters

Parameter	Unit	Tes	st 1	Test 2		Test 3		
Farameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Chan	nel 1	Chan	nel 1	Chan	nel 1	
CPICH_Ec/lor	dB	-1	0	-1	0	-1	0	
PCCPCH_Ec/lor	dB	-1	2	-1	2	-12		
SCH_Ec/lor	dB	-1	2	-1	2	-1	2	
PICH_Ec/lor	dB	-15 -15		-15 -15		-1	5	
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	.98	-89	-89.07 -94.98		.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	
lo, Note 1	dBm/3.84 MHz	-5	50	-86		-94		
Propagation condition	-	AW	GN	AWGN		AW	GN	
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They								
are not settable parameters themselves.								

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

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) <u>A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.1.5.</u>

<u>+2</u>)SS shall transmit MEASUREMENT CONTROL message.

- 23) UE shall transmit periodically MEASUREMENT REPORT messages.
- 34) 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.

45) 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 8.7.2.1.1.25 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 34) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.25 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 34) above is repeated.

56) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

67) 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	$-0.5 \leq \text{CPICH Ec/lo} < 0$	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 frequer	ncy measurement (Ste	p 1):

Information Element	Value/Remark			
Message Type				
LIE information elements				
DE Information elements	0			
Integrity shock info	U Not Present			
-Integrity check into				
Measurement Identity	1			
Monouroment Command	I Modify			
Monsurement Reporting Mode	Acknowledged mede PLC			
Moosurement Report Transfer Mode	Acknowledged mode RLC			
- Deriodical Reporting / Event Trigger Reporting	r enouical reporting			
	Not Procont			
-Additional moasurement list	Intra-froquency measurement			
	Intra-frequency measurement			
-onoice measurement				
- Intra-frequency measurement objects list	Not Procont			
-Intra-frequency measurement quantity	Not resent			
-Filter coefficient	0			
-Intra-frequency reporting quantity				
-Reporting quantities for active set cells				
-SEN-SEN 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.

			Accuracy [dB]	Conditions	
	Parameter	Unit	Normal condition	Extreme condition	lo [dBm/3.84 MHz]
 	CPICH_Ec/lo	dB	$\begin{array}{c} -\underline{3.12.71.91.5} \\ Ec/lo \\ -3.\underline{26}2\underline{.4} \text{ for } -16 \leq \text{CPICH Ec/lo} < -\\ 14 \\ -4.\underline{26}3\underline{.4} \text{ for } -20 \leq \text{CPICH Ec/lo} < -\\ 16 \end{array}$	-4. <u>26</u> 3 <u>.4</u>	-9487
			\pm 1.95 for -14 \leq CPICH Ec/lo \pm 2.4 for -16 \leq CPICH Ec/lo < -14 \pm 3.4 for -20 \leq CPICH Ec/lo < -16	± 3 <u>.4</u>	-8750

Table 8.7.2.1.1.4: CPICH	_Ec/lo Intra frequenc	y absolute accuracy,	, test requirements
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The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.1.1.5: CPICH_Ec/lo Intra frequency tests parameters

Peremeter	Unit	Tes	<u>st 1</u>	Tes	<u>st 2</u>	Test 3	
Parameter	<u>onit</u>	Cell 1	Cell 2	Cell 1	Cell 2	<u>Cell 1</u>	Cell 2
UTRA RF Channel number		<u>Char</u>	<u>inel 1</u>	<u>Char</u>	<u>nel 1</u>	Channel 1	
CPICH_Ec/lor	<u>dB</u>	-9	.7	-9	<u>.8</u>	-9	<u>.9</u>
PCCPCH_Ec/lor	<u>dB</u>	-1	2	-1	2	-1	2
SCH_Ec/lor	<u>dB</u>	-1	2	-12		-1	2
PICH_Ec/lor	<u>dB</u>	-15		<u>-15</u>		-15	
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	-	<u>-15</u>	_	<u>-6</u>	-
OCNS_Ec/lor	<u>dB</u>	<u>-1.15</u>	<u>-0.98</u>	<u>-1.13</u>	<u>-0.97</u>	<u>2.57</u>	<u>-0.95</u>
loc	<u>dBm/ 3.84 MHz</u>	<u>-58.5</u> <u>-89.07</u>		<u>-89.07</u>		<u>-93</u>	<u>.98</u>
<u>Îor/loc</u>	<u>dB</u>	<u>3.3</u>	<u>3.3</u>	<u>-2.6</u>	<u>-2.6</u>	<u>-8.7</u>	<u>-8.7</u>
CPICH Ec/lo, Note 1	<u>dBm</u>	<u>-13.6</u>	<u>-13.6</u>	<u>-15.6</u>	<u>-15.6</u>	<u>-19.6</u>	<u>-19.6</u>
lo, Note 1	<u>dBm</u>	<u>-5</u>	1. <u>3</u>	-85	. <u>85</u>	<u>-92</u>	<u>2.9</u>
Propagation condition	<u>- AWGN AWGN AWGN</u>			GN			
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They							
are not settable parameters themselves.							
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests							

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

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

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

$$- \frac{|CPICH _RSCP1|_{in \ dBm} - CPICH _RSCP2|_{in \ dBm}| \le 20 dB}{\left. \left. \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in \ dB}} - \left(\frac{CPICH _E_c}{I_{or}} \right) \right|_{in \ dB} \le 20 dB.$$

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]
	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 9.1.2.1.2 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) 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 8.7.2.1.1.3.
- <u>+2</u>)SS shall transmit MEASUREMENT CONTROL message.
- 23) UE shall transmit periodically MEASUREMENT REPORT messages.
- 34) 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.

45) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

56) 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 8.7.2.1.1.23 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 34) and 45) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.23 for Test 3. While RF parameters are set up according to table 8.7.2.1.1.23 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.23 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 34) and 45) above are repeated.
- 67) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

78) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

1

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 <u>clause table</u> 8.7.2.1.2.2.

Table 8.7.2.1.2.2: CPICH Ec/lo Intra frequency relative accuracy

Paramotor	Unit	Accuracy [dB]	Conditions	
Farameter	<u>onn</u>	Normal condition	Extreme condition	lo [dBm]
	<u>dB</u>	<u>+2.3 for -14 ≤ CPICH Ec/Io</u>		<u>-9450</u>
CPICH_Ec/lo		± 2.8 for $-16 \leq CPICH Ec/lo < -14$	<u>±3.8</u>	
		± 3.8 for $-20 \leq CPICH Ec/lo < -16$		

Table 8.7.2.1.2.3: CPICH Ec/lo Intra frequency tests parameters

Peremeter	l Init	Tes	<u>st 1</u>	Te	<u>st 2</u>	Test 3	
Farameter	<u>onit</u>	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Char	<u>nel 1</u>	Char	nel 1	Channel 1	
CPICH_Ec/lor	<u>dB</u>	-9). <u>7</u>	-9	. <u>8</u>	-9) <u>.9</u>
PCCPCH_Ec/lor	<u>dB</u>	-1	2		2	-1	2
SCH_Ec/lor	<u>dB</u>	-1	2	-	2	-1	2
PICH_Ec/lor	<u>dB</u>	<u>-15</u>		<u>-15</u>		-1	15
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	_	<u>-15</u>	-	<u>-6</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-1.15</u>	<u>-0.98</u>	<u>-1.13</u>	<u>-0.97</u>	<u>2.57</u>	<u>-0.95</u>
loc	<u>dBm/ 3.84 MHz</u>	<u>-5</u>	<u>8.5</u>	<u>-89.07</u>		<u>-93.98</u>	
<u>Îor/loc</u>	<u>dB</u>	<u>3.3</u>	<u>3.3</u>	<u>-2.6</u>	<u>-2.6</u>	<u>-8.7</u>	<u>-8.7</u>
CPICH Ec/lo, Note 1	<u>dBm</u>	<u>-13.6</u>	<u>-13.6</u>	<u>-15.6</u>	<u>-15.6</u>	<u>-19.6</u>	<u>-19.6</u>
lo, Note 1	<u>dBm</u>	<u>-5</u>	1 <u>,3</u>	-85	.85	-93	<u>2.9</u>
Propagation condition	<u>-</u> <u>AWGN</u>		AW	'GN	AW	'GN	
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They							
are not settable parameters themselves.							
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests							
2 and 3 shall be set within 5 seconds so that LIE does not loose the Cell 2 in between the tests							

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

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July – 01 August 2003

CHANGE REQUEST						CR-Form-v7					
ж		<mark>34.121</mark>	CR 282	2	≋ rev	-	ж	Current vers	ion:	5.0.0	ж
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Summary of change: #	Test Requirements are included					
Consequences if 🛛 🕱	Test could fail "good UEs" because Test Requirements differ from the Minimum					
not approved:	Requirements					
Clauses affected: %	8.7.2.1					
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Other specs 第	X Other core specifications #					
affected:	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.

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

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

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.

Table 8.7.2.1.1.2: CPICH Ec/lo Intra frequency 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
UTRA RF Channel number		Chan	nel 1	Chan	nel 1	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	-12		-12 -12	
PICH_Ec/lor	dB	-1	5	-15		-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	-56.98 -89.07		.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
lo, Note 1	Note 1 dBm/3.84 MHz		50	-86		-94	
Propagation condition	-	AWGN		AW	GN	AW	GN
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They							
are not settable parameters themselves.							

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

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) <u>A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.1.5.</u>

<u>+2</u>)SS shall transmit MEASUREMENT CONTROL message.

- 23) UE shall transmit periodically MEASUREMENT REPORT messages.
- 34) 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.

45) 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 8.7.2.1.1.25 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 34) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.25 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 34) above is repeated.

56) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

67) 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	$-0.5 \le \text{CPICH Ec/lo} < 0$	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 frequer	ncy measurement (Ste	p 1):

Information Element	Value/Remark
Message Type	
LIE information elements	
DE Information elements	0
Integrity shock info	U Not Present
-Integrity check into	
Measurement Identity	1
Monouroment Command	I Modify
Monsurement Reporting Mode	Acknowledged mede PLC
Moosurement Report Transfer Mode	Acknowledged mode RLC
- Deriodical Reporting / Event Trigger Reporting	r enouical reporting
	Not Procont
-Additional moasurement list	Intra-froquency measurement
	Intra-frequency measurement
-onoice measurement	
- Intra-frequency measurement objects list	Not Procont
-Intra-frequency measurement quantity	Not resent
-Filter coefficient	0
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-SEN-SEN 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.

			Accuracy [dB]		Conditions
	Parameter Unit		Normal condition	Extreme condition	lo [dBm/3.84 MHz]
 	CPICH_Ec/lo	dB	$\begin{array}{c} -\underline{3.12.71.91.5} \\ Ec/lo \\ -3.\underline{26}2\underline{.4} \text{ for } -16 \leq \text{CPICH Ec/lo} < -\\ 14 \\ -4.\underline{26}3\underline{.4} \text{ for } -20 \leq \text{CPICH Ec/lo} < -\\ 16 \end{array}$	-4. <u>26</u> 3 <u>.4</u>	-9487
			\pm 1.95 for -14 \leq CPICH Ec/lo \pm 2.4 for -16 \leq CPICH Ec/lo < -14 \pm 3.4 for -20 \leq CPICH Ec/lo < -16	± 3 <u>.4</u>	-8750

Table 8.7.2.1.1.4: CPICH	_Ec/lo Intra frequenc	y absolute accuracy,	, test requirements
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The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.1.1.5: CPICH_Ec/lo Intra frequency tests parameters

Peremeter	Unit	Tes	<u>st 1</u>	Test 2		Test 3	
Farameter	<u>onit</u>	Cell 1	Cell 2	Cell 1	Cell 2	<u>Cell 1</u>	Cell 2
UTRA RF Channel number		<u>Char</u>	<u>inel 1</u>	<u>Char</u>	<u>nel 1</u>	Channel 1	
CPICH_Ec/lor	<u>dB</u>	-9	.7	-9	<u>.8</u>	-9	<u>.9</u>
PCCPCH_Ec/lor	<u>dB</u>	-1	2	-1	2	-1	2
SCH_Ec/lor	<u>dB</u>	-1	2	-1	2	-1	2
PICH_Ec/lor	<u>dB</u>	-15		<u>-15</u>		<u>-15</u>	
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	-	<u>-15</u>	_	<u>-6</u>	-
OCNS_Ec/lor	<u>dB</u>	<u>-1.15</u>	<u>-0.98</u>	<u>-1.13</u>	<u>-0.97</u>	<u>2.57</u>	<u>-0.95</u>
loc	<u>dBm/ 3.84 MHz</u>	<u>-58</u>	<u>3.5</u>	<u>-89.07</u>		<u>-93.98</u>	
<u>Îor/loc</u>	<u>dB</u>	<u>3.3</u>	<u>3.3</u>	<u>-2.6</u>	<u>-2.6</u>	<u>-8.7</u>	<u>-8.7</u>
CPICH Ec/lo, Note 1	<u>dBm</u>	<u>-13.6</u>	<u>-13.6</u>	<u>-15.6</u>	<u>-15.6</u>	<u>-19.6</u>	<u>-19.6</u>
lo, Note 1	<u>dBm</u>	<u>-5</u>	1. <u>3</u>	-85	. <u>85</u>	<u>-92</u>	<u>2.9</u>
Propagation condition -			' <u>GN</u>	AW	<u>'GN</u>	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.	Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests						

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

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

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

$$- \frac{|CPICH _RSCP1|_{in \ dBm} - CPICH _RSCP2|_{in \ dBm}| \le 20 dB}{\left. \left. \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in \ dB}} - \left(\frac{CPICH _E_c}{I_{or}} \right) \right|_{in \ dB} \le 20 dB.$$

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]
	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 9.1.2.1.2 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) 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 8.7.2.1.1.3.
- <u>+2</u>)SS shall transmit MEASUREMENT CONTROL message.
- 23) UE shall transmit periodically MEASUREMENT REPORT messages.
- 34) 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.

45) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

56) 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 8.7.2.1.1.23 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 34) and 45) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.23 for Test 3. While RF parameters are set up according to table 8.7.2.1.1.23 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.23 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 34) and 45) above are repeated.
- 67) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

78) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

1

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 <u>clause table</u> 8.7.2.1.2.2.

Table 8.7.2.1.2.2: CPICH Ec/lo Intra frequency relative accuracy

Paramotor	Unit	Accuracy [dB]	Conditions	
Farameter	<u>onn</u>	Normal condition	Extreme condition	lo [dBm]
	<u>dB</u>	<u>+2.3 for -14 ≤ CPICH Ec/Io</u>		<u>-9450</u>
CPICH_Ec/lo		± 2.8 for $-16 \leq CPICH Ec/lo < -14$	<u>±3.8</u>	
		± 3.8 for $-20 \leq CPICH Ec/lo < -16$		

Table 8.7.2.1.2.3: CPICH Ec/lo Intra frequency tests parameters

Peremeter	l Init	Tes	<u>st 1</u>	Te	<u>st 2</u>	Test 3	
Farameter	<u>onit</u>	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Char	<u>nel 1</u>	Char	nel 1	Channel 1	
CPICH_Ec/lor	<u>dB</u>	-9). <u>7</u>	-9	. <u>8</u>	-9) <u>.9</u>
PCCPCH_Ec/lor	<u>dB</u>	-1	2		2	-1	2
SCH_Ec/lor	<u>dB</u>	-1	2	-	2	-1	2
PICH_Ec/lor	<u>dB</u>	-1	5	-1	-15		15
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	_	<u>-15</u>	-	<u>-6</u>	
OCNS_Ec/lor	<u>dB</u>	<u>-1.15</u>	<u>-0.98</u>	<u>-1.13</u>	<u>-0.97</u>	<u>2.57</u>	<u>-0.95</u>
loc	<u>dBm/ 3.84 MHz</u>	<u>-5</u>	<u>8.5</u>	-89.07		<u>-93</u>	.98
<u>Îor/loc</u>	<u>dB</u>	<u>3.3</u>	<u>3.3</u>	<u>-2.6</u>	<u>-2.6</u>	<u>-8.7</u>	<u>-8.7</u>
CPICH Ec/lo, Note 1	<u>dBm</u>	<u>-13.6</u>	<u>-13.6</u>	<u>-15.6</u>	<u>-15.6</u>	<u>-19.6</u>	<u>-19.6</u>
lo, Note 1	<u>dBm</u>	<u>-5</u>	1 <u>,3</u>	-85	.85	-93	<u>2.9</u>
Propagation condition	-	AWGN		AW	'GN	AW	'GN
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They							
are not settable parameters themselves.							
Tests shall be done sequentially.	Test 1 shall be done	first. After	test 1 has	been exec	cuted test p	parameters	s for tests
2 and 3 shall be set within 5 seconds so that LIE does not loose the Cell 2 in between the tests							

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

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Reason for chan	ge:	Requirements are	missing.					

Reason for change:	Heat Requirements are missing.
Summary of change:	# Test Requirements are included
Consequences if	# Test could fail "good UEs" because Test Requirements differ from the Minimum
not approved:	Requirements
- -	•
Clauses affected:	¥ 8.7.2.2
Other specs	Y N # X Other core specifications #
affected:	X Test specifications X 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.

- 8.7.2.2 Inter frequency measurement accuracy
- 8.7.2.2.1 Void
- 8.7.2.2.2 Relative accuracy requirement

8.7.2.2.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io in the inter frequency case is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on a different frequency.

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

8.7.2.2.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.2.2.1 are valid under the following conditions:

- CPICH_RSCP1,2 $|_{dBm} \ge -114 \text{ dBm}.$

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

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

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

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/Io		-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 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256". CPICH Ec/Io inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.2.2.2.

Paramotor	Unit	Tes	st 1	Test 2		Test 3	
Falanetei	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
number		0.141.101.1	0.10.1012	0.141.101	0.10.10.2	0.14.1101	0.101.00.2
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	-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
Io, 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 settat	are not settable parameters themselves.						
are not settable parameters themselves.							

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) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.2.2.4.
- 12) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 23) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 34) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.
- 45) UE shall transmit periodically MEASUREMENT REPORT messages.
- 56) 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.
- 67) The result of step 56) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 78) 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 8.7.2.2.2.24 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 56) and 67) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.24 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.24 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 56) and 67) above are repeated.
- 82) After 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- <u>910</u>) 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 Flement	Value/Remark
Message Type	Value/Kemark
Moodage 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 BBC State Indicator	
-RRC State Indicator	CELL_DCH Not Present
-OTRAN DRA Cycle length coefficient	Not Present
-CN Information info	Not Procent
UTDAN mobility information alamanta	NOL FIESEIIL
	Not Procent
PR information elements	Not Flesent
Downlink counter synchronisation info	Not Procent
PhyCH information alomants	Not Flesent
-Frequency info	Not Present
Liplink radio resources	Not i resent
-Maximum allowed LIL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-IGPL2	Not Present
-RPP	Mode 0
	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 3.0
-DeltaSIR I	3.0
-DeltaSINallel I DoltaSIR2	3.0 Not Present
-DeltaSIR2 DoltaSIRaftor2	Not Present
-NI Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100

-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as
	currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	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

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	
-SFN-SFN observed time difference reporting	
indicator	No report
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	IRUE
	FDD
-CPICH EC/NU reporting indicator	
-CPICH RSCP reporting indicator	
-Pathioss reporting indicator	TRUE
-Reporting quantities for monitored set cells	No report
-SEN-SEN observed time difference reporting	No report
Indicator	
-Cell synchronisation mormation reporting	FALSE
Coll Identity reporting indicator	TRUE
	EDD
-CHOICE III000	
-CPICH EC/NU reporting indicator	
-CFICH RSCF reporting indicator	
-Pathioss reporting indicator	I RUE Not Present
-Reporting quantities for detected set cells	Not Present
	Deport all active act calls + calls within
	mentioned set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Maximum number of reported cells	Not Present
	Poriodical reporting criteria
	Infinity
-Reporting interval	250 ms
Physical channel information elements	200 1113
-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	Setup
-Measurement Reporting Mode	p
- 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	Not Tresent
	Inter-frequency reporting criteria
Measurement quentity for frequency quelity	
-measurement quantity for frequency quality	
Inter frequency reporting quantity	
	TDUE
-UTRA Callier RSSI	
-Frequency quality estimate	TRUE
-Non nequency related cell reporting quantities	No roport
-SFIN-SFIN Observed unte difference reporting	no report
Indicator	TRUE
-Cell synchronisation information reporting	TRUE
	TRUE
-Cell Identity reporting indicator	
	FDD
-CPICH Ec/N0 reporting indicator	
-CPICH RSCP reporting indicator	
-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]
		$-3.52.72.31.5$ for $-14 \le CPICH$ Ec/lo	- <u>5.0</u> 4.23 <u>.8</u>	-9487
		$-4.03.2$ m 2.8 for $-16 \le$ CPICH EC/IO < -14		
		- <u>5.0</u> 4.23.8 101 -20 ≤ CPICH EC/10 < -16		
CPICH_Ec/lo	dB	\pm ±2.31.5 for -14 ≤ CPICH Ec/lo ± 2.8 for -16 ≤ CPICH Ec/lo < -14 ± 3.8 for -20 ≤ CPICH Ec/lo < -16	± 3 <u>.8</u>	-8750

Table 8.7.2.2.3: CPICH_Ec/lo Inter frequency relative accuracy, test requirements

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

Table 8.7.2.2.2.4: CPICH Ec/lo Inter frequency tests parameters

Deremeter	<u>Unit</u>	Tes	<u>st 1</u>	Te	st 2	Test 3		
Parameter		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2	
<u>number</u>								
CPICH_Ec/lor	<u>dB</u>	<u>-1</u>	0	-1	0	<u>-10</u>		
PCCPCH_Ec/lor	<u>dB</u>	-1	2		2	<u>-12</u>		
SCH_Ec/lor	<u>dB</u>	<u>-1</u>	2	<u>-^</u>	2	<u>-12</u>		
PICH_Ec/lor	<u>dB</u>	<u>-1</u>	<u> 5</u>	-1	<u>15</u>	<u>-15</u>		
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	_	<u>-6</u>	_	<u>-6</u>	_	
OCNS_Ec/lor	<u>dB</u>	<u>-1.12</u>	<u>-0.95</u>	<u>-2.55</u>	<u>-0.94</u>	<u>-2.55</u>	<u>-0.94</u>	
loc	<u>dBm/ 3.84</u> MHz	<u>-53.5</u>	<u>-53.5</u>	<u>-86.27</u>	<u>-86.27</u>	<u>-93.46</u>	<u>-93.46</u>	
Îor/loc	dB	<u>-1.45</u>	<u>-1.45</u>	-4.4	-4.4	-9.24	<u>-9.24</u>	
CPICH Ec/lo, Note 1	<u>dBm</u>	-13.8 -13.8		<u>-15.7</u>	<u>-15.7</u>	<u>-19.7</u>	<u>-19.7</u>	
lo, Note 1	<u>dBm</u>	<u>-51.15</u>	<u>-51.15</u>	<u>-84.9</u>	<u>-84.9</u>	<u>-93</u>	<u>-93</u>	
Propagation condition	<u> </u>	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 LIE does not loose the Cell 2 in between the tests								

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

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July – 01 August 2003

CHANGE REQUEST									CR-Form-v7			
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For HELP on using this form, see bottom of this page or look at the pop-up text over the X symbols.												
Proposed change affects: UICC apps% MEX Radio Access Network Core Network												
Title:	ж	Test Req	uiremen	ts for RRM C	CPICH	Ec/I	<mark>o In</mark>	ter Fr	requency	Measu	irement	
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Reason for chan	ige	: ೫ <mark>Tes</mark> t	Require	ements are m	<mark>nissing</mark>	j .						

Reason for change. the						
Summary of change: #	Test Requirements are included					
Consequences if #	Test could fail "good UEs" because Test Requirements differ from the Minimum					
not approved:	Requirements					
Clauses affected: #	8.7.2.2					
	YN					
Other specs #	X Other core specifications #					
affected:	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.
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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.

- 8.7.2.2 Inter frequency measurement accuracy
- 8.7.2.2.1 Void
- 8.7.2.2.2 Relative accuracy requirement

8.7.2.2.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io in the inter frequency case is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on a different frequency.

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

8.7.2.2.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.2.2.1 are valid under the following conditions:

- CPICH_RSCP1,2 $|_{dBm} \ge -114 \text{ dBm}.$

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

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

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

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/Io		-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 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256". CPICH Ec/Io inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.2.2.2.
1 1 5 1 5	163	5T 1	les	st 2	les	st 3	
Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2	
	0.10.110	0.101.012	0.141.101	0.101.00.2	0.101.101.1	0.101.101.2	
dB	-1	0	-1	0	-1	0	
dB	-1	2	-1	2	-1	2	
dB	-1	2	-1	2	-1	2	
dB	-1	5	-1	5	-15		
dB	-15	-	-6	-	-6	-	
dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94	
dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46	
dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54	
dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0	
dBm/3.84 MHz	-50 -50		-86 -86		-94	-94	
ndition - AWGN AWGN AWGN							
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They							
le parameters	themselves.						
	dB dB dB dB dB dBm/ 3.84 MHz dBm/ 3.84 MHz dBm/3.84 MHz - and lo levels h e parameters	Cell 1 dB -1 dB -15 dB -1.11 dBm/ 3.84 -52.22 dB -1.75 dBm -14.0 dBm/3.84 -50 MHz -50 - AW and lo levels have been calle parameters themselves.	Cell 1 Cell 2 Channel 1 Channel 2 dB -10 dB -12 dB -12 dB -15 dB -175 dBm/3.84 -50 MHz -50 - AWGN and lo levels have been calculated from le parameters themselves.	Cell 1 Cell 2 Cell 1 Channel 1 Channel 2 Channel 1 dB -10 -1 dB -12 -1 dB -12 -1 dB -12 -1 dB -15 -1 dB -15 -6 dB -15 -6 dB -15 -6 dB -15 -7 dB -15 -6 dB -15 -7 dB -15 -7 dB -15 -7 dB -175 -4.7 dBm -14.0 -16.0 dBm/3.84 -50 -50 -86 - AWGN AW and lo levels have been calculated from other parameters themselves. -	Cell 1 Cell 2 Cell 1 Cell 2 Channel 1 Channel 2 Channel 1 Channel 2 dB -10 -10 dB -12 -12 dB -12 -12 dB -15 -15 dB -15 -6 dB -15 -6 dB -11 -0.94 dBm/ 3.84 -52.22 -52.22 dB -1.75 -4.7 dB -14.0 -16.0 dBm/3.84 -50 -50 MHz -50 -86 - AWGN AWGN and lo levels have been calculated from other parameters for inform eparameters themselves.	Cell 1 Cell 2 Cell 1 Cell 2 Cell 1 Cell 2 Cell 1 Channel 1 Channel 2 Channel 2 Channel 1 Channel 2 Channel 1 -1 <td< td=""></td<>	

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) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.2.2.4.
- 12) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 23) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 34) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.
- 45) UE shall transmit periodically MEASUREMENT REPORT messages.
- 56) 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.
- 67) The result of step 56) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 78) 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 8.7.2.2.2.24 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 56) and 67) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.24 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.24 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 56) and 67) above are repeated.
- 89) After 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- <u>910</u>) 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 Flement	Value/Remark
Message Type	Value/Kemark
Moodage 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 BBC State Indicator	
-RRC State Indicator	CELL_DCH Not Present
-OTRAN DRA Cycle length coefficient	Not Present
-CN Information info	Not Procent
UTDAN mobility information alamanta	NOL FIESEIIL
	Not Procent
PR information elements	Not Flesent
Downlink counter synchronisation info	Not Procent
PhyCH information alomants	Not Flesent
-Frequency info	Not Present
Liplink radio resources	Not i resent
-Maximum allowed LIL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-IGPL2	Not Present
-RPP	Mode 0
	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 3.0
-DeltaSIR I	3.0
-DeltaSINallel I DoltaSIR2	3.0 Not Present
-DeltaSIR2 DoltaSIRaftor2	Not Present
-NI Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100

-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as
	currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	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

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	
-SFN-SFN observed time difference reporting	
indicator	No report
-Cell synchronisation information reporting	
Indicator	IRUE
-Cell Identity reporting indicator	IRUE
-CHOICE mode	
-CPICH EC/NU reporting indicator	
-CPICH RSCP reporting indicator	
-Pathioss reporting indicator	IRUE
-Reporting quantities for monitored set cells	No report
-SEN-SEN Observed time difference reporting	потероп
Coll synchronication information reporting	
-Cell Synchronisation montation reporting	FALSE
-Cell Identity reporting indicator	TRUE
	FDD
-CPICH Ec/NO reporting indicator	TRUE
-CPICH RSCP reporting indicator	
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	Norrioson
-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	Setup
-Measurement Reporting Mode	P
- Measurement Report Transfer Mode	Acknowledged mode RI C
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	r enoulour reporting
-Additional measurement list	Not Present
	Inter-frequency measurement
-Inter-frequency measurement	inter nequency measurement
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Prosont
Now inter frequency cells	Coll 2 information is included
Coll for management	Net Present
-Cell for measurement questity	NOL FIESEIIL
	later frequency reporting eviteria
-CHOICE reporting chiena	
-CHOICE mode	
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	TRUE
-UTRA Carrier RSSI	IRUE
-Frequency quality estimate	IRUE
-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]
		$-3.52.72.31.5$ for $-14 \le CPICH$ Ec/lo	- <u>5.0</u> 4.23 <u>.8</u>	-9487
		-4.03.2		
		- <u>5.0</u> 4.23.8 101 -20 ≤ CPICH EC/10 < -16		
CPICH_Ec/lo	dB	\pm \pm 2.31.5 for -14 ≤ CPICH Ec/lo ± 2.8 for -16 ≤ CPICH Ec/lo < -14 ± 3.8 for -20 ≤ CPICH Ec/lo < -16	± 3 <u>.8</u>	-8750

Table 8.7.2.2.2.3: CPICH_Ec/lo Inter frequency relative accuracy, test requirements

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

Table 8.7.2.2.2.4: CPICH Ec/lo Inter frequency tests parameters

Demonster	11	Tes	st 1	Te	st 2	Tes	st 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								
CPICH_Ec/lor	<u>dB</u>	-1	0	-1	<u>10</u>	-1	0	
PCCPCH_Ec/lor	<u>dB</u>	-1	2		12	-1	2	
SCH_Ec/lor	<u>dB</u>	<u>-1</u>	2	<u>-^</u>	12	-1	2	
PICH_Ec/lor	<u>dB</u>	<u>-1</u>	<u> 5</u>	<u>-</u>	<u>15</u>	<u>-15</u>		
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	_	<u>-6</u>	_	<u>-6</u>	_	
OCNS_Ec/lor	<u>dB</u>	<u>-1.12</u> <u>-0.95</u>		<u>-2.55</u>	<u>-0.94</u>	<u>-2.55</u>	<u>-0.94</u>	
loc	<u>dBm/ 3.84</u>	-53.5 -53.5		-86.27	-86.27	-93.46	-93.46	
	MHz							
lor/loc	<u>dB</u>	<u>-1.45</u>	<u>-1.45</u>	<u>-4.4</u>	<u>-4.4</u>	<u>-9.24</u>	<u>-9.24</u>	
CPICH Ec/lo, Note 1	<u>dBm</u>	<u>-13.8</u>	<u>-13.8</u>	<u>-15.7</u>	<u>-15.7</u>	<u>-19.7</u>	<u>-19.7</u>	
lo, Note 1	<u>dBm</u>	<u>-51.15</u>	<u>-51.15</u>	<u>-84.9</u> <u>-84.9</u>		<u>-93</u>	<u>-93</u>	
Propagation condition	<u> </u>	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 seq	uentially. Test	1 shall be do	ne first. After	test 1 has be	en executed	test paramet	ers for tests	
2 and 3 shall be set with	nin 5 seconds s	so that LIE do	es not loose	the Cell 2 in I	netween the t	ests		

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

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July – 01 August 2003

CHANGE REQUEST														
ж		34	<mark>.121</mark>	CR	285	жr	ev	-	Ħ	Currer	nt vers	sion:	5.0.0	ж
For <u>HELP</u> o	n u:	sing	this fo	rm, see	e bottom of	this pag	ge or	look	at th	e pop-u	ıp text	over	[·] the	mbols.
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Title:	ж	Te	<mark>st Req</mark>	uireme	nts for RR	M CPIC	H Ec/	<mark>/lo In</mark>	ter F	requen	cy Me	asure	ement	
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Work item code	:¥									Da	ate: ೫	14/	/07/2003	
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Reason for char	nge	: ж	Test	Requi	rements ar	<mark>e missir</mark>	ıg.							

Reason for change. m	rest requirements are missing.					
Summary of change: #	Test Requirements are included					
Consequences if 🛛 🕱	Test could fail "good UEs" because Test Requirements differ from the Minimum					
not approved:	Requirements					
Clauses affected: #	8.7.2.2					
Other specs ж affected:	YNXOther core specifications#XTest specificationsXO&M Specifications					
Other comments: #						

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 <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.

- 8.7.2.2 Inter frequency measurement accuracy
- 8.7.2.2.1 Void
- 8.7.2.2.2 Relative accuracy requirement

8.7.2.2.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io in the inter frequency case is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on a different frequency.

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

8.7.2.2.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.2.2.1 are valid under the following conditions:

- CPICH_RSCP1,2 $|_{dBm} \ge -114 \text{ dBm}.$

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

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

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

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/Io		-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 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256". CPICH Ec/Io inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.2.2.2.

1 1 5 1 5	163	5T 1	les	st 2	les	st 3	
Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2	
	0.10.110	0.101.01.2	0.141.101	0.101.00.2	0.101.101.1	0.101.101.2	
dB	-1	0	-1	0	-1	0	
dB	-1	2	-1	2	-1	2	
dB	-1	2	-1	2	-1	2	
dB	-1	5	-1	5	-15		
dB	-15	-	-6	-	-6	-	
dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94	
dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46	
dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54	
dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0	
dBm/3.84 MHz	-50 -50		-86 -86		-94	-94	
ndition - AWGN AWGN AWGN							
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They							
le parameters	themselves.						
	dB dB dB dB dB dBm/ 3.84 MHz dBm/ 3.84 MHz dBm/3.84 MHz - and lo levels h e parameters	Cell 1 dB -1 dB -15 dB -1.11 dBm/ 3.84 -52.22 dB -1.75 dBm -14.0 dBm/3.84 -50 MHz -50 - AW and lo levels have been calle parameters themselves.	Cell 1 Cell 2 Channel 1 Channel 2 dB -10 dB -12 dB -12 dB -15 dB -175 dBm/3.84 -50 MHz -50 - AWGN and lo levels have been calculated from le parameters themselves.	Cell 1 Cell 2 Cell 1 Channel 1 Channel 2 Channel 1 dB -10 -1 dB -12 -1 dB -12 -1 dB -12 -1 dB -15 -1 dB -15 -6 dB -15 -6 dB -15 -6 dB -15 -7 dB -15 -6 dB -15 -7 dB -15 -7 dB -15 -7 dB -175 -4.7 dBm -14.0 -16.0 dBm/3.84 -50 -50 -86 - AWGN AW and lo levels have been calculated from other parameters themselves. -	Cell 1 Cell 2 Cell 1 Cell 2 Channel 1 Channel 2 Channel 1 Channel 2 dB -10 -10 dB -12 -12 dB -12 -12 dB -15 -15 dB -15 -6 dB -15 -6 dB -11 -0.94 dBm/ 3.84 -52.22 -52.22 dB -1.75 -4.7 dB -14.0 -16.0 dBm/3.84 -50 -50 MHz -50 -86 - AWGN AWGN and lo levels have been calculated from other parameters for inform eparameters themselves.	Cell 1 Cell 2 Cell 1 Cell 2 Cell 1 Cell 2 Cell 1 Channel 1 Channel 2 Channel 2 Channel 1 Channel 2 Channel 1 -1 <td< td=""></td<>	

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) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.2.2.4.
- 12) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 23) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 34) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.
- 45) UE shall transmit periodically MEASUREMENT REPORT messages.
- 56) 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.
- 67) The result of step 56) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 78) 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 8.7.2.2.2.24 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 56) and 67) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.24 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.24 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 56) and 67) above are repeated.
- 89) After 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
- <u>910</u>) 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 Flement	Value/Remark
Message Type	Value/Kemark
Moodage 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 BBC State Indicator	
-RRC State Indicator	CELL_DCH Not Present
-OTRAN DRA Cycle length coefficient	Not Present
-CN Information info	Not Procent
UTDAN mobility information alamanta	NOL FIESEIIL
	Not Procent
PR information elements	Not Flesent
Downlink counter synchronisation info	Not Procent
PhyCH information alomants	Not Flesent
-Frequency info	Not Present
Liplink radio resources	Not i resent
-Maximum allowed LIL TX power	Not Present
- CHOICE channel requirement	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence	
configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-IGPL2	Not Present
-RPP	Mode 0
	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 3.0
-DeltaSIR I	3.0
-DeltaSINallel I DoltaSIR2	3.0 Not Present
-DeltaSIR2 DoltaSIRaftor2	Not Present
-NI Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-Downlink information per radio link list	
-Downlink information for each radio link	
-Choice mode	FDD
-Primary CPICH info	
-Primary scrambling code	100

-PDSCH with SHO DCH Info	Not Present
-PDSCH code mapping	Not Present
-Downlink DPCH info for each RL	
-CHOICE mode	FDD
-Primary CPICH usage for channel estimation	Primary CPICH may be used
-DPCH frame offset	Set to value Default DPCH Offset Value (as
	currently stored in SS) mod 38400
-Secondary CPICH info	Not Present
-DL channelisation code	
-Secondary scrambling code	Not Present
-Spreading factor	128
-Code number	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

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	
-SFN-SFN observed time difference reporting	
indicator	No report
-Cell synchronisation information reporting	
Indicator	IRUE
-Cell Identity reporting indicator	IRUE
-CHOICE mode	
-CPICH EC/NU reporting indicator	
-CPICH RSCP reporting indicator	
-Pathioss reporting indicator	IRUE
-Reporting quantities for monitored set cells	No report
-SEN-SEN Observed time difference reporting	потероп
Coll synchronication information reporting	
-Cell Synchronisation montation reporting	FALSE
-Cell Identity reporting indicator	TRUE
	FDD
-CPICH Ec/NO reporting indicator	TRUE
-CPICH RSCP reporting indicator	
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	Norrioson
-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	Setup
-Measurement Reporting Mode	P
- Measurement Report Transfer Mode	Acknowledged mode RI C
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	r enoulour reporting
-Additional measurement list	Not Present
	Inter-frequency measurement
-Inter-frequency measurement	inter nequency measurement
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Prosont
Now inter frequency cells	Coll 2 information is included
Coll for management	Net Present
-Cell for measurement questity	NOL FIESEIIL
	later frequency reporting eviteria
-CHOICE reporting chiena	
-CHOICE mode	
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	TRUE
-UTRA Carrier RSSI	IRUE
-Frequency quality estimate	IRUE
-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]
		$-3.52.72.31.5$ for $-14 \le CPICH$ Ec/lo	- <u>5.0</u> 4.23 <u>.8</u>	-9487
		-4.03.2		
		- <u>5.0</u> 4.23.8 101 -20 ≤ CPICH EC/10 < -16		
CPICH_Ec/lo	dB	\pm \pm 2.31.5 for -14 ≤ CPICH Ec/lo ± 2.8 for -16 ≤ CPICH Ec/lo < -14 ± 3.8 for -20 ≤ CPICH Ec/lo < -16	± 3 <u>.8</u>	-8750

Table 8.7.2.2.2.3: CPICH_Ec/lo Inter frequency relative accuracy, test requirements

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

Table 8.7.2.2.2.4: CPICH Ec/lo Inter frequency tests parameters

Demonster	Decemptor Unit 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							
CPICH_Ec/lor	<u>dB</u>	-1	0	-1	<u>10</u>	-1	0
PCCPCH_Ec/lor	<u>dB</u>	-1	2		12	-1	2
SCH_Ec/lor	<u>dB</u>	<u>-1</u>	2	<u>-^</u>	12	<u>-12</u>	
PICH_Ec/lor	<u>dB</u>	<u>-1</u>	<u> 5</u>	-15		-15	
DPCH_Ec/lor	<u>dB</u>	<u>-15</u>	_	<u>-6</u>	_	<u>-6</u>	_
OCNS_Ec/lor	<u>dB</u>	<u>-1.12</u>	<u>-0.95</u>	<u>-2.55</u>	<u>-0.94</u>	<u>-2.55</u>	<u>-0.94</u>
loc	<u>dBm/ 3.84</u>	-53.5	-53.5	-86.27	-86.27	-93.46	-93.46
	MHz						
lor/loc	<u>dB</u>	<u>-1.45</u>	<u>-1.45</u>	<u>-4.4</u>	<u>-4.4</u>	<u>-9.24</u>	<u>-9.24</u>
CPICH Ec/lo, Note 1	<u>dBm</u>	<u>-13.8</u>	<u>-13.8</u>	<u>-15.7</u>	<u>-15.7</u>	<u>-19.7</u>	<u>-19.7</u>
lo, Note 1	<u>dBm</u>	<u>-51.15</u>	<u>-51.15</u>	<u>-84.9</u>	<u>-84.9</u>	<u>-93</u>	<u>-93</u>
Propagation condition	<u> </u>	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							

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

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July – 01 August 2003

ж	34.121 CR 286 #rev - *	Current version: 3.13.0 [#]	
For <u>HELP</u> o	n using this form, see bottom of this page or look at th	he pop-up text over the	
Proposed chang	ge affects: UICC apps ೫ ME <mark>Ⅹ</mark> Radio A	Access Network Core Network	
Title:	Test requirements for RRM Random Access test	ts	
Source:	<mark>អ T1</mark>		
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: %R99Use one of the following releases: 2(GSM Phase 2)2(GSM Phase 2)5e)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 char Summary of cha	nge: # Test tolerances for the Random Access tes	ts are not defined	

Clauses affected:	¥ 8.4.2
Other specs affected:	Y N X Other core specifications % X Test specifications % X O&M Specifications
Other comments:	¥

Test tolerances remain unspecified and test results are ambiguous.

How to create CRs using this form:

Consequences if

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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 Random Access

8.4.2.1 Correct behaviour when receiving an ACK

8.4.2.1.1 Definition and applicability

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

8.4.2.1.2 Minimum Requirements

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

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

There are two relative powers, one is the power difference for preamble ramping and another is the power difference between last preamble part and message part. From the test parameter in the table 8.4.2.1.2, the test requirement of the power difference for all preamble ramping is 3dB (Power offset P0). The accuracy is ± 2 dB as specified in clause 6.5.2.1 of 25.101 [1]. The test requirement of the power difference between 10th preamble PRACH and message part is $\{3 \text{ dB}\}$ (note). The accuracy is $\{\pm 2 \text{ dB}\}$ 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	_	0
Acquisition Indicators		0
AICH_Ec/lor	dB	-10
PICH_Ec/lor	dB	-15
OCNS_Ec/lor when an AI is not	dB	-0.9/1
transmitted	чв	0,041
OCNS_Ec/lor when an AI is	dB	-1 516
transmitted	üb	1,010
\hat{I}_{or}/I_{oc}	dB	0
Ι	dBm/3.	-70
- <i>oc</i>	84 MHz	
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

Table 8.4.2.1.1: R	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)	0.4	
	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 te

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

Table 8.4.2.1.3: SS parameters for Random Access test

8.4.2.1.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an ACK on the AICH shall be transmitted after 10 preambles have been received by the SS
- 12) 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 8.4.2.1.14.
- 23) 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.
- $\frac{34}{2}$) 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.

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

Table 8.4.2.1.4: Test requirement for power difference

	Power difference for all preambles	Power difference between 10th preamble PRACH and message part (control+data)
Test requirement	$3dB \pm 3 dB$	$3dB \pm 3 dB$

<u>NOTE:</u> In order to calculate the power difference between 10th preamble PRACH and message part by using <u>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.</u>

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.

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

Table 8.4.2.1.5: RF Parameters for Random Access test

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

8.4.2.2 Correct behaviour when receiving an NACK

8.4.2.2.1 Definition and applicability

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

8.4.2.2.2 Minimum Requirements

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

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

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

8.4.2.2.3 Test purpose

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

8.4.2.2.4 Method of test

8.4.2.2.4.1 Initial conditions

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

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

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

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 NACK 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.

8.4.2.2.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an NACK on the AICH shall be transmitted after 10 preambles have been received by the SS
- <u>1)2)</u>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.<u>4</u>.
- 2)3) Measure the number of the preamble part and the time delay between 10th preamble in the first ramping cycle and first preamble in the second ramping cycle by using a spectrum analyzer.

8.4.2.2.5 Test requirements

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

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

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

8.4.2.3 Correct behaviour at Time-out

8.4.2.3.1 Definition and applicability

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

8.4.2.3.2 Minimum Requirements

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

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

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

8.4.2.3.3 Test purpose

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

8.4.2.3.4 Method of test

8.4.2.3.4.1 Initial conditions

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

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

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

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 8.4.2.1.3 and table 8.4.2.1.4. 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	Unit	Value
Access Service Class (ASC#0)		
Poreistoneo valuo	01	1
Maximum number of preamble ramping cvcles (Mmax).		2
Maximum number of preambles in one preamble ramping cycle (Preamble Retrans Max)		12
The backoff time T _{B01} N _{B01min=} N _{B01max}	ms #TTI	N/A 10
Power step when no acquisition indicator is received (Power offset P0)	dB	3
Power offset between the last transmitted preamble and the control part of the message (Power offset P p-m)	dB	0
Maximum allowed UL TX power	dBm	21

Table 8.4.2.1.6: UE parameters for correct behaviour at Time-out test

8.4.2.3.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.3 and table 8.4.2.1.5. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no AICH.
- <u>1)2)</u> 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.
- $\frac{2}{3}$ Measure the number of the preamble part by using a spectrum analyzer.

8.4.2.3.5 Test requirements

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

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

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

8.4.2.4 Correct behaviour when reaching maximum transmit power

8.4.2.4.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in

clause 6 of TS 25.214 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.4.2 Minimum Requirements

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

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

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

8.4.2.4.3 Test purpose

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

8.4.2.4.4 Method of test

8.4.2.4.4.1 Initial condition

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

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

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

- 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.
- <u>+2</u>) 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.<u>+4</u>.
- <u>23</u>)Measure the all PRACH preamble output power of the UE according to annex B.

8.4.2.4.5 Test requirements

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

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

Table 8.4.2.4: Test requirement for maximum preamble power

	Maximum p	reamble power
Test requirement	<u>0dBm</u>	+2.7, -3 dB

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

3GPP TSG-T1 Meeting #20 Munich, Germany, 28 July – 01 August 2003

		CR-Form-v7
æ	34.121 CR 287 #rev -	# Current version: 4.0.0 #
For <u>HELP</u> or	n using this form, see bottom of this page or look a	t the pop-up text over the 発 symbols.
Proposed chang	e affects: UICC apps೫ ME X Radio	o Access Network Core Network
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Category:	 A Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier rele 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: %Rel-4Use one 2(GSM Phase 2)ease)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 chan	ge: 第 Test tolerances for the Random Access t	ests are not defined
Summary of cha	nge: # Test tolerances are added.	

Clauses affected:	₩ <mark>8.4.2</mark>
Other specs affected:	Y N % X Other core specifications % X Test specifications X O&M Specifications
Other comments:	ж

Test tolerances remain unspecified and test results are ambiguous.

How to create CRs using this form:

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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 Random Access

8.4.2.1 Correct behaviour when receiving an ACK

8.4.2.1.1 Definition and applicability

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

8.4.2.1.2 Minimum Requirements

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

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

There are two relative powers, one is the power difference for preamble ramping and another is the power difference between last preamble part and message part. From the test parameter in the table 8.4.2.1.2, the test requirement of the power difference for all preamble ramping is 3dB (Power offset P0). The accuracy is ± 2 dB as specified in clause 6.5.2.1 of 25.101 [1]. The test requirement of the power difference between 10th preamble PRACH and message part is $\{3 \text{ dB}\}$ (note). The accuracy is $\{\pm 2 \text{ dB}\}$ 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	_	0
Acquisition Indicators		0
AICH_Ec/lor	dB	-10
PICH_Ec/lor	dB	-15
OCNS_Ec/lor when an AI is not	dB	-0.9/1
transmitted	чв	0,041
OCNS_Ec/lor when an AI is	dB	-1 516
transmitted	üb	1,010
\hat{I}_{or}/I_{oc}	dB	0
Ι	dBm/3.	-70
- <i>oc</i>	84 MHz	
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

Table 8.4.2.1.1: R	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)	0.4	
	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 te

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

Table 8.4.2.1.3: SS parameters for Random Access test

8.4.2.1.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an ACK on the AICH shall be transmitted after 10 preambles have been received by the SS
- 12) 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 8.4.2.1.14.
- 23) 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.
- $\frac{34}{2}$) 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.

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

Table 8.4.2.1.4: Test requirement for power difference

	Power difference for all preambles	Power difference between 10th preamble PRACH and message part (control+data)
Test requirement	$3dB \pm 3 dB$	$3dB \pm 3 dB$

<u>NOTE:</u> In order to calculate the power difference between 10th preamble PRACH and message part by using <u>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.</u>

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.

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

Table 8.4.2.1.5: RF Parameters for Random Access test

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

8.4.2.2 Correct behaviour when receiving an NACK

8.4.2.2.1 Definition and applicability

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

8.4.2.2.2 Minimum Requirements

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

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

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

8.4.2.2.3 Test purpose

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

8.4.2.2.4 Method of test

8.4.2.2.4.1 Initial conditions

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

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

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

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 NACK 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.

8.4.2.2.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an NACK on the AICH shall be transmitted after 10 preambles have been received by the SS
- <u>1)2)</u>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.<u>4</u>.
- 2)3) Measure the number of the preamble part and the time delay between 10th preamble in the first ramping cycle and first preamble in the second ramping cycle by using a spectrum analyzer.

8.4.2.2.5 Test requirements

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

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

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

8.4.2.3 Correct behaviour at Time-out

8.4.2.3.1 Definition and applicability

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

8.4.2.3.2 Minimum Requirements

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

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

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

8.4.2.3.3 Test purpose

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

8.4.2.3.4 Method of test

8.4.2.3.4.1 Initial conditions

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

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

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

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 8.4.2.1.3 and table 8.4.2.1.4. 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	Unit	Value
Access Service Class (ASC#0)		
Poreistoneo valuo	01	1
Maximum number of preamble ramping cvcles (Mmax).		2
Maximum number of preambles in one preamble ramping cycle (Preamble Retrans Max)		12
The backoff time T _{B01} N _{B01min=} N _{B01max}	ms #TTI	N/A 10
Power step when no acquisition indicator is received (Power offset P0)	dB	3
Power offset between the last transmitted preamble and the control part of the message (Power offset P p-m)	dB	0
Maximum allowed UL TX power	dBm	21

Table 8.4.2.1.6: UE parameters for correct behaviour at Time-out test

8.4.2.3.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.3 and table 8.4.2.1.5. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no AICH.
- <u>1)2)</u> 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.
- $\frac{2}{3}$ Measure the number of the preamble part by using a spectrum analyzer.

8.4.2.3.5 Test requirements

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

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

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

8.4.2.4 Correct behaviour when reaching maximum transmit power

8.4.2.4.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in

clause 6 of TS 25.214 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.4.2 Minimum Requirements

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

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

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

8.4.2.4.3 Test purpose

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

8.4.2.4.4 Method of test

8.4.2.4.4.1 Initial condition

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

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

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

- 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.
- <u>+2</u>) 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.<u>+4</u>.
- <u>23</u>)Measure the all PRACH preamble output power of the UE according to annex B.

8.4.2.4.5 Test requirements

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

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

Table 8.4.2.4: Test requirement for maximum preamble power

	Maximum preamble power	
Test requirement	<u>0dBm</u>	+2.7, -3 dB

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

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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:

Test specifications

O&M Specifications

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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.

8.4.2 Random Access

8.4.2.1 Correct behaviour when receiving an ACK

8.4.2.1.1 Definition and applicability

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

8.4.2.1.2 Minimum Requirements

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

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

There are two relative powers, one is the power difference for preamble ramping and another is the power difference between last preamble part and message part. From the test parameter in the table 8.4.2.1.2, the test requirement of the power difference for all preamble ramping is 3dB (Power offset P0). The accuracy is ± 2 dB as specified in clause 6.5.2.1 of 25.101 [1]. The test requirement of the power difference between 10th preamble PRACH and message part is $\{3 \text{ dB}\}$ (note). The accuracy is $\{\pm 2 \text{ dB}\}$ 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	_	0
Acquisition Indicators		0
AICH_Ec/lor	dB	-10
PICH_Ec/lor	dB	-15
OCNS_Ec/lor when an AI is not	dB	-0.9/1
transmitted	чв	0,041
OCNS_Ec/lor when an AI is	dB	-1 516
transmitted	üb	1,010
\hat{I}_{or}/I_{oc}	dB	0
Ι	dBm/3.	-70
- <i>oc</i>	84 MHz	
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

Table 8.4.2.1.1: R	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)	0.4	
	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 te

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

Table 8.4.2.1.3: SS parameters for Random Access test

8.4.2.1.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an ACK on the AICH shall be transmitted after 10 preambles have been received by the SS
- 12) 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 8.4.2.1.14.
- 23) 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.
- $\frac{34}{2}$) 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.

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

Table 8.4.2.1.4: Test requirement for power difference

	Power difference for all preambles	Power difference between 10th preamble PRACH and message part (control+data)
Test requirement	$3dB \pm 3 dB$	$3dB \pm 3 dB$

<u>NOTE:</u> In order to calculate the power difference between 10th preamble PRACH and message part by using <u>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.</u>

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.

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

Table 8.4.2.1.5: RF Parameters for Random Access test

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

8.4.2.2 Correct behaviour when receiving an NACK

8.4.2.2.1 Definition and applicability

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

8.4.2.2.2 Minimum Requirements

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

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

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

8.4.2.2.3 Test purpose

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

8.4.2.2.4 Method of test

8.4.2.2.4.1 Initial conditions

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

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

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

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 NACK 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.

8.4.2.2.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an NACK on the AICH shall be transmitted after 10 preambles have been received by the SS
- <u>1)2)</u>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.<u>4</u>.
- 2)3) Measure the number of the preamble part and the time delay between 10th preamble in the first ramping cycle and first preamble in the second ramping cycle by using a spectrum analyzer.

8.4.2.2.5 Test requirements

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

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

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

8.4.2.3 Correct behaviour at Time-out

8.4.2.3.1 Definition and applicability

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

8.4.2.3.2 Minimum Requirements

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

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

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

8.4.2.3.3 Test purpose

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

8.4.2.3.4 Method of test

8.4.2.3.4.1 Initial conditions

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

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

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

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 8.4.2.1.3 and table 8.4.2.1.4. 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	Unit	Value
Access Service Class (ASC#0)		
Poreistoneo valuo	01	1
Maximum number of preamble ramping cvcles (Mmax).		2
Maximum number of preambles in one preamble ramping cycle (Preamble Retrans Max)		12
The backoff time T _{B01} N _{B01min=} N _{B01max}	ms #TTI	N/A 10
Power step when no acquisition indicator is received (Power offset P0)	dB	3
Power offset between the last transmitted preamble and the control part of the message (Power offset P p-m)	dB	0
Maximum allowed UL TX power	dBm	21

Table 8.4.2.1.6: UE parameters for correct behaviour at Time-out test

8.4.2.3.4.2 Procedure

- 1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.3 and table 8.4.2.1.5. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no AICH.
- <u>1)2)</u> 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.
- $\frac{2}{3}$ Measure the number of the preamble part by using a spectrum analyzer.

8.4.2.3.5 Test requirements

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

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

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

8.4.2.4 Correct behaviour when reaching maximum transmit power

8.4.2.4.1 Definition and applicability

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in

clause 6 of TS 25.214 and the control of the RACH transmission is specified in clause 11.2 of TS 25.321. A random access transmit sequence is described in clause 6.7.2 of TS 25.303.

8.4.2.4.2 Minimum Requirements

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

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

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

8.4.2.4.3 Test purpose

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

8.4.2.4.4 Method of test

8.4.2.4.4.1 Initial condition

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

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

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

- 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.
- <u>+2</u>) 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.<u>+4</u>.
- <u>23</u>)Measure the all PRACH preamble output power of the UE according to annex B.

8.4.2.4.5 Test requirements

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

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

Table 8.4.2.4: Test requirement for maximum preamble power

	Maximum p	reamble power
Test requirement	<u>0dBm</u>	+2.7, -3 dB

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

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¥	34.121 CR 289	Current version: 3.13.0 #	
For <u>HELP</u> on u	ising this form, see bottom of this page or look at the	pop-up text over the X symbols.	
Proposed change a	affects: UICC apps₩ ME X Radio Acc	cess Network Core Network	
Title: ೫	Completionof annex F		
Source: ೫	T1		
Work item code: ೫		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 <u>one</u> of the following releases: 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)	
Reason for change	e: # Follow up for Annex F due to newly developped	ed test requirements	
Summary of chang	ge: # Update of uncertainties and test tolerances		
Consequences if not approved:	第 Annex F incomplete		
Clauses affected:	ж Annex F		
Other specs affected:	YN#XXOther core specificationsXTest specificationsXO&M Specifications		
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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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Annex F (normative): General test conditions and declarations

The requirements of this clause apply to all applicable tests in the present document.

Many of the tests in the present document measure a parameter relative to a value that is not fully specified in the UE specifications. For these tests, the Minimum Requirement is determined relative to a nominal value specified by the manufacturer.

When specified in a test, the manufacturer shall declare the nominal value of a parameter, or whether an option is supported.

In all the relevant clauses in this clause all Bit Error Ratio (BER), Block Error Ratio (BLER), False transmit format Detection Ratio (FDR) measurements shall be carried out according to the general rules for statistical testing in clause F.6.

F.1 Acceptable uncertainty of Test System

The maximum acceptable uncertainty of the Test System is specified below for each test, where appropriate. The Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, and the equipment under test to be measured with an uncertainty not exceeding the specified values. All ranges and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95 % is the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment.

For RF tests it should be noted that the uncertainties in clause F.1 apply to the Test System operating into a nominal 50 ohm load and do not include system effects due to mismatch between the DUT and the Test System.

F.1.1 Measurement of test environments

The measurement accuracy of the UE test environments defined in annex G, Test environments shall be.

- Pressure ± 5 kPa.
- Temperature ±2 degrees.
- Relative Humidity ± 5 %.
- DC Voltage $\pm 1,0$ %.
- AC Voltage $\pm 1,5$ %.
- Vibration 10 %.
- Vibration frequency 0,1 Hz.

The above values shall apply unless the test environment is otherwise controlled and the specification for the control of the test environment specifies the uncertainty for the parameter.

F.1.2 Measurement of transmitter

Clause	Maximum Test System Uncertainty	Derivation of Test System
5.2 Movimum Output Dowor		Uncertainty
5.3 Frequency Error	±0,7 db	
5.4.1 Open loop power control in uplink	±1,0 dB	The uncertainty of this test is a combination of the downlink level setting error and the uplink power measurement that are uncorrelated.
		Formula = SQRT(source_level_error ² + power_meas_error ²)
5.4.2 Inner loop power control in the uplink - One step	±0,1 dB relative over a 1,5 dB range (1 dB and 0 dB step) ±0,15 dB relative over a 3,0 dB range (2 dB step) ±0,2 dB relative over a 4.5 dB range (3 dB step)	This accuracy is based on the linearity of the absolute power measurement of the test equipment.
5.4.2 Inner loop power control in the uplink – seven and ten steps	\pm 0,3 dB relative over a 26 dB range	
5.4.3 Minimum Output Power	±1,0 dB	Measured on a static signal
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH - E_c}{E_c}$	±0,4 dB	0.1 dB uncertainty in DPCCH ratio
1 _{or}		based on power meter measurement after the combiner Overall error is the sum of the \hat{I}_{or}/I_{oc} ratio error and the DPCCH_Ec/lor ratio. The absolute error of the AWGN loc is not important but is specified as 1.0 dB
5.5.1 Transmit OFF Power: (static case)	±1,0 dB	Measured on a static signal
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0,7 dB – 1,0 dB Off power (dynamic case) TBD	Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit (assume UE won't go above 24 nominal). For the off power, the accuracy of a two-pass measurement needs to be analysed.
5.6 Change of TFC: power control step size (7 dB step)	±0,3 dB relative over a 9 dB range	
5.7 Power setting in uplink compressed mode:- UE output power	Will be a subset of 5.4.2.	
5.8 Occupied Bandwidth	±100 kHz	Accuracy = $\pm 3^{*}$ RBW. Assume 30 kHz bandwidth.
5.9 Spectrum emission mask	±1,5 dB	

Table F.1.2: Maximum Test System Uncertainty for transmitter tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.10 ACLR	5 MHz offset: ± 0,8 dB	
	10 MHz offset: ± 0,8 dB	
5.11 Spurious emissions	\pm 2,0 dB for UE and coexistence bands for results > -60 dBm	
	\pm 3,0 dB for results < -60 dBm	
	Outside above: f≤2.2GHz: ± 1.5 dB 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB f > 4 GHz: ±4.0 dB	
5.12 Transmit Intermodulation	± 2.2 dB	CW Interferer error is 0.7 dB for the UE power RSS with 0.7 dB for CW setting = 1.0 dB Measurement error of intermod product is 0.7 dB for UE power RSS with 0.7 dB for relative = 1.0 dB Interferer has an effect of 2 times on the intermod product so overall test uncertainty is 2*1.0 RSS with 1.0 = 2.2 dB. Apply half any excess test system uncertainty to increase the interferer level
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	
5.13.2 Transmit modulation: peak code domain error	±1.0dB	

F.1.3 Measurement of receiver

Clause	Maximum Test System Uncertainty	Derivation of Test System
		Uncertainty
6.2 Reference sensitivity level	± 0.7 dB	
6.3 maximum input level:	± 0.7 dB	The critical parameter is the overall signal level and not the -19 dB DPCH_Ec/lor ratio. 0.7 dB absolute error due to signal measurement DPCH_Ec/lor ratio error is <0.1 dB but is not important so is ignored
6.4 Adjacent channel selectivity	± 1.1 dB	Overall system uncertainty comprises three quantities: 1. Wanted signal level error 2. Interferer signal level error 3. Additional impact of interferer ACLR Items 1 and 2 are assumed to be uncorrelated so can be root sum squared to provide the ratio error of the two signals. Assume for simplicity this ratio error is linearly added to the interferer ACLR. Test System uncertainty = SQRT (wanted_level_error ² + interferer_level_error ²) + ACLR effect. The ACLR effect is calculated by:(Formula to follow) (E.g. ACLR at 5 MHz of 51 dB gives additional error of .0765 dB. ACLR of 48 gives error of -0 15 dB.)
6.5 Blocking characteristics	System error with f <15 MHz offset: \pm 1.4 dB f >= 15 MHz offset and f <2 2 GHz + [1 0]	Using ± 0.7 dB for signal and interferer as currently defined and 68 dB ACLR @ 10 MHz.
	dB 2.2 GHz < f \leq 4 GHz: ±[1.7] dB f > 4 GHz: ±[3.1] dB	
6.6 Spurious Response	$f \le 2.2 \text{ GHz}: \pm 1.0 \text{ dB}$ 2.2 GHz < f ≤ 4 GHz: $\pm 1.7 \text{ dB}$ f > 4 GHz: $\pm 3.1 \text{ dB}$	

Table F.1.3: Maximum Test System Uncertainty for receiver tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
6.7 Intermodulation Characteristics	±1.3 dB	Similar issues to 7.4 ACS test. ETR028 says impact f the closer signal is twice that of the far signal. If both signals drop 1 dB, intermod product drops 2 dB. Formula = $\sqrt{(2 \cdot CW_{level} - error)^2 + (mod_{level} - error)^2}$ (Using CW interferer ±0.5 dB, modulated interferer ±0.5 dB, wanted signal ±0.7 dB) 1.3 dB! Broadband noise/ACLR not considered but may have impact.
6.8 Spurious emissions	\pm 3.0 dB for UE receive band (-78 dBm) Outside above: f≤2.2GHz: \pm 2.0 dB (-57 dBm) 2.2 GHz < f ≤ 4 GHz: \pm 2.0 dB (-47 dBm) f > 4 GHz: \pm 4.0 dB (-47 dBm)	

F.1.4 Performance requirement

Clause	Maximum Test Syster	n Uncertainty	Derivation of Test System
			Uncertainty
7.2 Demodulation in Static Propagation Condition	\hat{I}_{or}/I_{oc}	±0.3 dB	0.1 dB uncertainty in DPCH_Ec ratio
		±1.0	0.3 dB uncertainty in \hat{I}_{or}/I_{oc}
	DPCH E		based on power meter
	$\frac{I = I = I = -c}{I_{or}}$	±0.1 dB	combiner
			Overall error is the sum of the \hat{t}
			P_{or}/T_{oc} ratio error and the DPCH Ec/lor ratio but is not
			RSS for simplicity. The
			loc is not important for any
			tests in clause 7 but is specified as 1.0 dB.
7.3 Demodulation of DCH in multipath	\hat{I}_{or}/I_{oc}	±0.56 dB	Worst case gain uncertainty
Fading Propagation conditions	I _{oc}	±1.0	calibrated static profile is ± 0.5
	dB DPCH E		dB In addition the same ±0.3 dB
	$\frac{IIOII - I_c}{I_{or}}$	±0.1 dB	\hat{I}_{or}/I_{oc} ratio error as 7.2.
			These are uncorrelated so can
			Overall error in \hat{I}_{or}/I_{oc} is (0.5^2)
			$+0.3^{2})^{0.5} = 0.6 \text{ dB}$
7.4 Demodulation of DCH in Moving Propagation conditions	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
	I _{oc} dB	±1.0	
	$DPCH _ E_c$	+0.1 dB	
	I _{or}	±0.1 uD	
7.5 Demodulation of DCH in Birth-Death Propagation conditions	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
		±1.0	
	$DPCH E_c$		
	I_{or}	±0.1 dB	
7.6.1 Demodulation of DCH in open loop	\hat{I}_{or}/I_{oc}	±0.8 dB	Worst case gain uncertainty due to the fader from the
		±1.0	calibrated static profile is ± 0.5
	ab DPCH E		dB per output In addition the same ±0.3 dB
	$\frac{I_{or}}{I_{or}}$	±0.1 dB	\hat{I}_{or}/I_{oc} ratio error as 7.2.
			These are uncorrelated so can be RSS.
			Overall error in \hat{I}_{or}/I_{oc} is (0.5 ²
			$+0.5^{2}+0.3^{2})^{0.5}=0.768$ dB.

Table F.1.4: Maximum Test System Uncertainty for Performance Requirements

Clause	Maximum Te	est System Uncertainty	Derivation of Test System Uncertainty
7.6.2 Demodulation of DCH in closed	\hat{I}_{or}/I_{oc}	±0.8 dB	Same as 7.6.1
loop Transmit diversity mode	Inc	±1.0	
	dB		
	$DPCH _E_c$	+0.1 dP	
	I _{or}	±0.1 ub	
7.6.3, Demodulation of DCH in site	\hat{I}_{ar}/I_{aa}	±0.8 dB	Same as 7.6.1
selection diversity Transmission power	I	+1.0	
control mode	dB	21.0	
	$DPCH E_c$		
	I_{or}	±0.1 dB	
7.7.1 Demodulation in inter-cell soft	$\hat{I}_{\mu\nu}/I_{\mu\nu}$	±0.8 dB	Same as 7.6.1
Handover	I	+1 0	
	dB	21.0	
	$DPCH _ E_c$		
	$\frac{I_{or}}{I_{or}}$	±0.1 dB	
7.7.2 Combining of TPC commands Test	lor1,lor2	±1.0 dB	Test is looking for changes in
1	<u>DPCH_E_c</u>	+0.1 dB	power - need to allow for
	I _{or}	±0.1 dD	relaxation in criteria for power
			dB
7.7.2 Combining of TPC commands Test	\hat{I}_{or}/I_{oc}	±0.8 dB	Same as 7.6.1
2	I _{ac}	±1.0	
	dB		
	$DPCH _ E_c$		
	I _{or}	±0.1 UD	
7.8.1 Power control in downlink constant	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
DLER larger	I _{oc}	±1.0	
	dB		
	$DPCH _ E_c$	+0.1 dB	
	I _{or}	10.1 GD	
7.8.2, Power control in downlink initial	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
convergence	I _{oc}	±1.0	
	dB		
	<u>DPCH_E_c</u>	+0.1 dB	
	I _{or}	10.11 00	
7.8.3, Power control in downlink: wind up	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
enects	I _{oc}	±1.0	
	dB		
	$\underline{DPCH _ E_c}$	±0.1 dB	
	I _{or}		
7.9 Downlink compressed mode	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
	I _{oc}	±1.0	
	dB		
	$\frac{DPCH _ E_c}{I}$	±0.1 dB	
	I _{or}		

, ,	Uncertainty
\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 7.2
<i>I_{oc}</i> ±1.0	
$\frac{DPCH_E_c}{I_{or}}$ ±0.1 dB	
î /r	Same as 7.3
I_{or}/I_{oc} ±0.6 dB	Game as 7.5
I_{oc} ±1.0	
$\frac{DPCH_E_c}{I_{or}}$ ±0.1 dB	
Î _{or} I _{oc} IB DI	$\frac{I_{or}}{I_{oc}} \pm 0.6 \text{ dB} \pm 1.0$ $\frac{PCH - E_c}{I_{or}} \pm 0.1 \text{ dB}$

F.1.5 Requirements for support of RRM

Clause	Maximum Test System Uncertainty	Derivation of Test System
8.2 Idle Mode Tasks		
8.2.2 Cell Re-Selection		
8.2.2.1 Scenario 1: Single carrier case	\hat{I}_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB	0.1 dB uncertainty in CPICH_Ec ratio
	$\frac{CPICH_E_c}{I_{or}} = \pm 0.1 \text{ dB}$	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner
		The absolute error of the AWGN is specified as 1.0 dB.
8.2.2.2 Scenario 2: Multi carrier case	\hat{I}_{or}/I_{oc} ±0.3 dB	0.1 dB uncertainty in
	1.0 dB	CPICH_Ec ratio
		0.3 dB uncertainty in I_{or}/I_{oc}
	I_{oc1}/I_{oc2} ±0.3 dB	based on power meter
	$\frac{CPICH_E_c}{I}$ ±0.1 dB	measurement after the combiner
	l or	0.3 dB uncertainty in loc1/loc2 based on power meter measurement after the combiner
		Overall error for the CPICH_Ec/lo is the sum of the \hat{I}_{or}/I_{oc} ratio error and the CPICH_Ec/lor ratio.
		The absolute error of the AWGN is specified as 1.0 dB.
8.2.3 UTRAN to GSM Cell Re-Selection		
8.2.3.1 Scenario 1: Both UTRA and GSM	\hat{I}_{or}/I_{oc} ±0.3 dB	0.1 dB uncertainty in
level changed	$I_{oc}/RXLEV$ ±0.3 dB	CPICH_EC ratio
	<i>I</i> _{ac} ±1.0 dB	0.2 dB upcontainty in \hat{I} /I
	RXLEV ±1.0 dB	0.3 dB uncertainty in I_{or}/I_{oc}
		based on power meter
	$CPICH _E_c$	combiner
	= ±0.1 dB	
	or	loc/RXLEV based on power meter measurement after the combiner
		The absolute error of the AWGN is specified as 1.0 dB.
		RXLEV is specified as 1.0 dB.

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test S	ystem Uncertainty	Derivation of Test System Uncertainty
8.2.3.2 Scenario 2: Only UTRA level	$\hat{I}_{}/I_{}$	±0.3 dB	Same as 8.2.3.1
changed	$I_{oc}/RXLEV$	±0.3 dB	
	I	+1 0 dB	
		±1.0 dB	
		±1.0 UD	
	$\frac{CPICH_E_c}{I_{or}}$	±0.1 dB	
8.2.4 FDD/TDD cell re-selection	\hat{I}_{or}/I_{oc}	±0.3 dB	Same as 8.2.2.2
	I _{oc}	±1.0 dB	
	I_{oc1}/I_{oc2}	±0.3 dB	
	$\frac{CPICH_E_c}{I_{or}}$	±0.1 dB	
8.3 UTRAN Connected Mode Mobility			
8.3.1 FDD/FDD Soft Handover			No test case
8.3.2 FDD/FDD Hard Handover	TBD		
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
8.3.5 Cell Re-selection in CELL_FACH			
8.3.5.1 One frequency present in the	Same as 8.2.2.1		Same as 8.2.2.1
8.3.5.2 Two frequencies present in the	Same as 8.2.2.2		Same as 8.2.2.2
neighbour list			
8.3.6 Cell Re-selection in CELL_PCH	0		0
neighbour list	Same as 8.2.2.1		Same as 8.2.2.1
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2		Same as 8.2.2.2
8.3.7 Cell Re-selection in URA_PCH			
8.3.7.1 One frequency present in the	Same as 8.2.2.1		Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2		Same as 8.2.2.2
8.4 RRC Connection Control	TBD		
8.4.1 RRC Re-establishment delay			

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.4.2 Random Access	Settings.	0.1 dB uncertainty in AICH_Ec
	$\frac{\hat{l}}{\hat{l}}$ +0.3 dB	ratio
		0.3 dB uncertainty in \hat{I} /I
	I_{OC} ±1.0 dB	
	$AICH _E_c$	based on power meter
	$\frac{1}{I_{or}}$ ±0.1 dB	combiner
		Overall error is the sum of the
		I_{or}/I_{oc} ratio error and the
		AICH_Ec/lor ratio.
		The absolute error of the AWGN is specified as 1.0 dB
	Measurements:	Power difference:
	Power difference. ± 1dB	Assume symmetric meas error
	Maximum Power: same as 5.5.2	±1.0 dB comprising RSS of: -
		0.7 dB downlink error plus -0.7 dB meas error.
		Maximum Power:
		Assume asymmetric meas
		error -1.0 dB / 0.7 dB
		comprising RSS of: -0.7 dB
		downlink error plus -0.7 dB
		upper limit
8.5 Timing and Signalling Characteristics		
8.5.1 UE Transmit Timing	I +1.0 dB	0.1 dB uncertainty in
		DPCH_Ec ratio
	I_{or1}/I_{or2} ±0.3 dB	
	DPCH E	0.3 dB uncertainty in for f/for2
	$\frac{DT OT - D_c}{4} = \pm 0.1 \text{ dB}$	measurement after the
	I _{or}	combiner
		The absolute error of the lor is specified as 1.0 dB.
8.6 UE Measurements Procedures		
8.6.1 FDD intra frequency measurements		
8.6.1.1 Event triggered reporting in	TBD	
AWGN propagation conditions		
8.6.1.2 Event triggered reporting of	IBD	
propagation condition		
8.6.1.3 Event triggered reporting of two	TBD	
detectable neighbours in AWGN		
propagation condition		
8.6.1.4 Correct reporting of neighbours in	TBD	
fading propagation condition		
8.6.2 FDD inter frequency measurements		
8.6.2.1 Correct reporting of neighbours in	ТВО	
Avv GN propagation condition		
Fading propagation condition		
8.6.3 TDD measurements	TBD	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD	
8.7 Measurements Performance		
Requirements		
8.7.1 CPICH RSCP		0 0004
8.7.1.1 Intra frequency measurements	I_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.1
accuracy	<i>I_{oc}</i> ±1.0 dB	
	$\frac{CPICH_E_c}{I}$ ±0.1 dB	
8712 Inter frequency measurement	\hat{I} / I \hat{I} \hat{I} \hat{I}	Same as 8 2 2 2
accuracy	I_{or}/I_{oc} ±0.3 dB	Suno us 0.2.2.2
	I_{oc} ±1.0 dB	
	I_{oc1}/I_{oc2} ±0.3 dB	
	$\frac{CPICH_E_c}{I_{c}}$ ±0.1 dB	
872 CPICH Ec/lo	Or	
8.7.24.1 Intra frequency measurements	\hat{I} /I ±0.3 dB	Same as 8.2.2.1
accuracy	I_{ac} ±1.0 dB	
	$\frac{CPICH _E_c}{\pm 0.1 \text{ dB}}$	
	I _{or}	
8.7.24.2 Inter frequency measurement	\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.2
accuracy	<i>I_{oc}</i> ±1.0 dB	
	I_{oc1}/I_{oc2} ±0.3 dB	
	$\frac{CPICH_E_c}{I_{or}} = \pm 0.1 \text{ dB}$	
8.7.3A UTRA Carrier RSSI	\hat{I}_{or}/I_{oc} ±0.3 dB	0.3 dB uncertainty in \hat{I}_{ar}/I_{ac}
	<i>I</i> _{oc} ±1.0 dB	based on power meter
	I_{oc1}/I_{oc2} ±0.3 dB	measurement after the combiner
		0.3 dB uncertainty in loc1/loc2 based on power meter measurement after the combiner
		The absolute error of the AWGN is specified as 1.0 dB
8.7.3B Transport channel BLER	TBD	
8.7.3C UE Transmitted power	Mean power measurement ±0,7 dB	Downlink parameters are unimportant.
8.7.4 SFN-CFN observed time difference	TBD	
8.7.5 SFN-SFN observed time difference	TBD	

Clause	Maximum Test Syste	em Uncertainty	Derivation of Test System Uncertainty
8.7.6 UE Rx-Tx time difference	\hat{I}_{or}/I_{oc} I_{oc} Rx-Tx Timing Accuracy [±0.5 chip]	±0.3 dB ±1.0 dB	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB.
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.1 Transmitter

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: $DPCCH _ E_c$	
5.4.4 Out-of-synchronisation handling of	0 ms
output power: transmit ON/OFF time	0 113
5.5.1 Transmit OFF power	1 0 dB
5.5.2 Transmit ON/OFE time mask	On power $\pm 0.7 \text{dB} / \pm 1.0 \text{dB}$
(dynamic case)	
	Off power TT [] dB
5.6 Change of TFC: power control step	0.3 dB
size	
5.7 Power setting in uplink compressed	See subset of 5.4.2
mode:- UE output power	
5.8 Occupied Bandwidth	0 kHz
5.9 Spectrum emission mask	1.5 dB (0 dB for additional requirements for Band II)
5.10 ACLR	0.8 dB for ratio
	0.0 dB for absolute power
5.11 Spurious emissions	0 dB
5.12 Transmit Intermodulation	0 dB
5.13.1 Transmit modulation: EVM	0%
5.13.2 Transmit modulation: peak code	1.0 dB
domain error	

Table F.2.1: Test Tolerances for transmitter tests.

F.2.2 Receiver

Table F.2.2: Test Tolerances for receiver tests.

Clause	Test Tolerance
6.2 Reference sensitivity level	0.7 dB
6.3 Maximum input level:	0.7 dB
6.4 Adjacent channel selectivity	0 dB
6.5 Blocking characteristics	0 dB
6.6 Spurious Response	0 dB
6.7 Intermodulation Characteristics	0 dB
6.8 Spurious emissions	0 dB

F.2.3 Performance requirements

Clause	Test Tolerance
7.2 Demodulation in Static Propagation	0.3 dB for \hat{I}_{ar}/I_{ac}
Condition	0.1 dB for DPCH_Ec/lor
7.3 Demodulation of DCH in multipath	0.6 dB for \hat{I}_{ar}/I_{ac}
Fading Propagation conditions	0.1 dB for DPCH_Ec/lor
7.4 Demodulation of DCH in Moving	0.6 dB for \hat{I}_{or}/I_{oc}
Propagation conditions	0.1 dB for DPCH_Ec/lor
7.5 Demodulation of DCH in Birth-Death	0.6 dB for \hat{I}_{or}/I_{oc}
Propagation conditions	0.1 dB for DPCH_Ec/lor
7.6.1 Demodulation of DCH in open loop	0.8 dB for \hat{I}_{or}/I_{oc}
I ransmit diversity mode	0.1 dB for DPCH_Ec/lor
7.6.2 Demodulation of DCH in closed	0.8 dB for \hat{I}_{or}/I_{oc}
loop Transmit diversity mode	0.1 dB for DPCH_Ec/lor
7.6.3, Demodulation of DCH in site	0.8 dB for \hat{I}_{ar}/I_{ac}
selection diversity Transmission power control mode	0.1 dB for DPCH_Ec/lor
7.7.1 Demodulation in inter-cell soft	0.8 dB for \hat{I}_{or}/I_{oc}
Handover conditions	0.1 dB for DPCH_Ec/lor
7.7.2 Combining of TPC commands Test	0 dB for lor1, lor2
1 770 Combining of TDC commondo Toot	0.1 dB for DPCH_Ec/lor
2	0.8 dB for I_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.8.1 Power control in downlink constant	0.6 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.8.2, Power control in downlink initial	0.6 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.8.3, Power control in downlink: wind up	0.6 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.9 Downlink compressed mode	0.6 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.10 Blind transport format detection	0.3 dB for \hat{I}_{or}/I_{oc}
1 ests 1, 2, 3	0.1 dB for DPCH_Ec/lor
7.10 Blind transport format detection	0.6 dB for \hat{I}_{or}/I_{oc}
1 ests 4, 5, 6	0.1 dB for DPCH_Ec/lor

Table F.2.3: Test Tolerances for Performance Requirements.

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.2 Idle Mode Tasks	
8.2.2 Cell Re-Selection	
8.2.2.1 Scenario 1: Single carrier case	0.3 dB for $\hat{I}_{\perp}/I_{\perp}$
	0.1 dB for CPICH Ec/lor
8.2.2.2 Scenario 2: Multi carrier case	$0.2 \text{ dB for } \hat{I} / I$
	0.5 dB for P_{or}/P_{oc}
8.2.3 LITRAN to GSM Cell Re-Selection	0.1 dB for CPICH_EC/lor
8.2.3 1 Scenario 1: Both LITRA and GSM	^ /
level changed	0.3 dB for I_{or}/I_{oc}
5	0.1 dB for CPICH_Ec/lor
	0.3 dB for loc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level	0.3 dB for \hat{I}_{or}/I_{oc}
Changed	0.1 dB for CPICH Ec/lor
	0.3 dB for loc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for \hat{I}_{ac}/I_{ac}
	0.1 dB for CPICH Ec/lor
	0.3 dB for loc1/loc2
8.3 UTRAN Connected Mode Mobility	
8.3.1 FDD/FDD Soft Handover	
8.3.2 FDD/FDD Hard Handover	TBD
8.3.3 FDD/TDD Handover	TBD
UTRAN FDD to GSM	
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the	0.3 dB for \hat{I} /I
neighbour list	0.1 dB for CPICH Ec/lor
8.3.5.2 Two frequencies present in the	
neighbour list	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.3.6 Cell Re-selection in CELL_PCH	A (
8.3.6.1 One frequency present in the	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.3.6.2 Two frequencies present in the	$0.2 dP for \hat{I} / I$
neighbour list	0.3 dB for I_{or}/I_{oc}
9.2.7 Coll Do poloction in LIDA DOLL	0.1 dB for CPICH_Ec/lor
8.3.7 Cell Re-selection in URA_PCH	^ /
neighbour list	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.3.7.2 Two frequencies present in the	0.3 dB for \hat{I} /I
neighbour list	0.1 dB for CPICH Ec/lor
84 RRC Connection Control	
8.4.1 RRC Re-establishment delay	TBD

Clause	Test Tolerance
8.4.2 Random Access	Settings:
	0.3 dB for \hat{I}_{ar}/I_{ac}
	0.1 dB for AICH_Ec/lor
	Measurements:
	Power difference: ± 1dB
	Maximum Power: -1dB / +0.7dB
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD Intra frequency measurements	
AWGN propagation conditions	
8.6.1.2 Event triagered reporting of	TBD
multiple neighbours in AWGN	
propagation condition	
8.6.1.3 Event triggered reporting of two	TBD
detectable neighbours in AWGN	
propagation condition	TOD
8.6.1.4 Correct reporting of neighbours in	IBD
8.6.2 EDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in	TBD
AWGN propagation condition	
8.6.2.2 Correct reporting of neighbours in	TBD
Fading propagation condition	
8.6.3 TDD measurements	
8.6.3.1Correct reporting of TDD	TBD
neighbours in AWGN propagation	
8.7 Measurements Performance	IBD
8 7 1 CPICH RSCP	
8.7.1.1 Intra frequency measurements	$\hat{\mathbf{r}}$
accuracy	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
	1.0 dB for loc
8.7.1.2 Inter frequency measurement accuracy	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
	0.3 dB for loc1/loc2
	1.0 dB for loc
8.7.2 CPICH EC/IO	
accuracy	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.7.24.2 Inter frequency measurement	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for CPICH Ec/lor
8.7.3A UTRA Carrier RSSI	\hat{I}
	U.3 dB for I_{or}/I_{oc}
	1.0 dB for loc
8.7.3B Transport channel BLER	
8.7.3C UE Transmitted power	test system
8.7.4 SFN-CFN observed time difference	
8.7.5 SFN-SFN observed time difference	

|

Clause	Test Tolerance
8.7.6 UE Rx-Tx time difference	0.3 dB for \hat{I}_{or}/I_{oc}
	1.0 dB for loc [0.5 chip] for Rx-Tx Timing Accuracy
8.7.7 Observed time difference to GSM cell	TBD
8.7.8 P-CCPCH RSCP	TBD

F.3 Interpretation of measurement results

The measurement results returned by the Test System are compared – without any modification – against the Test Requirements as defined by the shared risk principle.

The Shared Risk principle is defined in ETR 273-1-2 clause 6.5.

The actual measurement uncertainty of the Test System for the measurement of each parameter shall be included in the test report.

The recorded value for the Test System uncertainty shall be, for each measurement, equal to or lower than the appropriate figure in clause F.1 of the present document.

If the Test System for a test is known to have a measurement uncertainty greater than that specified in clause F.1, it is still permitted to use this apparatus provided that an adjustment is made value as follows. Any additional uncertainty in the Test System over and above that specified in clause F.1 shall be used to tighten the Test Requirement – making the test harder to pass. (For some tests e.g. receiver tests, this may require modification of stimulus signals). This procedure will ensure that a Test System not compliant with clause F.1does not increase the chance of passing a device under test where that device would otherwise have failed the test if a Test System compliant with clause F.1 had been used.

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 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = $\pm 1/-3$ dB Power class 2 (27 dBm) Tolerance = $\pm 1/-3$ dB Power class 3 (24 dBm) Tolerance = $\pm 1/-3$ dB Power class 4 (21 dBm) Tolerance = ± 2 dB	0.7 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For power classes 1-3: Upper Tolerance limit = +1.7 dB Lower Tolerance limit = -3.7 dB For power class 4: Upper Tolerance limit = +2.7 dB Lower Tolerance limit = -2.7 dB
5.3 Frequency Error	The UE modulated carrier frequency shall be accurate to within ± 0.1 ppm compared to the carrier frequency received from the Node B.	The UE modulated carrier requency shall be accurate to vithin ±0.1 ppm compared to the arrier frequency received from ne Node B.	
5.4.1 Open loop power control in the uplink	Open loop power control tolerance ±9 dB (Normal) Open loop power control tolerance ±12 dB (Normal)	1.0 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For Normal conditions: Upper Tolerance limit = +10 dB Lower Tolerance limit = -10 dB For Extreme conditions: Upper Tolerance limit = +13 dB Lower Tolerance limit = -13 dB
5.4.2 Inner loop power control in uplink	See table 5.4.2.1 and 5,4,2,2	0.25dB 0.15 dB 0.2 dB 0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT
5.4.3 Minimum Output Power	UE minimum transmit power shall be less than –50 dBm	1.0 dB	Formula: UE minimum transmit power + TT UE minimum transmit power = -49 dBm

Table F.4.1: Derivation of Test Requirements (Transmitter tests)

Test	Minimum Requirement in TS 25.101	Test Tolerance	Test Requirement in TS 34.121
5.4.4 Out-of- synchronisation handling of output power:	$\frac{DPCCH_E_c}{I_{or}} \text{ levels}$ AB: -22 dB BD: -28 dB DE: -24 dB EF: -18 dB transmit ON/OFF time 200ms $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or} / I_{oc} = -1 \text{ dB}$	(TT) 0.4 dB for <u>DPCCH_E</u> I _{or} 0 ms for timing measurem ent	Formulas: Ratio between A and B + TT Ratio between B and D – TT Ratio between D and E – TT Ratio between E and F + TT transmit ON/OFF time + TT timing $\frac{DPDCH_{-}E_{c}}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or} / I_{oc} = -1 \text{ dB}$ $\frac{DPCCH_{-}E_{c}}{I_{or}} \text{ levels:}$ $\frac{I_{or}}{AB: -21.6 \text{ dB}}$ $DE: -28.4 \text{ dB}$ $DE: -24.4 \text{ dB}$ $EF: -17.6 \text{ dB}$ transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = -55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = I IdBm

5.6 Change of TFC: power control step size TFC step size = +5 to +9 dB 0.3 dB Formula: Upper Tolerance limit + TT Lower 5.7 Power setting in uplink compressed mode Various TBD Upper limit = -4.7 dB 5.7 Power setting in uplink compressed mode Various TBD TBD 5.8 Occupied Bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be -50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Minimum requirement + TT Lower limit + TT Power Classes 3 and 4: UE c	Test	Minimum Require 25.101	ment in TS	Test Tolerance (TT)	Test Requirement in	TS 34.121
power control step size Lower 5.7 Power setting in uplink compressed mode Various TBD (Subset of 5.4.2) TBD 5.8 Occupied Bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Norupite of 3.42 Mcps. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the ACLR shall be higher than the ACLR limit: 33 dB 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 33 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement semission 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement s table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirement nt SkHz ≤ f < 1GHz	5.6 Change of TFC:	TFC step size = +5	to +9 dB	0.3 dB	Formula: Upper Tolerance	e limit + TT
5.7 Power setting in uplink compressed mode Various TBD (Subset of 5.4.2) TBD (Subset of 5.4.2) TBD 5.8 Occupied Bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in 73.84 Mcps. 1.5 dB Formula: Minimum requirement + TT Lower limit + TT 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement 19 kHz ≤ f < 150	power control step size				Tolerance limit – TT	Lower
5.7 Power setting in uplink compressed mode Various TBD TBD 5.8 Occupied Bandwidth The occupied channel beandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth : + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. 1.5 dB Formula: Minimum requirement entries in TS25.101 Table 6.10. 5.10 Adjacent Channel Leakage Power Ratio (ACLR shall be higher than -50 dBm the the ACLR shall be higher than the values specified below. 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -50 MHz, ACLR limit: 33 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: MCLR limit - TT S.11 Spurious Frequency Band Minimum Requirement + TT Add zero to all the values of Minimum Requirement + TT Add zero to all the values of Minimum Requirement + 0 MHz or -10 MHz, ACLR limit: 42.2 dB Formula: ACLR limit - TT 5.11 Spurious Frequency Band Minimum Requirement + TT Add zero to all the values of Minimum Requirement + TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b. Formula: Minimum Requirement + TT Add zero to all the values of Minimum Requirement + 0 Hz ≤ f < 16Hz					Upper limit = -4.7 dB	
toping essed The occupied channel bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Minimum requirement + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirement nt	5.7 Power setting in	Various		TBD (Subset of	TBD	
5.8 Occupied Bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 KHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Minimum requirement + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Zero test tolerance is applied for Additional requirements. The lower limit shall be –4.50 dBm / 3.84 MHz or which ever is higher. 0.0 dB Formula: AcLR limit - TT Hower limit shall be –4.50 dBm / 3.84 MHz or which ever is higher. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32.2 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt Minimum Requirement nt Frequency Band Minimum Requirement nt Frequency Band Minimum Requirement nt Minimum Requirement nt Frequency Band Minimum Requirement nt Minimum Requirement nt	mode			(Subset of 5.4.2)		
5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Minimum requirement + TT Lower limit + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Lower limit + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. 2 ero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be –48.5 dBm / 3.84 MHz or which ever is higher. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: Absolute power threshold + TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, arc -10 MHz, ACLR limit: 43 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirement nt 9 kHz ≤ f < 150	5.8 Occupied Bandwidth	The occupied chann bandwidth shall be I MHz based on a chi	nel ess than 5 p rate of	0 kHz	Formula: occupied channel	bandwidth: +
maskTS25.101 Table 6.10. The lower limit shall be -50 dBm / 3.84 MHz or which ever is higher.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 -50 dBm (Add 1.5 to Minimum requirements for Band II due to FCC regulatory requirements. The lower limit shall be -48.5 dBm / 3.84 MHz or which ever is higher.5.10 Adjacent Channel Leakage Power Ratio (ACLR)If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT9 Wer Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dBFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.5.11 Spurious EmissionsFrequency Band Ninimum Requirement ntMinimum Requirement ntFrequency Band Minimum Requirement nt9 KHz ≤ f < 150	5.9 Spectrum emission	Minimum requireme	nt defined in	1.5 dB	Formula: Minimum requirer	n = 5.0 MHz ment + TT
Ine lower limit shall be -50 dBm (3.84 MHz or which ever is higher.Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Zero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be -48.5 dBm / 3.84 MHz or which ever is higher.5.10 Adjacent Channel Leakage Power Ratio (ACLR)If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT9 wer Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dB5.11 Spurious EmissionsFrequency Band Minimum RequirementFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.9 kHz ≤ f < 150	mask	TS25.101 Table 6.1	0.		Lower limit + TT	
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Additional requirements of band if due to FCC regulatory requirements. The lower limit shall be -48.5 dBm / 3.84 MHz or which ever is higher.5.10 Adjacent Channel Leakage Power Ratio (ACLR)If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT9.8 dBPower Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dB5.11 Spurious EmissionsFormula: ACLR limit: 43 dB0.8 dBFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requirement ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150		higher.			Zero test tolerance is applie	ed for
5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: Absolute power threshold + TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB 5.11 Spurious Emissions Formula: Minimum Requirements in table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirement nt 9 kHz ≤ f < 150					to FCC regulatory requirem	nents.
In the discent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT(ACLR) $ACLR$ shall be higher than the values specified below.0.0 dBFormula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB0.8 dBFormula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dB5.11 Spurious EmissionsFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requirement ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150					The lower limit shall be -48	3.5 dBm / 3.84
Leakage Power Ratio (ACLR)greater than -50 dBm then the ACLR shall be higher than the values specified below.0.8 dBFormula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dB5.11 Spurious EmissionsFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150	5.10 Adjacent Channel	If the adjacent chan	nel power is	0.0 dB	Formula: Absolute power th	nreshold + TT
$\frac{ V(CERV) }{ V(CERV) } = \frac{ V(CERV) }{ V($	Leakage Power Ratio	greater than –50 dB	m then the			
Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB $0.8 dB$ Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB5.11 Spurious Emissions 5.11 Spurious Frequency Band $RequirementntFormula: Minimum Requirement+ TTAdd zero to all the values of MinimumRequirements in table 5.11.1a and5.11.1b.5.11 \text{ Spurious}EmissionsFrequency BandRequirementntMinimumRequirementntFrequency BandRequirementnt$	(AULK)	values specified bel	ow.			
OE channel +5 MHz of -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dBPower 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 dB5.11 Spurious EmissionsFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150		Power Classes 3 an	d 4:	0.8 dB	Formula: ACLR limit - TT	
UE channel +10 MHz or -10 MHz, ACLR limit: 43 dBlimit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB5.11 Spurious EmissionsFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150		ACLR limit: 33 dB	. 0i -ɔ ivi⊓z,		UE channel +5 MHz or -5 N	/Hz, ACLR
MHZ, ACLR limit: 43 dB OE channel + 10 MHZ of -10 MHZ, ACLR S.11 Spurious Formula: Minimum Requirement+ TT Emissions Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirement nt 9 kHz ≤ f < 150		UE channel +10 MH	lz or -10		limit: 32.2 dB	
5.11 Spurious Emissions Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirement nt 9 kHz \leq f < 150		MHZ, ACLR limit: 43	3 dB		limit: 42.2 dB	U MHZ, ACLR
Add Zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement nt9 kHz \leq f < 150	5.11 Spurious				Formula: Minimum Require	ement+ TT
5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement9 kHz \leq f < 150	LIIISSIOIIS				Requirements in table 5.11	.1a and
Prequency bandInfinitianPrequency bandInfinitianRequireme ntRequireme ntRequireme $9 \text{ kHz} \le f < 150$ -36dBm 0 dB $9 \text{ kHz} \le f < 1 \text{ GHz}$ -36dBm		Fraguanay Band	Minimum		5.11.1b.	Minimum
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Frequency Banu	Requireme		Flequency Banu	Requirement
		0 kHz < f < 150	nt _36dBm	0 dB	9kHz < f < 1GHz	_36dBm
		kHz	/1kHz	0 QD		/1kHz
150 kHz ≤ f < 30 -36 dBm 0 dB 150 kHz ≤ f < 30 MHz -36 dBm (40kHz		150 kHz ≤ f < 30	-36dBm	0 dB	150 kHz ≤ f < 30 MHz	-36dBm
$\frac{MHZ}{1000} = \frac{1000}{-36} = \frac{1000}{100} = \frac{1000}{-36} = 10$		$\frac{\text{MHZ}}{30 \text{ MHz} \le f < 1000}$	/10KHZ	0 dB	30 MHz < f < 1000 MHz	/10KHZ _36dBm
MHz /100kHz 30 MHz 30 MHz 4000		MHz	/100kHz	0 GD		/100kHz
1 GHz ≤ f < 12.7530dBm 0 dB 1 GHz ≤ f < 2.2 GHz30dBm		1 GHz ≤ f < 12.75	–30dBm	0 dB	1 GHz ≤ f < 2.2 GHz	-30dBm
GHz /1MHz /1MHz		GHz	/1MHz			/1MHz
$0 \text{ dB} \qquad 2.2 \text{ GHz} \leq f < 4 \text{ GHz} \qquad -30 \text{dBm}$				0 dB	2.2 GHz ≤ f < 4 GHz	–30dBm /1M⊔-7
0 dB 4 GHz \leq f < 12.75 GHz -30dBm				0 dB	4 GHz ≤ f < 12.75 GHz	-30dBm
/1MHz						/1MHz
1893.5 MHZ < t < −41dBm 0 dB 1893.5 MHZ < t < 1919.6 −41dBm 1919.6 MHz /300kHz MHz /300kHz		1893.5 MHz < t < 1919.6 MHz	–41dBm /300kHz	U dB	1893.5 MHz < t < 1919.6 MHz	–41dBm /300kHz
925 MHz \le f \le 935 -67dBm 0 dB 925 MHz \le f \le 935 MHz -67dBm (400) Hz		925 MHz ≤ f ≤ 935	-67dBm	0 dB	925 MHz \leq f \leq 935 MHz	-67dBm

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in [•]	TS 34.121
	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 leve Intermod Products limits re unchanged. CW interferer level = -40 df	el – TT/2 main 3c
5.13.1 Transmit modulation: EVM	The measured EVM shall not exceed 17.5%.		0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13.2 Transmit modulation: peak code domain error	The measured Peak code domain error shall not exceed -15 dB.		1.0 dB	Formula: Peak code domai Peak code domain error =	n error + TT -14 dB

Test	Minimum Requi 25.10	rement in TS 01	Test Tolerance (TT)	Test Requirement in	TS 34.121
6.2 Reference sensitivity level	Îor = -106.7 dBm / 3.84 MHz DPCH_Ec = -117 dBm / 3.84 MHz BER limit = 0.001		0.7 dB	Formula: Îor+ TT TT BER limit unchar	DPCH_Ec + ged
				lor = 3.84 MHz DPCH_Ec = -116.3 c	-106 dBm / IBm / 3.84 MHz
6.3 Maximum input level	-25 dBm lor -19 dBc DPCH_E	c/lor	0.7 dB	Formula: lor-TT lor = -25.7 dBm	
6.4 Adjacent Channel Selectivity	for = -92.7 dBm / 3.84 MHz DPCH_Ec = -103 dBm / 3.84 MHz loac (modulated) = -52 dBm/3.84 MHz BER limit = 0.001		0 dB	Formula: Îor unchanged DPCH_Ec uncha Ioac – TT BER limit unchar Ioac = -52 dBm/3.84 MHz	nged ged
6.5 Blocking Characteristics	See Table 6.5.3 and 6.5.4. in TS34.121 BER limit = 0.001		0 dB	Formula: I blocking (modulated) - TT (d I blocking (CW) - TT (dBm) BER limit unchanged	dBm/3.84MHz)
6.6 Spurious Response	Iblocking(CW) –44 dBm Fuw: Spurious response frequencies BER limit = 0.001		0 dB	Formula: I _{blocking} (CW) - T Fuw unchanged BER limit unchanged I _{blocking} (CW) = -44 dBm	Г (dBm)
6.7 Intermodulation Characteristics	louw1 (CW) -46 dBm louw2 (modulated) -46 dBm / 3.84 MHz Fuw1 (offset) 10 MHz Fuw2 (offset) 20 MHz lor = -103.7 dBm/3.84 MHz DPCH_Ec = -114 dBm/3.84 BER limit = 0.001		0 dB	Formula: Ior + TT DPCH_Ec + TT Iouw1 level unch Iouw2 level unch BER limit unchar	anged anged iged.
6.8 Spurious Emissions	\$			Formula: Maximum level - Add zero to all the values Level in table 6.8.1.	- TT of Maximum
	Frequency Band	Maximum level		Frequency Band	Maximum level
	9kHz ≤ f < 1GHz	-57dBm /100kHz	0 dB	9kHz ≤ f < 1GHz	-57dBm /100kHz
	1GHz ≤ f ≤ 12.75GHz	-47dBm /1MHz	0 dB	1GHz ≤ f ≤ 2.2GHz	-47dBm /1MHz

Table F.4.2: Derivation of Test Requirements (Receiver tests)

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in	TS 34.121
			0 dB	$2.2GHz < f \le 4GHz$	-47dBm /1MHz
			0 dB	4GHz < f ≤ 12.75GHz	-47dBm /1MHz
	1920MHz ≤ f ≤ 1980MHz	-60dBm /3.84MHz	0 dB	1920MHz ≤ f ≤ 1980MHz	-60dBm /3.84MHz
	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz	0 dB	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.2 Demodulation of DPCH in static conditions	$\frac{DPCH_E_c}{I_{or}} -5.5 \text{ to } -16.6 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.3 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$
			$\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}}$ -5.4 to -16.5 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 1-4	$\frac{DPCH_E_c}{I_{or}} -2.2 \text{ to } -15.0$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\underline{DPCH_E_c}$ I_{or} 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} + \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -2.1 \text{ to } -14.9 \text{ dB}$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 5-8	$\frac{DPCH_E_c}{I_{or}} -3.2 \text{ to } -7.7 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -3.1 \text{ to } -7.6 \text{ dB}$

Table F.4.3: Derivation of Test Requirements (Performance tests)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 9-12	$\frac{DPCH_E_c}{I_{or}} -4.4 \text{ to } -11.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_{-}E_{c}}{I_{or}} -4.3 \text{ to } -11.7 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 13-16	$\frac{DPCH_E_c}{I_{or}} -2.2 \text{ to } -15.0 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.6$ $\frac{DPCH_E_c}{I_{or}} -2.1 \text{ to } -14.9 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 17-20	$\frac{DPCH_E_c}{I_{or}} -1.4 \text{ to } -8.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -1.3 \text{ to } -8.7 \text{ dB}$
7.4 Demodulation of DPCH in moving propagation conditions	$\frac{DPCH_E_c}{I_{or}} -10.9 \text{ to } -14.5$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.4 \text{ dB}$ $\frac{DPCH_{-}E_{c}}{I_{or}} -10.8 \text{ to} -14.4 \text{ dB}:$

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.5 Demodulation of DPCH birth-death propagation conditions	$\frac{DPCH_E_c}{I_{or}} -8.7 \text{ to } -12.6 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.4 \text{ dB}$ $\frac{DPCH_{-}E_{c}}{I_{or}} -18.6 \text{ to } -12.5 \text{ dB}:$
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH_E_c}{I_{or}} -16.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 16.7 \text{ dB}:$
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH_E_c}{I_{or}} -18 \text{ to } -18.3 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 17.9 \text{ to } -18.2 \text{ dB}:$
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH_E_c}{I_{or}} -7.5 \text{ to } -9.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 0 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 0.8 \text{ to } -2.2 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -7.4 \text{ to } -9.1 \text{ dB}$
Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
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7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH_E_c}{I_{or}} -5.5 \text{ to } -15.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	0.1 dBfor $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	$\hat{I}_{or}/I_{oc} = \text{lor2/loc} = 6 \text{ to 0 dB}$	0.8 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = 6.8 \text{ to } 0.8 \text{ dB}$
			$\frac{DPCH_E_c}{I_{or}}$ -5.4 to -15.4 dB:
7.7.2 Combining of TPC commands Test 1	$\frac{DPCH_E_c}{I_{or}} \text{ -12 dB}$ Ior1 and Ior2 -60dBm	$0.1 \text{ dB} \\ \text{for} \\ \frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
		0dB for lor1 and lor2	$\frac{DPCH_E_c}{I_{or}} = -11.9 \text{ dB}:$ lor1 = -60dBm lor2 = -60dBm
			The absolute levels of lor1 and lor2 are not important to this test.
7.7.2 Combining of TPC commands Test 2	$\frac{DPCH_E_c}{I_{or}} - 12 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	$I_{oc} = -60 \text{ dBm}$	0.8 dB for	I_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 0 \text{ dB}$	\hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = 0.8 \text{ dB}$
			$\frac{DPCH_E_c}{I_{or}}$ -11,9 dB:
7.8.1 Power control in downlink constant BLER target	$\frac{DPCH_E_c}{I_{or}}$ -9 to -16 dB	$\begin{array}{c} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH}_{E_c} \end{array}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	$I_{oc} = -60 \text{ dBm}$	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 9$ to -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.6 to -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -8.9 to -15.9 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.8.2, Power control in downlink initial convergence	$\frac{DPCH_E_c}{I_{or}} -8.1 \text{ to } -18.9 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	$\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	<i>I_{oc}</i> unchanged
			\hat{I}_{or}/I_{oc} = -0.4 dB
			$\frac{DPCH_E_c}{I_{or}} -8.0 \text{ to } -18.8 \text{ dB:}$
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH_E_c}{I_{or}} -13.3 \text{ dB}$	$\begin{bmatrix} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH}_E_c \\ I \end{bmatrix}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	$\hat{I}_{oc} = -60 \text{ dBm}$ $\hat{I}_{or} / I_{oc} = 5 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I_{or}/I_{oc} = ratio + 11 I_{oc} unchanged
			\hat{I}_{or}/I_{oc} = 5.6 dB
			$\frac{DPCH_E_c}{I_{or}} \text{ -13.2 dB:}$
7.9 Downlink compressed mode	$\frac{DPCH_E_c}{I_{or}}$ Test 1 -14.6 dB Test 3 -15.2 dB $I_{oc} = -60$ dBm $\hat{I}_{or}/I_{oc} = 9$ dB	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$
			$\hat{I}_{or}/I_{oc} = 9.6 \text{ dB}$ $\frac{DPCH_E_c}{E_c}$
			T _{or} Test 1 -14.5 dB Test 3 -15.1 dB:
7.10 Blind transport format detection Tests 1, 2, 3	$\frac{DPCH_E_c}{I_{or}}$ -17.7 to -18.4 dB	$\begin{array}{c} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH}_{E_c} \end{array}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	$I_{oc} = -60 \text{ dBm}$	I_{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	\hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$
			$\frac{DPCH_E_c}{I_{or}}$ -17.6 to -18.3 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH_E_c}{I_{or}} -13.0 \text{ to } -13.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	$\begin{array}{c} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH_E_c} \\ I_{or} \end{array}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	\hat{I}_{or}/I_{oc} = -3 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = -2.4 dB
			$\frac{DPCH_{-}E_{c}}{I_{or}}$ -12.9 to -13.7 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks			
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ lor/loc = 7.3 dB Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ $\text{lor/loc} = \text{ratio} - \text{TT}$ $I_{oc} \text{ unchanged}$ $\text{lor/loc} = 7 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ lor/loc = 10.27 dB Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ loc unchanged $\text{lor/loc} = 10.57 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -9.9 \text{ dB}$
8.2.2.2 Scenario 2: Multi carrier case	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = -3.4 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = \text{ratio} - \text{TT}$ Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH _ E_c}{I_{or}} -10.1 \text{ dB}:$

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 2.2 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH _ E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_{-}E_{c}}{I_{or}} = ratio + TT$ Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH_{-}E_{c}}{I_{or}} -9.9 \text{ dB}:$
8.2.3 UTRAN to GSM Cell Re-Selection	TBD		
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ lor/loc = 0 dB	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio + TT$ $lor/loc = ratio + TT$ $(loc/Rxlev)_{test requirement} =$ $(loc/Rxlev)_{minimum requirement} + TT$ $lor/loc = 0.3 dB$ $\frac{CPICH _ E_c}{I_{or}} = -9.9 dB:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ lor/loc = - 5 dB	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ $\text{lor/loc} = \text{ratio} - \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} =$ $(\text{loc/Rxlev})_{\text{minimum requirement}} - \text{TT}$ $\text{lor/loc} = -5.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ lor/loc = 20 dB	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = ratio + TT$ $lor/loc = ratio + TT$ $(loc/Rxlev)_{test requirement} =$ $(loc/Rxlev)_{minimum requirement} + TT$ $lor/loc = 20.3 dB$ $\frac{CPICH_E_c}{I_{or}} = -9.9 dB:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ lor/loc = 20 dB	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH _ E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} =$ $(\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 20.3 \text{ dB}$ $\frac{CPICH _ E_c}{I_{or}} = -9.9 \text{ dB}:$
8.2.4 FDD/TDD cell re- selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover	TBD		
8.3.2 FDD/FDD Hard Handover	TBD		
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
in CELL_FACH			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.5.1 One frequency present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 7.3 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio - TT$ lor/loc = ratio - TT $I_{oc} \text{ unchanged}$ lor/loc = 7 dB
			$\frac{CPICH_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 10.27 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio + TT$ lor/loc = ratio + TT loc unchanged lor/loc = 10.57 dB $\frac{CPICH _ E_c}{I_{or}} -9.9 \text{ dB}:$
8.3.5.2 Two frequencies present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = -3.4 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 2.2 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio + TT$ Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH _ E_c}{I_{or}} -9.9 \text{ dB}:$
8.3.6 Cell Re-selection in CELL_PCH			
8.3.6.1 One frequency present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 7.3 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ $\text{lor/loc} = \text{ratio} - \text{TT}$ $I_{oc} \text{ unchanged}$ $\text{lor/loc} = 7 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 10.27 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ loc unchanged $\text{lor/loc} = 10.57 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -9.9 \text{ dB}$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.6.2 Two frequencies present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = -3.4 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ lor/loc = ratio - TT loc unchanged loc ratio unchanged lor/loc = -3.7 dB $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 2.2 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH - E_c}{I_{or}} = ratio + TT$ lor/loc = ratio + TT loc unchanged loc ratio unchanged lor/loc = 2.5 dB $\frac{CPICH - E_c}{I_{or}} -9.9 dB:$
8.3.7 Cell Re-selection in URA_PCH			
8.3.7.1 One frequency present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 7.3 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ Ior/loc = ratio - TT $I_{oc} \text{ unchanged}$ Ior/loc = 7 dB $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 10.27 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ loc unchanged $\text{lor/loc} = 10.57 \text{ dB}$ $\frac{CPICH_{-}E_{c}}{I_{or}} - 9.9 \text{ dB}$
8.3.7.2 Two frequencies present in the neighbour list	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $lor/loc = -3.4 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ $\text{lor/loc} = \text{ratio} - \text{TT}$ loc unchanged $\text{loc ratio unchanged}$ $\text{lor/loc} = -3.7 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 2.2 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio + TT$ Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH _ E_c}{I_{or}} -9.9 \text{ dB}:$
8.4 RRC Connection Control	TBD		
8.4.1 RRC Re- establishment delay	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
842 Random Access	TRD RACH power	Measurement TT:	Test parameter settings unchanged
0.1.2 Random / 66633	difference nominal 3dB	Medodrement II.	rest parameter settings unonanged.
	+ 2dB LIE setting	Power difference	Power measurement:
	uncertainty		<u>opper limit TT</u>
			Lower mmit -11
0.5 Timin r. and	TDD	<u>-10D/+0.70D</u>	
8.5 Timing and	ТВО		
Signalling			
	TDD		
8.5.1 UE Transmit	IBD		
Timing	700		
8.6 UE Measurements	IBD		
Procedures			
8.6.1 FDD intra	ТВО		
trequency			
measurements			
8.6.1.1 Event triggered	TBD		
reporting in AWGN			
propagation conditions			
8.6.1.2 Event triggered	TBD		
reporting of multiple			
neighbours in AWGN			
propagation condition			
8.6.1.3 Event triggered	TBD		
reporting of two			
detectable neighbours			
in AWGN propagation			
condition			
8.6.1.4 Correct	TBD		
reporting of neighbours			
in fading propagation			
condition			
8.6.2 FDD inter	TBD		
frequency			
measurements			
8.6.2.1 Correct	TBD		
reporting of neighbours			
in AWGN propagation			
condition			
8.6.2.2 Correct	TBD		
reporting of neighbours	100		
in Fading propagation			
condition			
863TDD	TBD		
measurements			
8.6.3.1Correct	TBD		
neighbours in AWGN			
propagation condition			
8 7 Measurements	TBD		
Performance			
Requirements			
	TRD		
	שסד		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.1 Intra frequency measurements accuracy	TBD see table 8.7.1.1.1 and table 8.7.1.1.1.2	$\frac{\pm 1 \text{ dB for Ioc}}{\pm 0.3 \text{ dB for Ior/Ioc}}$ $\pm 0.1 \text{ dB}$	Any TT applied to the nominal setting shall fulfil:
		for Ec/Ior	<u>Test 1 (absolute and relative): Io</u> shall not go below -69dBm
			Test 2(absolute and relative): Io shall not go above -50 dBm
			Test 3 (absolute and relative): Io shall not go below -94 dBm
			<u>Ior/Ioc + TT</u>
			<u>∑ 1.4dB</u>
			Relative $\pm 0.3 dB$ for Ior/Ioc (cell1) $\pm 0.3 dB$ for Ior/Ioc (cell2) $\pm 0.1 dB$ for CPICH Ec/Ior(cell1) $\pm 0.1 dB$ for CPICH_Ec/Ior(cell2) $\Sigma 0.8 dB$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.2 Inter frequency measurement accuracy	TBD see table 8.7.1.2.1.1 and table 8.7.1.2.1.2	$\frac{\pm 1 \text{ dB for Ioc}}{\pm 0.3 \text{ dB for}}$ $\frac{\pm 0.3 \text{ dB for Ioc}}{\text{Ioc1/Ioc2}}$ $\frac{\pm 0.3 \text{ dB for Ior/Ioc}}{\pm 0.1 \text{ dB}}$ $\frac{\pm 0.1 \text{ dB}}{\text{for Ec/Ior}}$	Any TT applied to the nominal setting shall fulfil:Test 1: Io shall not go above -50 dBmTest 2: Io shall not go below -94 dBmIor/Ioc + TTTT on top of UE measurement accuracy: ± 0.3 dB for Ioc1/Ioc2 ± 0.3 dB for Ior/Ioc (cell1) ± 0.3 dB for Ior/Ioc (cell2) ± 0.1 dB for CPICH_Ec/Ior (cell1) ± 0.1 dB for CPICH Ec/Ior (cell2) ± 0.1 dB for CPICH Ec/Ior (cell2) ± 0.1 dB for CPICH Ec/Ior (cell2)
8.7.2 CPICH Ec/lo	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7. <u>2</u> 4.1 Intra	<u>TBD</u> table 8.7.2.1.1.1 and table 8.7.2.1.1.2	$\pm 1 \text{ dB for Ioc}$	Any TT applied to the nominal
measurements	10010-0.7.2.1.1.2	$\pm 0.3 \text{ ub 101 101/100}$	setting shan runn.
accuracy		for Ec/lor	Test 1(absolute and relative): Io shall not go above -50 dBm
			Test 2 (absolute and relative): Io shall not go below -87dBm
			Test 3 (absolute and relative): Io shall not go below -94 dBm
			<u>CPICH Ec/Io shall stay in the UE</u> accuracy ranges
			Ior/Ioc + TT
			<u>TT on top of UE measurement</u> <u>accuracy:</u> <u>Absolute</u> <u>±0.3 dB for Ior/Ioc</u> +0.1dB for CPICUL Factor
			$\sum 0.4 dB$
			$\begin{tabular}{ l l l l l l l l l l l l l l l l l l l$
			∑ <u>0.8dB</u>

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.21.2 Inter	TBD table 8.7.2.2.2.1 and	±1 dB for Ioc	Any TT applied to the nominal
frequency	table 8.7.2.2.2.2	± 0.3 dB for	setting shall fulfil:
measurement accuracy		loc1/loc2	Test 1: Io shall not go above -50
		+0.3 dB for Ior/Ioc	dBm
		±0.1dB	
		for Ec/lor	Test 2. Io shall not go below -87
			dBm
			Test 3. Io shall not go below -94
			dBm
			Jor/Joc + TT
			$\frac{101/10C + 11}{10}$
			TT on top of UE measurement
			accuracy:
			Ioc1=Ioc2.
			± 0.3 dB for Ior/Ioc (cell1)
			± 0.3 dB for Ior/Ioc (cell2)
			±0.1dB for CPICH Ec/Ior
			(cell1)
			± 0.1 dB for CPICH Ec/lor
			$\frac{1}{(cell2)}$
			<u>(ccn2)</u>
			$\Sigma 0.8 dB$
			<u>7.0.8 db</u>
8.7.3A UTRA Carrier	TBD		
873B Transport			
channel BI FR	IBD		
8.7.3C UE Transmitted	Accuracy upper limit	0.7 dB	Formula: Upper accuracy limit + TT
power	Accuracy lower limit	•••• •=	Lower
	Depends on PUEMAX see		accuracy limit – TT
	table 8.7.3C.2.1		Add and subtract TT to all the values
			in table 8.7.3C.2.1.
8.7.4 SFN-CFN	TBD		
observed time			
difference			
8.7.5 SFN-SFN	TBD		
observed time			
difference			

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	10 - 10.9 dB = 10c, Test 1: lo = -94 dBm Test2 : lo = -72dBm Test3 : lo = -50dBm Timing Accuracy ± 1.5 chip	1 dB for loc 0.3 dB for lor/loc [0.5 chip for timing accuracy]	Test 1: lo = -92.7 dBm, loc = -103.6 dBm Formula: loc*(1-TT _{loc} + (lor/loc-TT _{lor/loc})) ≥ -94
			Test 2: unchanged (no critical RF parameters) Test 3: lo = -51.3 dBm, loc = -62.2 dBm Formula: loc*(1+TT _{loc} + (lor/loc+TT _{lor/loc})) \leq -50
			Timing accuracy [±2.0] chip Formulas: Upper limit +TT Lower limit –TT
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

F.5 Acceptable uncertainty of Test Equipment (This clause is informative)

This informative clause specifies the critical parameters of the components of an overall Test System (e.g. Signal generators, Signal Analysers etc.) which are necessary when assembling a Test System that complies with clause F.1 Acceptable Uncertainty of Test System. These Test Equipment parameters are fundamental to the accuracy of the overall Test System and are unlikely to be improved upon through System Calibration.

F.5.1 Transmitter measurements

Test	Equipment accuracy	Test conditions
5.2 Maximum Output Power	Not critical	19 to 25 dBm
5.3 Frequency error	+ 10 Hz	0 to 500 Hz.
5.4.1 Open loop power control in uplink	Not critical	-43.7 dBm to 25 dBm
5.4.2 Inner loop power control in the	±0.1 dB relative over a 1.5 dB range	+25 dBm to
uplink – single step	± 0.15 dB relative over a 3.0 range	–50 dBm
	±0.2 dB relative over a 4.5 dB range	
5.4.2 Inner loop power control in the uplink – seven and ten steps	±0.3 dB relative over a 26 dB range	+25 dBm to –50 dBm
5.4.3 Minimum Output Power	Not critical	
5.4.4 Out-of-synchronisation handling of	±0.1 dB uncertainty in DPCCH_Ec/lor ratio	Ratio from –16.6 dB to –28 dB
output power: \underline{DPCCH}_{E_c}		
I or		
5.5.1 Transmit ON/OFF Power: UE	Not critical	-56 dBm (static power)
transmit OFF power		
5.5.2 Transmit ON/OFF Power: transmit	TBD	-56 dBm (dynamic power over
ON/OFF time mask		approx. 70 dB range)
5.6 Change of TFC: power control step size	±0.3 dB relative over a 9 dB range	+25 dBm to -50 dBm
5.7 Power setting in uplink compressed	Subset of 5.4.2	+25 dBm to -50 dBm
mode:- UE output power		-
5.8 Occupied Bandwidth	±100 kHz	For results between 4 and 6 MHz?
5.9 Spectrum emission mask	Not critical	P_Max
		Accuracy applies \pm 5 dB either
		side of UE requirements
5.10 ACLR	5 MHZ Offset ± 0.8 dB	19 to 25 dBm at 5 MHz onset for
		dB
	10 MHZ Offset ± 0.8 dB	25 dBm at 10 MHz offset for
		results between 45 dB and 55
		dB.
5.11 Spurious emissions	Not critical	19 to 25 dBm
5.12 Transmit Intermodulation	Not critical	19 to 25 dBm
5.13.1 Transmit modulation: EVM	±2.5 %	25 dBm to -21 dBm
	(for single code)	
5.13.2 Transmit modulation: peak code	±1.0dB	For readings between -10 dB to
domain error		–20 dB.

Table F.5.1: Equipment accuracy for transmitter measurements

F.5.2 Receiver measurements

Table F.5.2: Equipment accuracy for receiver measurements

Clause	Equipment accuracy	Test conditions
6.2 Reference sensitivity level	Not critical	
6.3 Maximum input level:	Not critical	
6.4 Adjacent channel selectivity	Not critical	
6.5 Blocking characteristics	Not critical	
6.6 Spurious Response	Not critical	
6.7 Intermod Characteristics	Not critical	
6.8 Spurious emissions	Not critical	

F.5.3 Performance measurements

Table GF.5.3: Equipment accuracy for performance measurements

Clause	Equipment accuracy	Test conditions
7.2 to 7.10	$\frac{DPCH_E_c}{I_{or}}$ ±0.1 dB	-2.2 to -18.9 dB

F.5.4 Requirement	s for support of RRM e F.5.4: Equipment accuracy for RRM	
Clause	Equipment accuracy	Test conditions
8.2.2 to 8.7.8	any_Ec/lor ±0.1 dB	
	lor//loc ±0.3 dB	
	<u>loc1/loc2 ±0.3 dB</u>	
	loc ±1 dB	

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CR-Form-v7 CHANGE REQUEST							
¥	34.121	CR <mark>290</mark>	жrev	- * (Current versio	^{on:} 4.0.0	ж
For <u>HELP</u> on u	sing this form	n, see bottom of a	this page or lo	ook at the	pop-up text c	over the ೫ syr	nbols.
Proposed change	affects: UI	CC apps೫ 🦲	MEX	Radio Acc	cess Network	Core Ne	etwork
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Reason for change	e: ೫ Follow	up for Annex F	due to newly	developpe	ed test require	ements	
Summary of chang	re: ೫ Updato ۲۰۰۳ کی	e of uncertaintie	s and test tol	erances			
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Clauses affected: Other specs affected:	X Annex X X X X X X	F Other core speci Test specification O&M Specification	fications ns ons	X			
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.

Annex F (normative): General test conditions and declarations

The requirements of this clause apply to all applicable tests in the present document.

Many of the tests in the present document measure a parameter relative to a value that is not fully specified in the UE specifications. For these tests, the Minimum Requirement is determined relative to a nominal value specified by the manufacturer.

When specified in a test, the manufacturer shall declare the nominal value of a parameter, or whether an option is supported.

In all the relevant clauses in this clause all Bit Error Ratio (BER), Block Error Ratio (BLER), False transmit format Detection Ratio (FDR) measurements shall be carried out according to the general rules for statistical testing in clause F.6.

F.1 Acceptable uncertainty of Test System

The maximum acceptable uncertainty of the Test System is specified below for each test, where appropriate. The Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, and the equipment under test to be measured with an uncertainty not exceeding the specified values. All ranges and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95 % is the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment.

For RF tests it should be noted that the uncertainties in clause F.1 apply to the Test System operating into a nominal 50 ohm load and do not include system effects due to mismatch between the DUT and the Test System.

F.1.1 Measurement of test environments

The measurement accuracy of the UE test environments defined in annex G, Test environments shall be.

- Pressure ± 5 kPa.
- Temperature ±2 degrees.
- Relative Humidity ± 5 %.
- DC Voltage $\pm 1,0$ %.
- AC Voltage $\pm 1,5$ %.
- Vibration 10 %.
- Vibration frequency 0,1 Hz.

The above values shall apply unless the test environment is otherwise controlled and the specification for the control of the test environment specifies the uncertainty for the parameter.

F.1.2 Measurement of transmitter

Clause	Maximum Test System Uncertainty	Derivation of Test System
5.2 Movimum Output Dowor		Uncertainty
5.3 Frequency Error	±0,7 db	
5.4.1 Open loop power control in uplink	±1,0 dB	The uncertainty of this test is a combination of the downlink level setting error and the uplink power measurement that are uncorrelated.
		Formula = SQRT(source_level_error ² + power_meas_error ²)
5.4.2 Inner loop power control in the uplink - One step	±0,1 dB relative over a 1,5 dB range (1 dB and 0 dB step) ±0,15 dB relative over a 3,0 dB range (2 dB step) ±0,2 dB relative over a 4.5 dB range (3 dB step)	This accuracy is based on the linearity of the absolute power measurement of the test equipment.
5.4.2 Inner loop power control in the uplink – seven and ten steps	\pm 0,3 dB relative over a 26 dB range	
5.4.3 Minimum Output Power	±1,0 dB	Measured on a static signal
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH - E_c}{E_c}$	±0,4 dB	0.1 dB uncertainty in DPCCH ratio
I or		based on power meter measurement after the combiner Overall error is the sum of the \hat{I}_{or}/I_{oc} ratio error and the DPCCH_Ec/lor ratio. The absolute error of the AWGN loc is not important but is specified as 1.0 dB
5.5.1 Transmit OFF Power: (static case)	±1,0 dB	Measured on a static signal
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0,7 dB – 1,0 dB Off power (dynamic case) TBD	Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit (assume UE won't go above 24 nominal). For the off power, the accuracy of a two-pass measurement needs to be analysed.
5.6 Change of TFC: power control step size (7 dB step)	±0,3 dB relative over a 9 dB range	
5.7 Power setting in uplink compressed mode:- UE output power	Will be a subset of 5.4.2.	
5.8 Occupied Bandwidth	±100 kHz	Accuracy = $\pm 3^{*}$ RBW. Assume 30 kHz bandwidth.
5.9 Spectrum emission mask	±1,5 dB	

Table F.1.2: Maximum Test System Uncertainty for transmitter tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.10 ACLR	5 MHz offset: ± 0,8 dB	
	10 MHz offset: ± 0,8 dB	
5.11 Spurious emissions	\pm 2,0 dB for UE and coexistence bands for results > -60 dBm	
	\pm 3,0 dB for results < -60 dBm	
	Outside above: f≤2.2GHz: ± 1.5 dB 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB f > 4 GHz: ±4.0 dB	
5.12 Transmit Intermodulation	± 2.2 dB	CW Interferer error is 0.7 dB for the UE power RSS with 0.7 dB for CW setting = 1.0 dB Measurement error of intermod product is 0.7 dB for UE power RSS with 0.7 dB for relative = 1.0 dB Interferer has an effect of 2 times on the intermod product so overall test uncertainty is 2*1.0 RSS with 1.0 = 2.2 dB. Apply half any excess test system uncertainty to increase the interferer level
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	
5.13.2 Transmit modulation: peak code domain error	±1.0dB	

F.1.3 Measurement of receiver

Clause	Maximum Test System Uncertainty	Derivation of Test System
		Uncertainty
6.2 Reference sensitivity level	± 0.7 dB	
6.3 maximum input level:	± 0.7 dB	The critical parameter is the overall signal level and not the -19 dB DPCH_Ec/lor ratio. 0.7 dB absolute error due to signal measurement DPCH_Ec/lor ratio error is <0.1 dB but is not important so is ignored
6.4 Adjacent channel selectivity	± 1.1 dB	Overall system uncertainty comprises three quantities: 1. Wanted signal level error 2. Interferer signal level error 3. Additional impact of interferer ACLR Items 1 and 2 are assumed to be uncorrelated so can be root sum squared to provide the ratio error of the two signals. Assume for simplicity this ratio error is linearly added to the interferer ACLR. Test System uncertainty = SQRT (wanted_level_error ² + interferer_level_error ²) + ACLR effect. The ACLR effect is calculated by:(Formula to follow) (E.g. ACLR at 5 MHz of 51 dB gives additional error of .0765 dB. ACLR of 48 gives error of -0 15 dB.)
6.5 Blocking characteristics	System error with f <15 MHz offset: \pm 1.4 dB f >= 15 MHz offset and f <2 2 GHz + [1 0]	Using ± 0.7 dB for signal and interferer as currently defined and 68 dB ACLR @ 10 MHz.
	dB 2.2 GHz < f \leq 4 GHz: ±[1.7] dB f > 4 GHz: ±[3.1] dB	
6.6 Spurious Response	$f \le 2.2 \text{ GHz}: \pm 1.0 \text{ dB}$ 2.2 GHz < f ≤ 4 GHz: $\pm 1.7 \text{ dB}$ f > 4 GHz: $\pm 3.1 \text{ dB}$	

Table F.1.3: Maximum Test System Uncertainty for receiver tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
6.7 Intermodulation Characteristics	±1.3 dB	Similar issues to 7.4 ACS test. ETR028 says impact f the closer signal is twice that of the far signal. If both signals drop 1 dB, intermod product drops 2 dB. Formula = $\sqrt{(2 \cdot CW_{level} - error)^2 + (mod_{level} - error)^2}$ (Using CW interferer ±0.5 dB, modulated interferer ±0.5 dB, wanted signal ±0.7 dB) 1.3 dB! Broadband noise/ACLR not considered but may have impact.
6.8 Spurious emissions	\pm 3.0 dB for UE receive band (-78 dBm) Outside above: f≤2.2GHz: \pm 2.0 dB (-57 dBm) 2.2 GHz < f ≤ 4 GHz: \pm 2.0 dB (-47 dBm) f > 4 GHz: \pm 4.0 dB (-47 dBm)	

F.1.4 Performance requirement

Clause	Maximum Test Syster	n Uncertainty	Derivation of Test System
			Uncertainty
7.2 Demodulation in Static Propagation Condition	\hat{I}_{or}/I_{oc}	±0.3 dB	0.1 dB uncertainty in DPCH_Ec ratio
		±1.0	0.3 dB uncertainty in \hat{I}_{or}/I_{oc}
	DPCH E		based on power meter
	$\frac{I = I = I = -c}{I_{or}}$	±0.1 dB	combiner
			Overall error is the sum of the \hat{t}
			P_{or}/T_{oc} ratio error and the DPCH Ec/lor ratio but is not
			RSS for simplicity. The
			loc is not important for any
			tests in clause 7 but is specified as 1.0 dB.
7.3 Demodulation of DCH in multipath	\hat{I}_{or}/I_{oc}	±0.56 dB	Worst case gain uncertainty
Fading Propagation conditions	I _{oc}	±1.0	calibrated static profile is ± 0.5
	dB DPCH E		dB In addition the same ±0.3 dB
	$\frac{IIOII - I_c}{I_{or}}$	±0.1 dB	\hat{I}_{or}/I_{oc} ratio error as 7.2.
			These are uncorrelated so can
			Overall error in \hat{I}_{or}/I_{oc} is (0.5^2)
			$+0.3^{2})^{0.5} = 0.6 \text{ dB}$
7.4 Demodulation of DCH in Moving Propagation conditions	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
	I _{oc} dB	±1.0	
	$DPCH _ E_c$	+0.1 dB	
	I _{or}	±0.1 uD	
7.5 Demodulation of DCH in Birth-Death Propagation conditions	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
		±1.0	
	$DPCH E_c$		
	I_{or}	±0.1 dB	
7.6.1 Demodulation of DCH in open loop	\hat{I}_{or}/I_{oc}	±0.8 dB	Worst case gain uncertainty due to the fader from the
		±1.0	calibrated static profile is ± 0.5
	ab DPCH E		dB per output In addition the same ±0.3 dB
	$\frac{I_{or}}{I_{or}}$	±0.1 dB	\hat{I}_{or}/I_{oc} ratio error as 7.2.
			These are uncorrelated so can be RSS.
			Overall error in \hat{I}_{or}/I_{oc} is (0.5 ²
			$+0.5^{2}+0.3^{2})^{0.5}=0.768$ dB.

Table F.1.4: Maximum Test System Uncertainty for Performance Requirements

Clause	Maximum Te	est System Uncertainty	Derivation of Test System Uncertainty
7.6.2 Demodulation of DCH in closed	\hat{I}_{or}/I_{oc}	±0.8 dB	Same as 7.6.1
loop Transmit diversity mode	Inc	±1.0	
	dB		
	$DPCH _E_c$	+0.1 dP	
	I _{or}	±0.1 ub	
7.6.3, Demodulation of DCH in site	\hat{I}_{ar}/I_{aa}	±0.8 dB	Same as 7.6.1
selection diversity Transmission power	I	+1.0	
control mode	dB	21.0	
	$DPCH E_c$		
	I_{or}	±0.1 dB	
7.7.1 Demodulation in inter-cell soft	$\hat{I}_{\mu\nu}/I_{\mu\nu}$	±0.8 dB	Same as 7.6.1
Handover	I	+1 0	
	dB	21.0	
	$DPCH _ E_c$		
	$\frac{I_{or}}{I_{or}}$	±0.1 dB	
7.7.2 Combining of TPC commands Test	lor1,lor2	±1.0 dB	Test is looking for changes in
1	<u>DPCH_E_c</u>	+0.1 dB	power - need to allow for
	I _{or}	±0.1 dD	relaxation in criteria for power
			dB
7.7.2 Combining of TPC commands Test	\hat{I}_{or}/I_{oc}	±0.8 dB	Same as 7.6.1
2	I _{ac}	±1.0	
	dB		
	$DPCH _ E_c$		
	I _{or}	±0.1 UD	
7.8.1 Power control in downlink constant	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
DLER larger	I _{oc}	±1.0	
	dB		
	$DPCH _ E_c$	+0.1 dB	
	I _{or}	10.1 GD	
7.8.2, Power control in downlink initial	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
convergence	I _{oc}	±1.0	
	dB		
	<u>DPCH_E_c</u>	+0.1 dB	
	I _{or}	10.11 00	
7.8.3, Power control in downlink: wind up	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
enects	I _{oc}	±1.0	
	dB		
	$\underline{DPCH _ E_c}$	±0.1 dB	
	I _{or}		
7.9 Downlink compressed mode	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
	I _{oc}	±1.0	
	dB		
	$\frac{DPCH _ E_c}{I}$	±0.1 dB	
	I _{or}		

, ,	Uncertainty
\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 7.2
<i>I_{oc}</i> ±1.0	
$\frac{DPCH_E_c}{I_{or}}$ ±0.1 dB	
î /r	Same as 7.3
I_{or}/I_{oc} ±0.6 dB	Game as 7.5
I_{oc} ±1.0	
$\frac{DPCH_E_c}{I_{or}} = \pm 0.1 \text{ dB}$	
Î _{or} I _{oc} IB DI	$\frac{I_{or}}{I_{oc}} \pm 0.6 \text{ dB} \pm 1.0$ $\frac{PCH - E_c}{I_{or}} \pm 0.1 \text{ dB}$

F.1.5 Requirements for support of RRM

Clause	Maximum Test System Uncertainty	Derivation of Test System
8.2 Idle Mode Tasks		
8.2.2 Cell Re-Selection		
8.2.2.1 Scenario 1: Single carrier case	\hat{I}_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB	0.1 dB uncertainty in CPICH_Ec ratio
	$\frac{CPICH_E_c}{I_{or}} = \pm 0.1 \text{ dB}$	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner
		The absolute error of the AWGN is specified as 1.0 dB.
8.2.2.2 Scenario 2: Multi carrier case	\hat{I}_{or}/I_{oc} ±0.3 dB	0.1 dB uncertainty in
	1.0 dB	CPICH_Ec ratio
		0.3 dB uncertainty in I_{or}/I_{oc}
	I_{oc1}/I_{oc2} ±0.3 dB	based on power meter
	$\frac{CPICH_E_c}{I}$ ±0.1 dB	measurement after the combiner
	l or	0.3 dB uncertainty in loc1/loc2 based on power meter measurement after the combiner
		Overall error for the CPICH_Ec/lo is the sum of the \hat{I}_{or}/I_{oc} ratio error and the CPICH_Ec/lor ratio.
		The absolute error of the AWGN is specified as 1.0 dB.
8.2.3 UTRAN to GSM Cell Re-Selection		
8.2.3.1 Scenario 1: Both UTRA and GSM	\hat{I}_{or}/I_{oc} ±0.3 dB	0.1 dB uncertainty in
level changed	$I_{oc}/RXLEV$ ±0.3 dB	CPICH_EC ratio
	<i>I</i> _{ac} ±1.0 dB	0.2 dB upcontainty in \hat{I} /I
	RXLEV ±1.0 dB	0.3 dB uncertainty in I_{or}/I_{oc}
		based on power meter
	$CPICH _E_c$	combiner
	= ±0.1 dB	
	or	loc/RXLEV based on power meter measurement after the combiner
		The absolute error of the AWGN is specified as 1.0 dB.
		RXLEV is specified as 1.0 dB.

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test S	ystem Uncertainty	Derivation of Test System Uncertainty
8.2.3.2 Scenario 2: Only UTRA level	$\hat{I}_{}/I_{}$	±0.3 dB	Same as 8.2.3.1
changed	$I_{oc}/RXLEV$	±0.3 dB	
	I	+1 0 dB	
		±1.0 dB	
		±1.0 UD	
	$\frac{CPICH_E_c}{I_{or}}$	±0.1 dB	
8.2.4 FDD/TDD cell re-selection	\hat{I}_{or}/I_{oc}	±0.3 dB	Same as 8.2.2.2
	I _{oc}	±1.0 dB	
	I_{oc1}/I_{oc2}	±0.3 dB	
	$\frac{CPICH_E_c}{I_{or}}$	±0.1 dB	
8.3 UTRAN Connected Mode Mobility			
8.3.1 FDD/FDD Soft Handover			No test case
8.3.2 FDD/FDD Hard Handover	TBD		
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
8.3.5 Cell Re-selection in CELL_FACH			
8.3.5.1 One frequency present in the	Same as 8.2.2.1		Same as 8.2.2.1
8.3.5.2 Two frequencies present in the	Same as 8.2.2.2		Same as 8.2.2.2
neighbour list			
8.3.6 Cell Re-selection in CELL_PCH	0		0
neighbour list	Same as 8.2.2.1		Same as 8.2.2.1
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2		Same as 8.2.2.2
8.3.7 Cell Re-selection in URA_PCH			
8.3.7.1 One frequency present in the	Same as 8.2.2.1		Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2		Same as 8.2.2.2
8.4 RRC Connection Control	TBD		
8.4.1 RRC Re-establishment delay			

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.4.2 Random Access	Settings.	0.1 dB uncertainty in AICH_Ec
	$\frac{\hat{l}}{\hat{l}}$ +0.3 dB	ratio
		0.3 dB uncertainty in \hat{I} /I
	I_{OC} ±1.0 dB	
	$AICH _E_c$	based on power meter
	$\frac{1}{I_{or}}$ ±0.1 dB	combiner
		Overall error is the sum of the
		I_{or}/I_{oc} ratio error and the
		AICH_Ec/lor ratio.
		The absolute error of the AWGN is specified as 1.0 dB
	Measurements:	Power difference:
	Power difference. ± 1dB	Assume symmetric meas error
	Maximum Power: same as 5.5.2	±1.0 dB comprising RSS of: -
		0.7 dB downlink error plus -0.7 dB meas error.
		Maximum Power:
		Assume asymmetric meas
		error -1.0 dB / 0.7 dB
		comprising RSS of: -0.7 dB
		downlink error plus -0.7 dB
		upper limit
8.5 Timing and Signalling Characteristics		
8.5.1 UE Transmit Timing	I +1.0 dB	0.1 dB uncertainty in
		DPCH_Ec ratio
	I_{or1}/I_{or2} ±0.3 dB	
	DPCH E	0.3 dB uncertainty in for f/for2
	$\frac{DT OT - D_c}{4} = \pm 0.1 \text{ dB}$	measurement after the
	I _{or}	combiner
		The absolute error of the lor is specified as 1.0 dB.
8.6 UE Measurements Procedures		
8.6.1 FDD intra frequency measurements		
8.6.1.1 Event triggered reporting in	TBD	
AWGN propagation conditions		
8.6.1.2 Event triggered reporting of	IBD	
propagation condition		
8.6.1.3 Event triggered reporting of two	TBD	
detectable neighbours in AWGN		
propagation condition		
8.6.1.4 Correct reporting of neighbours in	TBD	
fading propagation condition		
8.6.2 FDD inter frequency measurements		
8.6.2.1 Correct reporting of neighbours in	ТВО	
Avv GN propagation condition		
Fading propagation condition		
8.6.3 TDD measurements	TBD	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD	
8.7 Measurements Performance		
Requirements		
8.7.1 CPICH RSCP		0 0004
8.7.1.1 Intra frequency measurements	I_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.1
accuracy	<i>I_{oc}</i> ±1.0 dB	
	$\frac{CPICH_E_c}{I}$ ±0.1 dB	
8712 Inter frequency measurement	\hat{I} / I \hat{I} \hat{I} \hat{I}	Same as 8 2 2 2
accuracy	I_{or}/I_{oc} ±0.3 dB	Suno us 0.2.2.2
	I_{oc} ±1.0 dB	
	I_{oc1}/I_{oc2} ±0.3 dB	
	$\frac{CPICH_E_c}{I_{c}}$ ±0.1 dB	
872 CPICH Ec/lo	Or	
8.7.24.1 Intra frequency measurements	\hat{I} /I ±0.3 dB	Same as 8.2.2.1
accuracy	I_{ac} ±1.0 dB	
	$\frac{CPICH _E_c}{\pm 0.1 \text{ dB}}$	
	I _{or}	
8.7.24.2 Inter frequency measurement	\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.2
accuracy	<i>I_{oc}</i> ±1.0 dB	
	I_{oc1}/I_{oc2} ±0.3 dB	
	$\frac{CPICH_E_c}{I_{or}} = \pm 0.1 \text{ dB}$	
8.7.3A UTRA Carrier RSSI	\hat{I}_{or}/I_{oc} ±0.3 dB	0.3 dB uncertainty in \hat{I}_{ar}/I_{ac}
	<i>I</i> _{oc} ±1.0 dB	based on power meter
	I_{oc1}/I_{oc2} ±0.3 dB	measurement after the combiner
		0.3 dB uncertainty in loc1/loc2 based on power meter measurement after the combiner
		The absolute error of the AWGN is specified as 1.0 dB
8.7.3B Transport channel BLER	TBD	
8.7.3C UE Transmitted power	Mean power measurement ±0,7 dB	Downlink parameters are unimportant.
8.7.4 SFN-CFN observed time difference	TBD	
8.7.5 SFN-SFN observed time difference	TBD	

Clause	Maximum Test Syste	em Uncertainty	Derivation of Test System Uncertainty
8.7.6 UE Rx-Tx time difference	\hat{I}_{or}/I_{oc} I_{oc} Rx-Tx Timing Accuracy [±0.5 chip]	±0.3 dB ±1.0 dB	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB.
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.1 Transmitter

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: $DPCCH _ E_c$	
5.4.4 Out-of-synchronisation handling of	0 ms
output power: transmit ON/OFF time	0 113
5.5.1 Transmit OFF power	1 0 dB
5.5.2 Transmit ON/OFE time mask	On power $\pm 0.7 \text{dB} / \pm 1.0 \text{dB}$
(dynamic case)	
	Off power TT [] dB
5.6 Change of TFC: power control step	0.3 dB
size	
5.7 Power setting in uplink compressed	See subset of 5.4.2
mode:- UE output power	
5.8 Occupied Bandwidth	0 kHz
5.9 Spectrum emission mask	1.5 dB (0 dB for additional requirements for Band II)
5.10 ACLR	0.8 dB for ratio
	0.0 dB for absolute power
5.11 Spurious emissions	0 dB
5.12 Transmit Intermodulation	0 dB
5.13.1 Transmit modulation: EVM	0%
5.13.2 Transmit modulation: peak code	1.0 dB
domain error	

Table F.2.1: Test Tolerances for transmitter tests.

F.2.2 Receiver

Table F.2.2: Test Tolerances for receiver tests.

Clause	Test Tolerance
6.2 Reference sensitivity level	0.7 dB
6.3 Maximum input level:	0.7 dB
6.4 Adjacent channel selectivity	0 dB
6.5 Blocking characteristics	0 dB
6.6 Spurious Response	0 dB
6.7 Intermodulation Characteristics	0 dB
6.8 Spurious emissions	0 dB

F.2.3 Performance requirements

Clause	Test Tolerance
7.2 Demodulation in Static Propagation	0.3 dB for \hat{I}_{ar}/I_{ac}
Condition	0.1 dB for DPCH_Ec/lor
7.3 Demodulation of DCH in multipath	0.6 dB for \hat{I}_{ar}/I_{ac}
Fading Propagation conditions	0.1 dB for DPCH_Ec/lor
7.4 Demodulation of DCH in Moving	0.6 dB for \hat{I}_{or}/I_{oc}
Propagation conditions	0.1 dB for DPCH_Ec/lor
7.5 Demodulation of DCH in Birth-Death	0.6 dB for \hat{I}_{or}/I_{oc}
Propagation conditions	0.1 dB for DPCH_Ec/lor
7.6.1 Demodulation of DCH in open loop	0.8 dB for \hat{I}_{or}/I_{oc}
I ransmit diversity mode	0.1 dB for DPCH_Ec/lor
7.6.2 Demodulation of DCH in closed	0.8 dB for \hat{I}_{or}/I_{oc}
loop Transmit diversity mode	0.1 dB for DPCH_Ec/lor
7.6.3, Demodulation of DCH in site	0.8 dB for \hat{I}_{ar}/I_{ac}
selection diversity Transmission power control mode	0.1 dB for DPCH_Ec/lor
7.7.1 Demodulation in inter-cell soft	0.8 dB for \hat{I}_{or}/I_{oc}
Handover conditions	0.1 dB for DPCH_Ec/lor
7.7.2 Combining of TPC commands Test	0 dB for lor1, lor2
1 770 Combining of TDC commondo Toot	0.1 dB for DPCH_Ec/lor
2	0.8 dB for I_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.8.1 Power control in downlink constant	0.6 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.8.2, Power control in downlink initial	0.6 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.8.3, Power control in downlink: wind up	0.6 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.9 Downlink compressed mode	0.6 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.10 Blind transport format detection	0.3 dB for \hat{I}_{or}/I_{oc}
1 ests 1, 2, 3	0.1 dB for DPCH_Ec/lor
7.10 Blind transport format detection	0.6 dB for \hat{I}_{or}/I_{oc}
1 ests 4, 5, 6	0.1 dB for DPCH_Ec/lor

Table F.2.3: Test Tolerances for Performance Requirements.

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.2 Idle Mode Tasks	
8.2.2 Cell Re-Selection	
8.2.2.1 Scenario 1: Single carrier case	0.3 dB for $\hat{I}_{\perp}/I_{\perp}$
	0.1 dB for CPICH Ec/lor
8.2.2.2 Scenario 2: Multi carrier case	$0.2 \text{ dB for } \hat{I} / I$
	0.5 dB for P_{or}/P_{oc}
8.2.3 LITRAN to GSM Cell Re-Selection	0.1 dB for CPICH_EC/lor
8.2.3 1 Scenario 1: Both LITRA and GSM	^ /
level changed	0.3 dB for I_{or}/I_{oc}
5	0.1 dB for CPICH_Ec/lor
	0.3 dB for loc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level	0.3 dB for \hat{I}_{or}/I_{oc}
Changed	0.1 dB for CPICH Ec/lor
	0.3 dB for loc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for \hat{I}_{ar}/I_{ac}
	0.1 dB for CPICH Ec/lor
	0.3 dB for loc1/loc2
8.3 UTRAN Connected Mode Mobility	
8.3.1 FDD/FDD Soft Handover	
8.3.2 FDD/FDD Hard Handover	TBD
8.3.3 FDD/TDD Handover	TBD
UTRAN FDD to GSM	TBD
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the	0.3 dB for \hat{I}_{aa}/I_{aa}
neignbour list	0.1 dB for CPICH_Ec/lor
8.3.5.2 Two frequencies present in the	
neighbour list	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.3.6 Cell Re-selection in CELL_PCH	<u> </u>
neighbour list	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.3.6.2 Two frequencies present in the	0.3 dB for \hat{I}/I
neighbour list	$rac{1}{2}$
8.3.7 Coll Polsoloction in LIPA PCH	0.1 dB for CPICH_EC/lor
8.3.7 1 One frequency present in the	<u>^</u> /_
neighbour list	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.3.7.2 Two frequencies present in the	0.3 dB for \hat{I} /I
neignbour list	0.1 dB for CPICH Ec/lor
8 4 RRC Connection Control	
8.4.1 RRC Re-establishment delay	TBD
Clause	Test Tolerance
--	----------------------------------
8.4.2 Random Access	Settings:
	0.3 dB for \hat{I}_{ar}/I_{ac}
	0.1 dB for AICH_Ec/lor
	Measurements:
	Power difference: ± 1dB
	Maximum Power: -1dB / +0.7dB
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD Intra frequency measurements	
AWGN propagation conditions	
8.6.1.2 Event triagered reporting of	TBD
multiple neighbours in AWGN	
propagation condition	
8.6.1.3 Event triggered reporting of two	TBD
detectable neighbours in AWGN	
propagation condition	
8.6.1.4 Correct reporting of neighbours in	IBD
8.6.2 EDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in	TBD
AWGN propagation condition	
8.6.2.2 Correct reporting of neighbours in	TBD
Fading propagation condition	
8.6.3 TDD measurements	
8.6.3.1Correct reporting of TDD	TBD
neighbours in AWGN propagation	
8.7 Measurements Performance	IBD
8 7 1 CPICH RSCP	
8.7.1.1 Intra frequency measurements	$\hat{\mathbf{r}}$
accuracy	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
	1.0 dB for loc
8.7.1.2 Inter frequency measurement accuracy	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
	0.3 dB for loc1/loc2
	1.0 dB for loc
8.7.2 CPICH EC/IO	
accuracy	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.7.24.2 Inter frequency measurement	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for CPICH Ec/lor
8.7.3A UTRA Carrier RSSI	\hat{I}
	U.3 dB for I_{or}/I_{oc}
	1.0 dB for loc
8.7.3B Transport channel BLER	
8.7.3C UE Transmitted power	test system
8.7.4 SFN-CFN observed time difference	
8.7.5 SFN-SFN observed time difference	

|

Clause	Test Tolerance
8.7.6 UE Rx-Tx time difference	0.3 dB for \hat{I}_{or}/I_{oc}
	1.0 dB for loc [0.5 chip] for Rx-Tx Timing Accuracy
8.7.7 Observed time difference to GSM cell	TBD
8.7.8 P-CCPCH RSCP	TBD

F.3 Interpretation of measurement results

The measurement results returned by the Test System are compared – without any modification – against the Test Requirements as defined by the shared risk principle.

The Shared Risk principle is defined in ETR 273-1-2 clause 6.5.

The actual measurement uncertainty of the Test System for the measurement of each parameter shall be included in the test report.

The recorded value for the Test System uncertainty shall be, for each measurement, equal to or lower than the appropriate figure in clause F.1 of the present document.

If the Test System for a test is known to have a measurement uncertainty greater than that specified in clause F.1, it is still permitted to use this apparatus provided that an adjustment is made value as follows. Any additional uncertainty in the Test System over and above that specified in clause F.1 shall be used to tighten the Test Requirement – making the test harder to pass. (For some tests e.g. receiver tests, this may require modification of stimulus signals). This procedure will ensure that a Test System not compliant with clause F.1does not increase the chance of passing a device under test where that device would otherwise have failed the test if a Test System compliant with clause F.1 had been used.

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 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = $\pm 1/-3$ dB Power class 2 (27 dBm) Tolerance = $\pm 1/-3$ dB Power class 3 (24 dBm) Tolerance = $\pm 1/-3$ dB Power class 4 (21 dBm) Tolerance = ± 2 dB	0.7 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For power classes 1-3: Upper Tolerance limit = +1.7 dB Lower Tolerance limit = -3.7 dB For power class 4: Upper Tolerance limit = +2.7 dB Lower Tolerance limit = -2.7 dB
5.3 Frequency Error	The UE modulated carrier frequency shall be accurate to within ± 0.1 ppm compared to the carrier frequency received from the Node B.	10 Hz	Formula: modulated carrier frequency error + TT modulated carrier frequency error = \pm (0.1 ppm + 10 Hz).
5.4.1 Open loop power control in the uplink	Open loop power control tolerance ±9 dB (Normal) Open loop power control tolerance ±12 dB (Normal)	1.0 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For Normal conditions: Upper Tolerance limit = +10 dB Lower Tolerance limit = -10 dB For Extreme conditions: Upper Tolerance limit = +13 dB Lower Tolerance limit = -13 dB
5.4.2 Inner loop power control in uplink	See table 5.4.2.1 and 5,4,2,2	0.25dB 0.15 dB 0.2 dB 0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT
5.4.3 Minimum Output Power	UE minimum transmit power shall be less than –50 dBm	1.0 dB	Formula: UE minimum transmit power + TT UE minimum transmit power = -49 dBm

Table F.4.1: Derivation of Test Requirements (Transmitter tests)

Test	Minimum Requirement in TS 25.101	Test Tolerance	Test Requirement in TS 34.121
5.4.4 Out-of- synchronisation handling of output power:	$\frac{DPCCH_E_c}{I_{or}} \text{ levels}$ AB: -22 dB BD: -28 dB DE: -24 dB EF: -18 dB transmit ON/OFF time 200ms $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or} / I_{oc} = -1 \text{ dB}$	(TT) 0.4 dB for <u>DPCCH_E</u> I _{or} 0 ms for timing measurem ent	Formulas: Ratio between A and B + TT Ratio between B and D – TT Ratio between D and E – TT Ratio between E and F + TT transmit ON/OFF time + TT timing $\frac{DPDCH_{-}E_{c}}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or} / I_{oc} = -1 \text{ dB}$ $\frac{DPCCH_{-}E_{c}}{I_{or}} \text{ levels:}$ $\frac{I_{or}}{AB: -21.6 \text{ dB}}$ $DE: -28.4 \text{ dB}$ $DE: -24.4 \text{ dB}$ $EF: -17.6 \text{ dB}$ transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = -55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = I IdBm

5.6 Change of TFC: power control step size TFC step size = +5 to +9 dB 0.3 dB Formula: Upper Tolerance limit + TT Lower 5.7 Power setting in uplink compressed mode Various TBD Upper limit = -4.7 dB 5.7 Power setting in uplink compressed mode Various TBD TBD 5.8 Occupied Bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be -50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Minimum requirement + TT Lower limit + TT Power Classes 3 and 4: UE c	Test	Minimum Require 25.101	ment in TS	Test Tolerance (TT)	Test Requirement in	TS 34.121
power control step size Lower 5.7 Power setting in uplink compressed mode Various TBD (Subset of 5.4.2) TBD 5.8 Occupied Bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Norupite of 3.42 Mcps. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the ACLR shall be higher than the ACLR limit: 33 dB 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 33 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement semission 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement s table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirement nt SkHz ≤ f < 1GHz	5.6 Change of TFC:	TFC step size = +5	to +9 dB	0.3 dB	Formula: Upper Tolerance	e limit + TT
5.7 Power setting in uplink compressed mode Various TBD (Subset of 5.4.2) TBD (Subset of 5.4.2) TBD 5.8 Occupied Bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in 73.84 Mcps. 1.5 dB Formula: Minimum requirement + TT Lower limit + TT 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement 19 kHz ≤ f < 150	power control step size				Tolerance limit – TT	Lower
5.7 Power setting in uplink compressed mode Various TBD TBD 5.8 Occupied Bandwidth The occupied channel beandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth : + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. 1.5 dB Formula: Minimum requirement entries in TS25.101 Table 6.10. 5.10 Adjacent Channel Leakage Power Ratio (ACLR shall be higher than -50 dBm the the ACLR shall be higher than the values specified below. 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -50 MHz, ACLR limit: 33 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: MCLR limit - TT S.11 Spurious Frequency Band Minimum Requirement + TT Add zero to all the values of Minimum Requirement + TT Add zero to all the values of Minimum Requirement + 0 MHz or -10 MHz, ACLR limit: 42.2 dB Formula: ACLR limit - TT 5.11 Spurious Frequency Band Minimum Requirement + TT Add zero to all the values of Minimum Requirement + TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b. Formula: Minimum Requirement + TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.					Upper limit = -4.7 dB	
toping essed The occupied channel bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Minimum requirement + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirement nt	5.7 Power setting in	Various		TBD (Subset of	TBD	
5.8 Occupied Bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 KHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Minimum requirement + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Zero test tolerance is applied for Additional requirements. The lower limit shall be –4.50 dBm / 3.84 MHz or which ever is higher. 0.0 dB Formula: AcLR limit - TT Hower limit shall be –4.50 dBm / 3.84 MHz or which ever is higher. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32.2 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt Minimum Requirement nt Frequency Band Minimum Requirement nt Frequency Band Minimum Requirement nt Minimum Requirement nt Frequency Band Minimum Requirement nt Minimum Requirement nt	mode			(Subset of 5.4.2)		
5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Minimum requirement + TT Lower limit + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Lower limit + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. 2 ero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be –48.5 dBm / 3.84 MHz or which ever is higher. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: Absolute power threshold + TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt Minimum Requirement nt Frequency Band Minimum Requirements in table 5.11.1a and 5.11.1b. Frequency Band Minimum Minimum Requirement nt 0 dB 9kHz ≤ f < 1GHz	5.8 Occupied Bandwidth	The occupied chann bandwidth shall be I MHz based on a chi	nel ess than 5 p rate of	0 kHz	Formula: occupied channel	bandwidth: +
maskTS25.101 Table 6.10. The lower limit shall be -50 dBm / 3.84 MHz or which ever is higher.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 -50 dBm (Add 1.5 to Minimum requirements for Band II due to FCC regulatory requirements. The lower limit shall be -48.5 dBm / 3.84 MHz or which ever is higher.5.10 Adjacent Channel Leakage Power Ratio (ACLR)If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT9 Wer Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dBFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.5.11 Spurious EmissionsFrequency Band Ninimum Requirement ntMinimum Requirement ntFrequency Band Minimum Requirement nt9 KHz ≤ f < 150	5.9 Spectrum emission	Minimum requireme	nt defined in	1.5 dB	Formula: Minimum requirer	n = 5.0 MHz ment + TT
Ine lower limit shall be -50 dBm (3.84 MHz or which ever is higher.Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Zero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be -48.5 dBm / 3.84 MHz or which ever is higher.5.10 Adjacent Channel Leakage Power Ratio (ACLR)If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT9 wer Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dB5.11 Spurious EmissionsFrequency Band Minimum RequirementFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.9 kHz ≤ f < 150	mask	TS25.101 Table 6.1	0.		Lower limit + TT	
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Additional requirements of band if due to FCC regulatory requirements. The lower limit shall be -48.5 dBm / 3.84 MHz or which ever is higher.5.10 Adjacent Channel Leakage Power Ratio (ACLR)If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT9.8 dBPower Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dB5.11 Spurious EmissionsFormula: ACLR limit: 43 dB0.8 dBFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requirement ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150		higher.			Zero test tolerance is applie	ed for
5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: Absolute power threshold + TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB 5.11 Spurious Emissions Formula: Minimum Requirements in table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirement nt 9 kHz ≤ f < 150					to FCC regulatory requirem	nents.
In the discent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT(ACLR) $ACLR$ shall be higher than the values specified below.0.0 dBFormula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB0.8 dBFormula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dB5.11 Spurious EmissionsFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requirement ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150					The lower limit shall be -48	3.5 dBm / 3.84
Leakage Power Ratio (ACLR)greater than -50 dBm then the ACLR shall be higher than the values specified below.0.8 dBFormula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dB5.11 Spurious EmissionsFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150	5.10 Adjacent Channel	If the adjacent chan	nel power is	0.0 dB	Formula: Absolute power th	nreshold + TT
$\frac{ V(CERV) }{ V(CERV) } = \frac{ V(CERV) }{ V($	Leakage Power Ratio	greater than –50 dB	m then the			
Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB $0.8 dB$ Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB5.11 Spurious Emissions 5.11 Spurious Frequency Band $RequirementntFormula: Minimum Requirement+ TTAdd zero to all the values of MinimumRequirements in table 5.11.1a and5.11.1b.5.11 \text{ Spurious}EmissionsFrequency BandRequirementntMinimumRequirementntFrequency BandRequirementnt$	(AULK)	values specified bel	ow.			
OE channel +5 MHz of -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dBPower 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 dB5.11 Spurious EmissionsFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150		Power Classes 3 an	d 4:	0.8 dB	Formula: ACLR limit - TT	
UE channel +10 MHz or -10 MHz, ACLR limit: 43 dBlimit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB5.11 Spurious EmissionsFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150		ACLR limit: 33 dB	. 0i -ɔ ivi⊓z,		UE channel +5 MHz or -5 N	/Hz, ACLR
MHZ, ACLR limit: 43 dB OE channel + 10 MHZ of -10 MHZ, ACLR S.11 Spurious Formula: Minimum Requirement+ TT Emissions Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirement nt 9 kHz ≤ f < 150		UE channel +10 MH	lz or -10		limit: 32.2 dB	
5.11 Spurious Emissions Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirement nt 9 kHz \leq f < 150		MHZ, ACLR limit: 43	3 dB		limit: 42.2 dB	U MHZ, ACLR
Add Zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement nt9 kHz \leq f < 150	5.11 Spurious				Formula: Minimum Require	ement+ TT
5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement9 kHz \leq f < 150	LIIISSIOIIS				Requirements in table 5.11	.1a and
Prequency bandInfinitianPrequency bandInfinitianRequireme ntRequireme ntRequireme $9 \text{ kHz} \le f < 150$ -36dBm 0 dB $9 \text{ kHz} \le f < 1 \text{ GHz}$ -36dBm		Fraguanay Band	Minimum		5.11.1b.	Minimum
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Frequency Banu	Requireme		Flequency Banu	Requirement
		0 kHz < f < 150	nt _36dBm	0 dB	9kHz < f < 1GHz	_36dBm
		kHz	/1kHz	0 QD		/1kHz
150 kHz ≤ f < 30 -36 dBm 0 dB 150 kHz ≤ f < 30 MHz -36 dBm (40kHz		150 kHz ≤ f < 30	-36dBm	0 dB	150 kHz ≤ f < 30 MHz	-36dBm
$\frac{MHZ}{1000} = \frac{1000}{-36} = \frac{1000}{100} = \frac{1000}{-36} = 10$		$\frac{\text{MHZ}}{30 \text{ MHz} \le f < 1000}$	/10KHZ	0 dB	30 MHz < f < 1000 MHz	/10KHZ _36dBm
MHz /100kHz 30 MHz 30 MHz 4000		MHz	/100kHz	0 GD		/100kHz
1 GHz ≤ f < 12.7530dBm 0 dB 1 GHz ≤ f < 2.2 GHz30dBm		1 GHz ≤ f < 12.75	–30dBm	0 dB	1 GHz ≤ f < 2.2 GHz	-30dBm
GHz /1MHz /1MHz		GHz	/1MHz			/1MHz
$0 \text{ dB} \qquad 2.2 \text{ GHz} \leq f < 4 \text{ GHz} \qquad -30 \text{dBm}$				0 dB	2.2 GHz ≤ f < 4 GHz	–30dBm /1M⊔-7
0 dB 4 GHz \leq f < 12.75 GHz -30dBm				0 dB	4 GHz ≤ f < 12.75 GHz	-30dBm
/1MHz						/1MHz
1893.5 MHZ < t < −41dBm 0 dB 1893.5 MHZ < t < 1919.6 −41dBm 1919.6 MHz /300kHz MHz /300kHz		1893.5 MHz < t < 1919.6 MHz	–41dBm /300kHz	U dB	1893.5 MHz < t < 1919.6 MHz	–41dBm /300kHz
925 MHz \le f \le 935 -67dBm 0 dB 925 MHz \le f \le 935 MHz -67dBm (400) Hz		925 MHz ≤ f ≤ 935	-67dBm	0 dB	925 MHz \leq f \leq 935 MHz	-67dBm

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in [•]	TS 34.121
	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 leve Intermod Products limits re unchanged. CW interferer level = -40 df	el – TT/2 main 3c
5.13.1 Transmit modulation: EVM	The measured EVM shall not exceed 17.5%.		0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13.2 Transmit modulation: peak code domain error	The measured Peak code domain error shall not exceed -15 dB.		1.0 dB	Formula: Peak code domai Peak code domain error =	n error + TT -14 dB

Test	Minimum Requi 25.10	rement in TS 01	Test Tolerance (TT)	Test Requirement in	TS 34.121
6.2 Reference sensitivity level	Îor = -106.7 dBm / 3.84 MHz DPCH_Ec = -117 dBm / 3.84 MHz BER limit = 0.001		0.7 dB	Formula: Îor+ TT TT BER limit unchar	DPCH_Ec + ged
				lor = 3.84 MHz DPCH_Ec = -116.3 c	-106 dBm / IBm / 3.84 MHz
6.3 Maximum input level	-25 dBm lor -19 dBc DPCH_E	c/lor	0.7 dB	Formula: lor-TT lor = -25.7 dBm	
6.4 Adjacent Channel Selectivity	for = -92.7 dBm / 3.84 MHz DPCH_Ec = -103 dBm / 3.84 MHz loac (modulated) = -52 dBm/3.84 MHz BER limit = 0.001		0 dB	Formula: Îor unchanged DPCH_Ec uncha Ioac – TT BER limit unchar Ioac = -52 dBm/3.84 MHz	nged ged
6.5 Blocking Characteristics	See Table 6.5.3 and 6.5.4. in TS34.121 BER limit = 0.001		0 dB	Formula: I blocking (modulated) - TT (d I blocking (CW) - TT (dBm) BER limit unchanged	dBm/3.84MHz)
6.6 Spurious Response	Iblocking(CW) –44 dBm Fuw: Spurious response frequencies BER limit = 0.001		0 dB	Formula: I _{blocking} (CW) - T Fuw unchanged BER limit unchanged I _{blocking} (CW) = -44 dBm	Г (dBm)
6.7 Intermodulation Characteristics	louw1 (CW) -46 dBm louw2 (modulated) -46 dBm / 3.84 MHz Fuw1 (offset) 10 MHz Fuw2 (offset) 20 MHz lor = -103.7 dBm/3.84 MHz DPCH_Ec = -114 dBm/3.84 BER limit = 0.001		0 dB	Formula: Ior + TT DPCH_Ec + TT Iouw1 level unch Iouw2 level unch BER limit unchar	anged anged iged.
6.8 Spurious Emissions				Formula: Maximum level - Add zero to all the values Level in table 6.8.1.	- TT of Maximum
	Frequency Band	Maximum level		Frequency Band	Maximum level
	9kHz ≤ f < 1GHz	-57dBm /100kHz	0 dB	9kHz ≤ f < 1GHz	-57dBm /100kHz
	1GHz ≤ f ≤ 12.75GHz	-47dBm /1MHz	0 dB	1GHz ≤ f ≤ 2.2GHz	-47dBm /1MHz

Table F.4.2: Derivation of Test Requirements (Receiver tests)

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in	TS 34.121
			0 dB	$2.2GHz < f \le 4GHz$	-47dBm /1MHz
			0 dB	4GHz < f ≤ 12.75GHz	-47dBm /1MHz
	1920MHz ≤ f ≤ 1980MHz	-60dBm /3.84MHz	0 dB	1920MHz ≤ f ≤ 1980MHz	-60dBm /3.84MHz
	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz	0 dB	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.2 Demodulation of DPCH in static conditions	$\frac{DPCH_E_c}{I_{or}} -5.5 \text{ to } -16.6 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.3 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$
			$\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}}$ -5.4 to -16.5 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 1-4	$\frac{DPCH_E_c}{I_{or}} -2.2 \text{ to } -15.0$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\underline{DPCH_E_c}$ I_{or} 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} + \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -2.1 \text{ to } -14.9 \text{ dB}$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 5-8	$\frac{DPCH_E_c}{I_{or}} -3.2 \text{ to } -7.7 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -3.1 \text{ to } -7.6 \text{ dB}$

Table F.4.3: Derivation of Test Requirements (Performance tests)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 9-12	$\frac{DPCH_E_c}{I_{or}} -4.4 \text{ to } -11.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_{-}E_{c}}{I_{or}} -4.3 \text{ to } -11.7 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 13-16	$\frac{DPCH_E_c}{I_{or}} -2.2 \text{ to } -15.0 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.6$ $\frac{DPCH_E_c}{I_{or}} -2.1 \text{ to } -14.9 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 17-20	$\frac{DPCH_E_c}{I_{or}} -1.4 \text{ to } -8.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -1.3 \text{ to } -8.7 \text{ dB}$
7.4 Demodulation of DPCH in moving propagation conditions	$\frac{DPCH_E_c}{I_{or}} -10.9 \text{ to } -14.5$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.4 \text{ dB}$ $\frac{DPCH_{-}E_{c}}{I_{or}} -10.8 \text{ to} -14.4 \text{ dB}:$

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.5 Demodulation of DPCH birth-death propagation conditions	$\frac{DPCH_E_c}{I_{or}} -8.7 \text{ to } -12.6 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.4 \text{ dB}$ $\frac{DPCH_{-}E_{c}}{I_{or}} -18.6 \text{ to } -12.5 \text{ dB}:$
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH_E_c}{I_{or}} -16.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 16.7 \text{ dB}:$
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH_E_c}{I_{or}} -18 \text{ to } -18.3 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 17.9 \text{ to } -18.2 \text{ dB}:$
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH_E_c}{I_{or}} -7.5 \text{ to } -9.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 0 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 0.8 \text{ to } -2.2 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -7.4 \text{ to } -9.1 \text{ dB}$

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH_E_c}{I_{or}} -5.5 \text{ to } -15.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	0.1 dBfor $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	$\hat{I}_{or}/I_{oc} = \text{lor2/loc} = 6 \text{ to 0 dB}$	0.8 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = 6.8 \text{ to } 0.8 \text{ dB}$
			$\frac{DPCH_E_c}{I_{or}}$ -5.4 to -15.4 dB:
7.7.2 Combining of TPC commands Test 1	$\frac{DPCH_E_c}{I_{or}} \text{ -12 dB}$ lor1 and lor2 -60dBm	$0.1 \text{ dB} \\ \text{for} \\ \frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
		0dB for lor1 and lor2	$\frac{DPCH_E_c}{I_{or}} = -11.9 \text{ dB}:$ lor1 = -60dBm lor2 = -60dBm
			The absolute levels of lor1 and lor2 are not important to this test.
7.7.2 Combining of TPC commands Test 2	$\frac{DPCH_E_c}{I_{or}} - 12 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	$I_{oc} = -60 \text{ dBm}$	0.8 dB for	I_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 0 \text{ dB}$	\hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = 0.8 \text{ dB}$
			$\frac{DPCH_E_c}{I_{or}}$ -11,9 dB:
7.8.1 Power control in downlink constant BLER target	$\frac{DPCH_E_c}{I_{or}}$ -9 to -16 dB	0.1 dB for \underline{DPCH}_E_c	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	$I_{oc} = -60 \text{ dBm}$	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 9$ to -1 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.6 to -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -8.9 to -15.9 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.8.2, Power control in downlink initial convergence	$\frac{DPCH_E_c}{I_{or}} -8.1 \text{ to } -18.9 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	$\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	<i>I_{oc}</i> unchanged
			\hat{I}_{or}/I_{oc} = -0.4 dB
			$\frac{DPCH_E_c}{I_{or}} -8.0 \text{ to } -18.8 \text{ dB:}$
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH_E_c}{I_{or}} -13.3 \text{ dB}$	$\begin{bmatrix} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH}_E_c \\ I \end{bmatrix}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	$\hat{I}_{oc} = -60 \text{ dBm}$ $\hat{I}_{or} / I_{oc} = 5 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I_{or}/I_{oc} = ratio + 11 I_{oc} unchanged
			\hat{I}_{or}/I_{oc} = 5.6 dB
			$\frac{DPCH_E_c}{I_{or}} \text{ -13.2 dB:}$
7.9 Downlink compressed mode	$\frac{DPCH_E_c}{I_{or}}$ Test 1 -14.6 dB Test 3 -15.2 dB $I_{oc} = -60$ dBm $\hat{I}_{or}/I_{oc} = 9$ dB	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$
			$\hat{I}_{or}/I_{oc} = 9.6 \text{ dB}$ $\frac{DPCH_E_c}{E_c}$
			T _{or} Test 1 -14.5 dB Test 3 -15.1 dB:
7.10 Blind transport format detection Tests 1, 2, 3	$\frac{DPCH_E_c}{I_{or}}$ -17.7 to -18.4 dB	$\begin{array}{c} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH}_{E_c} \end{array}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	$I_{oc} = -60 \text{ dBm}$	I_{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	\hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$
			$\frac{DPCH_E_c}{I_{or}}$ -17.6 to -18.3 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH_E_c}{I_{or}} -13.0 \text{ to } -13.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	$\begin{array}{c} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH_E_c} \\ I_{or} \end{array}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	\hat{I}_{or}/I_{oc} = -3 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = -2.4 dB
			$\frac{DPCH_{-}E_{c}}{I_{or}}$ -12.9 to -13.7 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks			
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ lor/loc = 7.3 dB Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ $\text{lor/loc} = \text{ratio} - \text{TT}$ $I_{oc} \text{ unchanged}$ $\text{lor/loc} = 7 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ lor/loc = 10.27 dB Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ loc unchanged $\text{lor/loc} = 10.57 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -9.9 \text{ dB}$
8.2.2.2 Scenario 2: Multi carrier case	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = -3.4 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 2.2 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH _ E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_{-}E_{c}}{I_{or}} = ratio + TT$ Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH_{-}E_{c}}{I_{or}} -9.9 \text{ dB}:$
8.2.3 UTRAN to GSM Cell Re-Selection	TBD		
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ lor/loc = 0 dB	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio + TT$ $lor/loc = ratio + TT$ $(loc/Rxlev)_{test requirement} =$ $(loc/Rxlev)_{minimum requirement} + TT$ $lor/loc = 0.3 dB$ $\frac{CPICH _ E_c}{I_{or}} = -9.9 dB:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ lor/loc = - 5 dB	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ $\text{lor/loc} = \text{ratio} - \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} =$ $(\text{loc/Rxlev})_{\text{minimum requirement}} - \text{TT}$ $\text{lor/loc} = -5.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ lor/loc = 20 dB	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = ratio + TT$ $lor/loc = ratio + TT$ $(loc/Rxlev)_{test requirement} =$ $(loc/Rxlev)_{minimum requirement} + TT$ $lor/loc = 20.3 dB$ $\frac{CPICH_E_c}{I_{or}} = -9.9 dB:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ lor/loc = 20 dB	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH _ E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} =$ $(\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 20.3 \text{ dB}$ $\frac{CPICH _ E_c}{I_{or}} = -9.9 \text{ dB}:$
8.2.4 FDD/TDD cell re- selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover	TBD		
8.3.2 FDD/FDD Hard Handover	TBD		
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
in CELL_FACH			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.5.1 One frequency present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 7.3 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio - TT$ lor/loc = ratio - TT $I_{oc} \text{ unchanged}$ lor/loc = 7 dB
			$\frac{CPICH_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 10.27 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio + TT$ lor/loc = ratio + TT loc unchanged lor/loc = 10.57 dB $\frac{CPICH _ E_c}{I_{or}} -9.9 \text{ dB}:$
8.3.5.2 Two frequencies present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = -3.4 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 2.2 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio + TT$ Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH _ E_c}{I_{or}} -9.9 \text{ dB}:$
8.3.6 Cell Re-selection in CELL_PCH			
8.3.6.1 One frequency present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 7.3 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ $\text{lor/loc} = \text{ratio} - \text{TT}$ $I_{oc} \text{ unchanged}$ $\text{lor/loc} = 7 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 10.27 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ loc unchanged $\text{lor/loc} = 10.57 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -9.9 \text{ dB}$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.6.2 Two frequencies present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ lor/loc = -3.4 dB Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ lor/loc = ratio - TT loc unchanged loc ratio unchanged lor/loc = -3.7 dB $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 2.2 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH - E_c}{I_{or}} = ratio + TT$ lor/loc = ratio + TT loc unchanged loc ratio unchanged lor/loc = 2.5 dB $\frac{CPICH - E_c}{I_{or}} -9.9 dB:$
8.3.7 Cell Re-selection in URA_PCH			
8.3.7.1 One frequency present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 7.3 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ Ior/loc = ratio - TT $I_{oc} \text{ unchanged}$ Ior/loc = 7 dB $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 10.27 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ loc unchanged $\text{lor/loc} = 10.57 \text{ dB}$ $\frac{CPICH_{-}E_{c}}{I_{or}} - 9.9 \text{ dB}$
8.3.7.2 Two frequencies present in the neighbour list	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $lor/loc = -3.4 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ $\text{lor/loc} = \text{ratio} - \text{TT}$ loc unchanged $\text{loc ratio unchanged}$ $\text{lor/loc} = -3.7 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 2.2 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio + TT$ Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH _ E_c}{I_{or}} -9.9 \text{ dB}:$
8.4 RRC Connection Control	TBD		
8.4.1 RRC Re- establishment delay	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
842 Random Access	TRD RACH power	Measurement TT:	Test parameter settings unchanged
0.1.2 Random / 66633	difference nominal 3dB	Medodrement II.	rest parameter settings unonanged.
	+ 2dB LIE setting	Power difference	Power measurement:
	uncertainty		<u>opper limit TT</u>
			Lower mmit -11
0.5 Timin r. and	TDD	<u>-10D/+0.70D</u>	
8.5 Timing and	ТВО		
Signalling			
	TDD		
8.5.1 UE Transmit	IBD		
Timing	700		
8.6 UE Measurements	IBD		
Procedures			
8.6.1 FDD intra	ТВО		
trequency			
measurements			
8.6.1.1 Event triggered	TBD		
reporting in AWGN			
propagation conditions			
8.6.1.2 Event triggered	TBD		
reporting of multiple			
neighbours in AWGN			
propagation condition			
8.6.1.3 Event triggered	TBD		
reporting of two			
detectable neighbours			
in AWGN propagation			
condition			
8.6.1.4 Correct	TBD		
reporting of neighbours			
in fading propagation			
condition			
8.6.2 FDD inter	TBD		
frequency			
measurements			
8.6.2.1 Correct	TBD		
reporting of neighbours			
in AWGN propagation			
condition			
8.6.2.2 Correct	TBD		
reporting of neighbours	100		
in Fading propagation			
condition			
863TDD	TBD		
measurements			
8.6.3.1Correct	TBD		
neighbours in AWGN			
propagation condition			
8 7 Measurements	TBD		
Performance			
Requirements			
	TRD		
	שסד		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.1 Intra frequency measurements accuracy	TBD see table 8.7.1.1.1 and table 8.7.1.1.1.2	$\frac{\pm 1 \text{ dB for Ioc}}{\pm 0.3 \text{ dB for Ior/Ioc}}$ $\pm 0.1 \text{ dB}$	Any TT applied to the nominal setting shall fulfil:
		for Ec/Ior	<u>Test 1 (absolute and relative): Io</u> shall not go below -69dBm
			Test 2(absolute and relative): Io shall not go above -50 dBm
			Test 3 (absolute and relative): Io shall not go below -94 dBm
			<u>Ior/Ioc + TT</u>
			<u>∑ 1.4dB</u>
			Relative $\pm 0.3 dB$ for Ior/Ioc (cell1) $\pm 0.3 dB$ for Ior/Ioc (cell2) $\pm 0.1 dB$ for CPICH Ec/Ior(cell1) $\pm 0.1 dB$ for CPICH_Ec/Ior(cell2) $\Sigma 0.8 dB$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.2 Inter frequency measurement accuracy	TBD see table 8.7.1.2.1.1 and table 8.7.1.2.1.2	$\frac{\pm 1 \text{ dB for Ioc}}{\pm 0.3 \text{ dB for}}$ $\frac{\pm 0.3 \text{ dB for Ioc}}{\text{Ioc1/Ioc2}}$ $\frac{\pm 0.3 \text{ dB for Ior/Ioc}}{\pm 0.1 \text{ dB}}$ $\frac{\pm 0.1 \text{ dB}}{\text{for Ec/Ior}}$	Any TT applied to the nominal setting shall fulfil:Test 1: Io shall not go above -50 dBmTest 2: Io shall not go below -94 dBmIor/Ioc + TTTT on top of UE measurement accuracy: ± 0.3 dB for Ioc1/Ioc2 ± 0.3 dB for Ior/Ioc (cell1) ± 0.3 dB for Ior/Ioc (cell2) ± 0.1 dB for CPICH_Ec/Ior (cell1) ± 0.1 dB for CPICH Ec/Ior (cell2) ± 0.1 dB for CPICH Ec/Ior (cell2) ± 0.1 dB for CPICH Ec/Ior (cell2)
8.7.2 CPICH Ec/lo	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7. <u>2</u> 4.1 Intra	<u>TBD</u> table 8.7.2.1.1.1 and table 8.7.2.1.1.2	$\pm 1 \text{ dB for Ioc}$	Any TT applied to the nominal
measurements	10010-0.7.2.1.1.2	$\pm 0.3 \text{ ub 101 101/100}$	setting shan runn.
accuracy		for Ec/lor	Test 1(absolute and relative): Io shall not go above -50 dBm
			Test 2 (absolute and relative): Io shall not go below -87dBm
			Test 3 (absolute and relative): Io shall not go below -94 dBm
			<u>CPICH Ec/Io shall stay in the UE</u> accuracy ranges
			Ior/Ioc + TT
			<u>TT on top of UE measurement</u> <u>accuracy:</u> <u>Absolute</u> <u>±0.3 dB for Ior/Ioc</u> +0.1dB for CPICUL Factor
			$\sum 0.4 dB$
			$\begin{tabular}{ l l l l l l l l l l l l l l l l l l l$
			∑ <u>0.8dB</u>

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.21.2 Inter	TBD table 8.7.2.2.2.1 and	±1 dB for Ioc	Any TT applied to the nominal
frequency	table 8.7.2.2.2.2	± 0.3 dB for	setting shall fulfil:
measurement accuracy		loc1/loc2	Test 1: Io shall not go above -50
		+0.3 dB for Ior/Ioc	dBm
		±0.1dB	
		for Ec/lor	Test 2. Io shall not go below -87
			dBm
			Test 3. Io shall not go below -94
			dBm
			Jor/Joc + TT
			$\frac{101/10C + 11}{10}$
			TT on top of UE measurement
			accuracy:
			Ioc1=Ioc2.
			± 0.3 dB for Ior/Ioc (cell1)
			± 0.3 dB for Ior/Ioc (cell2)
			±0.1dB for CPICH Ec/Ior
			(cell1)
			± 0.1 dB for CPICH Ec/lor
			$\frac{1}{(cell2)}$
			<u>(ccn2)</u>
			$\Sigma 0.8 dB$
			<u>7.0.8 db</u>
8.7.3A UTRA Carrier	TBD		
ROOI 873B Transport			
channel BI FR	IBD		
8.7.3C UE Transmitted	Accuracy upper limit	0.7 dB	Formula: Upper accuracy limit + TT
power	Accuracy lower limit	•••• •=	Lower
	Depends on PUEMAX see		accuracy limit – TT
	table 8.7.3C.2.1		Add and subtract TT to all the values
			in table 8.7.3C.2.1.
8.7.4 SFN-CFN	TBD		
observed time			
difference			
8.7.5 SFN-SFN	TBD		
observed time			
difference			

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	15 25.133 $Io -10.9 dB = Ioc,$ Test 1: Io = -94 dBm Test2 : Io = -72dBm Test3 : Io = -50dBm Timing Accuracy ± 1.5 chip	1 dB for loc 0.3 dB for lor/loc [0.5 chip for timing accuracy]	Test 1: Io = -92.7 dBm, loc = -103.6 dBm Formula: loc*(1-TT _{loc} + (lor/loc-TT _{lor/loc})) ≥ -94
			Test 2: unchanged (no critical RF parameters) Test 3: lo = -51.3 dBm, loc = -62.2 dBm Formula: loc*(1+TT _{loc} + (lor/loc+TT _{lor/loc})) \leq -50
			Timing accuracy [±2.0] chip Formulas: Upper limit +TT Lower limit –TT
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

F.5 Acceptable uncertainty of Test Equipment (This clause is informative)

This informative clause specifies the critical parameters of the components of an overall Test System (e.g. Signal generators, Signal Analysers etc.) which are necessary when assembling a Test System that complies with clause F.1 Acceptable Uncertainty of Test System. These Test Equipment parameters are fundamental to the accuracy of the overall Test System and are unlikely to be improved upon through System Calibration.

F.5.1 Transmitter measurements

Test	Equipment accuracy	Test conditions
5.2 Maximum Output Power	Not critical	19 to 25 dBm
5.3 Frequency error	+ 10 Hz	0 to 500 Hz.
5.4.1 Open loop power control in uplink	Not critical	-43.7 dBm to 25 dBm
5.4.2 Inner loop power control in the	±0.1 dB relative over a 1.5 dB range	+25 dBm to
uplink – single step	± 0.15 dB relative over a 3.0 range	–50 dBm
	±0.2 dB relative over a 4.5 dB range	
5.4.2 Inner loop power control in the uplink – seven and ten steps	±0.3 dB relative over a 26 dB range	+25 dBm to –50 dBm
5.4.3 Minimum Output Power	Not critical	
5.4.4 Out-of-synchronisation handling of	±0.1 dB uncertainty in DPCCH_Ec/lor ratio	Ratio from –16.6 dB to –28 dB
output power: \underline{DPCCH}_{E_c}		
I or		
5.5.1 Transmit ON/OFF Power: UE	Not critical	-56 dBm (static power)
transmit OFF power		
5.5.2 Transmit ON/OFF Power: transmit	TBD	-56 dBm (dynamic power over
ON/OFF time mask		approx. 70 dB range)
5.6 Change of TFC: power control step size	±0.3 dB relative over a 9 dB range	+25 dBm to -50 dBm
5.7 Power setting in uplink compressed	Subset of 5.4.2	+25 dBm to -50 dBm
mode:- UE output power		-
5.8 Occupied Bandwidth	±100 kHz	For results between 4 and 6 MHz?
5.9 Spectrum emission mask	Not critical	P_Max
		Accuracy applies \pm 5 dB either
		side of UE requirements
5.10 ACLR	5 MHZ Offset ± 0.8 dB	19 to 25 dBm at 5 MHz onset for
		dB
	10 MHZ Offset ± 0.8 dB	25 dBm at 10 MHz offset for
		results between 45 dB and 55
		dB.
5.11 Spurious emissions	Not critical	19 to 25 dBm
5.12 Transmit Intermodulation	Not critical	19 to 25 dBm
5.13.1 Transmit modulation: EVM	±2.5 %	25 dBm to -21 dBm
	(for single code)	
5.13.2 Transmit modulation: peak code	±1.0dB	For readings between -10 dB to
domain error		–20 dB.

Table F.5.1: Equipment accuracy for transmitter measurements

F.5.2 Receiver measurements

Table F.5.2: Equipment accuracy for receiver measurements

Clause	Equipment accuracy	Test conditions
6.2 Reference sensitivity level	Not critical	
6.3 Maximum input level:	Not critical	
6.4 Adjacent channel selectivity	Not critical	
6.5 Blocking characteristics	Not critical	
6.6 Spurious Response	Not critical	
6.7 Intermod Characteristics	Not critical	
6.8 Spurious emissions	Not critical	

F.5.3 Performance measurements

Table GF.5.3: Equipment accuracy for performance measurements

Clause	Equipment accuracy	Test conditions
7.2 to 7.10	$\frac{DPCH_E_c}{I_{or}}$ ±0.1 dB	-2.2 to -18.9 dB

F.5.4 Requirement	s for support of RRM e F.5.4: Equipment accuracy for RRM	
Clause	Equipment accuracy	Test conditions
8.2.2 to 8.7.8	any_Ec/lor ±0.1 dB	
	lor//loc ±0.3 dB	
	<u>loc1/loc2 ±0.3 dB</u>	
	loc ±1 dB	

Tdoc #T1-031231

CHANGE REQUEST			
¥	34.121 CR 291 # rev - ^{# C}	urrent version: 5.0.0 [#]	
For <mark>HELP</mark> on ι	using this form, see bottom of this page or look at the p	oop-up text over the א symbols.	
Proposed change	affects: UICC apps# ME X Radio Acco	ess Network Core Network	
Title: #	Completionof annex F		
Source: भ्र	6 T1		
Work item code: भ	ß	Date: ೫ <mark>28/07/2003</mark>	
Category: ₩	 A R 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: #Rel-4Use one 0 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	e: # Follow up for Annex F due to newly developped	d test requirements	
Summary of chang Consequences if not approved:	ge: # Update of uncertainties and test tolerances # Annex F incomplete		
Clauses affected:	# Appex F		
Other specs affected:	Y N X Other core specifications X Test specifications X O&M Specifications		

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.

Annex F (normative): General test conditions and declarations

The requirements of this clause apply to all applicable tests in the present document.

Many of the tests in the present document measure a parameter relative to a value that is not fully specified in the UE specifications. For these tests, the Minimum Requirement is determined relative to a nominal value specified by the manufacturer.

When specified in a test, the manufacturer shall declare the nominal value of a parameter, or whether an option is supported.

In all the relevant clauses in this clause all Bit Error Ratio (BER), Block Error Ratio (BLER), False transmit format Detection Ratio (FDR) measurements shall be carried out according to the general rules for statistical testing in clause F.6.

F.1 Acceptable uncertainty of Test System

The maximum acceptable uncertainty of the Test System is specified below for each test, where appropriate. The Test System shall enable the stimulus signals in the test case to be adjusted to within the specified range, and the equipment under test to be measured with an uncertainty not exceeding the specified values. All ranges and uncertainties are absolute values, and are valid for a confidence level of 95 %, unless otherwise stated.

A confidence level of 95 % is the measurement uncertainty tolerance interval for a specific measurement that contains 95 % of the performance of a population of test equipment.

For RF tests it should be noted that the uncertainties in clause F.1 apply to the Test System operating into a nominal 50 ohm load and do not include system effects due to mismatch between the DUT and the Test System.

F.1.1 Measurement of test environments

The measurement accuracy of the UE test environments defined in annex G, Test environments shall be.

- Pressure ± 5 kPa.
- Temperature ±2 degrees.
- Relative Humidity ± 5 %.
- DC Voltage $\pm 1,0$ %.
- AC Voltage $\pm 1,5$ %.
- Vibration 10 %.
- Vibration frequency 0,1 Hz.

The above values shall apply unless the test environment is otherwise controlled and the specification for the control of the test environment specifies the uncertainty for the parameter.

F.1.2 Measurement of transmitter

Clause	Maximum Test System Uncertainty	Derivation of Test System
5.2 Movimum Output Dowor		Uncertainty
5.3 Frequency Error	±0,7 db	
5.4.1 Open loop power control in uplink	±1,0 dB	The uncertainty of this test is a combination of the downlink level setting error and the uplink power measurement that are uncorrelated.
		Formula = SQRT(source_level_error ² + power_meas_error ²)
5.4.2 Inner loop power control in the uplink - One step	±0,1 dB relative over a 1,5 dB range (1 dB and 0 dB step) ±0,15 dB relative over a 3,0 dB range (2 dB step) ±0,2 dB relative over a 4.5 dB range (3 dB step)	This accuracy is based on the linearity of the absolute power measurement of the test equipment.
5.4.2 Inner loop power control in the uplink – seven and ten steps	\pm 0,3 dB relative over a 26 dB range	
5.4.3 Minimum Output Power	±1,0 dB	Measured on a static signal
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH - E_c}{E_c}$	±0,4 dB	0.1 dB uncertainty in DPCCH ratio
1 _{or}		based on power meter measurement after the combiner Overall error is the sum of the \hat{I}_{or}/I_{oc} ratio error and the DPCCH_Ec/lor ratio. The absolute error of the AWGN loc is not important but is specified as 1.0 dB
5.5.1 Transmit OFF Power: (static case)	±1,0 dB	Measured on a static signal
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0,7 dB – 1,0 dB Off power (dynamic case) TBD	Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit (assume UE won't go above 24 nominal). For the off power, the accuracy of a two-pass measurement needs to be analysed.
5.6 Change of TFC: power control step size (7 dB step)	±0,3 dB relative over a 9 dB range	
5.7 Power setting in uplink compressed mode:- UE output power	Will be a subset of 5.4.2.	
5.8 Occupied Bandwidth	±100 kHz	Accuracy = $\pm 3^{*}$ RBW. Assume 30 kHz bandwidth.
5.9 Spectrum emission mask	±1,5 dB	

Table F.1.2: Maximum Test System Uncertainty for transmitter tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.10 ACLR	5 MHz offset: ± 0,8 dB	
	10 MHz offset: ± 0,8 dB	
5.11 Spurious emissions	\pm 2,0 dB for UE and coexistence bands for results > -60 dBm	
	\pm 3,0 dB for results < -60 dBm	
	Outside above: f≤2.2GHz: ± 1.5 dB 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB f > 4 GHz: ±4.0 dB	
5.12 Transmit Intermodulation	± 2.2 dB	CW Interferer error is 0.7 dB for the UE power RSS with 0.7 dB for CW setting = 1.0 dB Measurement error of intermod product is 0.7 dB for UE power RSS with 0.7 dB for relative = 1.0 dB Interferer has an effect of 2 times on the intermod product so overall test uncertainty is 2*1.0 RSS with 1.0 = 2.2 dB. Apply half any excess test system uncertainty to increase the interferer level
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	
5.13.2 Transmit modulation: peak code domain error	±1.0dB	

F.1.3 Measurement of receiver

Clause	Maximum Test System Uncertainty	Derivation of Test System
		Uncertainty
6.2 Reference sensitivity level	± 0.7 dB	
6.3 maximum input level:	± 0.7 dB	The critical parameter is the overall signal level and not the -19 dB DPCH_Ec/lor ratio. 0.7 dB absolute error due to signal measurement DPCH_Ec/lor ratio error is <0.1 dB but is not important so is ignored
6.4 Adjacent channel selectivity	± 1.1 dB	Overall system uncertainty comprises three quantities: 1. Wanted signal level error 2. Interferer signal level error 3. Additional impact of interferer ACLR Items 1 and 2 are assumed to be uncorrelated so can be root sum squared to provide the ratio error of the two signals. Assume for simplicity this ratio error is linearly added to the interferer ACLR. Test System uncertainty = SQRT (wanted_level_error ² + interferer_level_error ²) + ACLR effect. The ACLR effect is calculated by:(Formula to follow) (E.g. ACLR at 5 MHz of 51 dB gives additional error of .0765 dB. ACLR of 48 gives error of -0 15 dB.)
6.5 Blocking characteristics	System error with f <15 MHz offset: \pm 1.4 dB f >= 15 MHz offset and f <2 2 GHz + [1 0]	Using ± 0.7 dB for signal and interferer as currently defined and 68 dB ACLR @ 10 MHz.
	dB 2.2 GHz < f \leq 4 GHz: ±[1.7] dB f > 4 GHz: ±[3.1] dB	
6.6 Spurious Response	$f \le 2.2 \text{ GHz}: \pm 1.0 \text{ dB}$ 2.2 GHz < f ≤ 4 GHz: $\pm 1.7 \text{ dB}$ f > 4 GHz: $\pm 3.1 \text{ dB}$	

Table F.1.3: Maximum Test System Uncertainty for receiver tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
6.7 Intermodulation Characteristics	±1.3 dB	Similar issues to 7.4 ACS test. ETR028 says impact f the closer signal is twice that of the far signal. If both signals drop 1 dB, intermod product drops 2 dB. Formula = $\sqrt{(2 \cdot CW_{level} - error)^2 + (mod_{level} - error)^2}$ (Using CW interferer ±0.5 dB, modulated interferer ±0.5 dB, wanted signal ±0.7 dB) 1.3 dB! Broadband noise/ACLR not considered but may have impact.
6.8 Spurious emissions	\pm 3.0 dB for UE receive band (-78 dBm) Outside above: f≤2.2GHz: \pm 2.0 dB (-57 dBm) 2.2 GHz < f ≤ 4 GHz: \pm 2.0 dB (-47 dBm) f > 4 GHz: \pm 4.0 dB (-47 dBm)	
F.1.4 Performance requirement

Clause	Maximum Test Syster	n Uncertainty	Derivation of Test System
			Uncertainty
7.2 Demodulation in Static Propagation Condition	\hat{I}_{or}/I_{oc}	±0.3 dB	0.1 dB uncertainty in DPCH_Ec ratio
		±1.0	0.3 dB uncertainty in \hat{I}_{or}/I_{oc}
	DPCH E		based on power meter
	$\frac{I = I = I = -c}{I_{or}}$	±0.1 dB	combiner
			Overall error is the sum of the \hat{t}
			P_{or}/T_{oc} ratio error and the DPCH Ec/lor ratio but is not
			RSS for simplicity. The
			loc is not important for any
			tests in clause 7 but is specified as 1.0 dB.
7.3 Demodulation of DCH in multipath	\hat{I}_{or}/I_{oc}	±0.56 dB	Worst case gain uncertainty
Fading Propagation conditions	I _{oc}	±1.0	calibrated static profile is ± 0.5
	dB DPCH E		dB In addition the same ±0.3 dB
	$\frac{IIOII - I_c}{I_{or}}$	±0.1 dB	\hat{I}_{or}/I_{oc} ratio error as 7.2.
			These are uncorrelated so can
			Overall error in \hat{I}_{or}/I_{oc} is (0.5^2)
			$+0.3^{2})^{0.5} = 0.6 \text{ dB}$
7.4 Demodulation of DCH in Moving Propagation conditions	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
	I _{oc} dB	±1.0	
	$DPCH _ E_c$	+0.1 dB	
	I _{or}	±0.1 uD	
7.5 Demodulation of DCH in Birth-Death Propagation conditions	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
		±1.0	
	$DPCH E_c$		
	I_{or}	±0.1 dB	
7.6.1 Demodulation of DCH in open loop	\hat{I}_{or}/I_{oc}	±0.8 dB	Worst case gain uncertainty due to the fader from the
		±1.0	calibrated static profile is ± 0.5
	ab DPCH E		dB per output In addition the same ±0.3 dB
	$\frac{I_{or}}{I_{or}}$	±0.1 dB	\hat{I}_{or}/I_{oc} ratio error as 7.2.
			These are uncorrelated so can be RSS.
			Overall error in \hat{I}_{or}/I_{oc} is (0.5 ²
			$+0.5^{2}+0.3^{2})^{0.5}=0.768$ dB.

Table F.1.4: Maximum Test System Uncertainty for Performance Requirements

Clause	Maximum Te	est System Uncertainty	Derivation of Test System Uncertainty
7.6.2 Demodulation of DCH in closed	\hat{I}_{or}/I_{oc}	±0.8 dB	Same as 7.6.1
loop Transmit diversity mode	Iac	±1.0	
	dB		
	$DPCH _E_c$	+0.1 dP	
	I _{or}	±0.1 ub	
7.6.3, Demodulation of DCH in site	\hat{I}_{ar}/I_{aa}	±0.8 dB	Same as 7.6.1
selection diversity Transmission power	I	+1.0	
control mode	dB	21.0	
	$DPCH E_c$		
	I_{or}	±0.1 dB	
7.7.1 Demodulation in inter-cell soft	$\hat{I}_{\mu\nu}/I_{\mu\nu}$	±0.8 dB	Same as 7.6.1
Handover	I	+1 0	
	dB	21.0	
	$DPCH _ E_c$		
	$\frac{I_{or}}{I_{or}}$	±0.1 dB	
7.7.2 Combining of TPC commands Test	lor1,lor2	±1.0 dB	Test is looking for changes in
1	<u>DPCH_E_c</u>	+0.1 dB	power - need to allow for
	I _{or}	±0.1 dD	relaxation in criteria for power
			dB
7.7.2 Combining of TPC commands Test	\hat{I}_{or}/I_{oc}	±0.8 dB	Same as 7.6.1
2	I _{ac}	±1.0	
	dB		
	$DPCH _ E_c$		
	I _{or}	±0.1 UD	
7.8.1 Power control in downlink constant	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
DLER larger	I _{oc}	±1.0	
	dB		
	$DPCH _ E_c$	+0.1 dB	
	I _{or}	10.1 GD	
7.8.2, Power control in downlink initial	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
convergence	I _{oc}	±1.0	
	dB		
	<u>DPCH_E_c</u>	+0.1 dB	
	I _{or}	10.11 00	
7.8.3, Power control in downlink: wind up	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
enects	I _{oc}	±1.0	
	dB		
	$\underline{DPCH _ E_c}$	±0.1 dB	
	I _{or}		
7.9 Downlink compressed mode	\hat{I}_{or}/I_{oc}	±0.6 dB	Same as 7.3
	I _{oc}	±1.0	
	dB		
	$\frac{DPCH _ E_c}{I}$	±0.1 dB	
	I _{or}		

, ,	Uncertainty
\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 7.2
<i>I_{oc}</i> ±1.0	
$\frac{DPCH_E_c}{I_{or}}$ ±0.1 dB	
î /r	Same as 7.3
I_{or}/I_{oc} ±0.6 dB	Game as 7.5
I_{oc} ±1.0	
$\frac{DPCH_E_c}{I_{or}}$ ±0.1 dB	
Î _{or} I _{oc} IB DI	$\frac{I_{or}}{I_{oc}} \pm 0.6 \text{ dB} \pm 1.0$ $\frac{PCH - E_c}{I_{or}} \pm 0.1 \text{ dB}$

F.1.5 Requirements for support of RRM

Clause	Maximum Test System Uncertainty	Derivation of Test System
8.2 Idle Mode Tasks		
8.2.2 Cell Re-Selection		
8.2.2.1 Scenario 1: Single carrier case	\hat{I}_{or}/I_{oc} ±0.3 dB I_{oc} ±1.0 dB	0.1 dB uncertainty in CPICH_Ec ratio
	$\frac{CPICH_E_c}{I_{or}} = \pm 0.1 \text{ dB}$	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner
		The absolute error of the AWGN is specified as 1.0 dB.
8.2.2.2 Scenario 2: Multi carrier case	\hat{I}_{or}/I_{oc} ±0.3 dB	0.1 dB uncertainty in
	1.0 dB	CPICH_Ec ratio
		0.3 dB uncertainty in I_{or}/I_{oc}
	I_{oc1}/I_{oc2} ±0.3 dB	based on power meter
	$\frac{CPICH_E_c}{I}$ ±0.1 dB	measurement after the combiner
	l or	0.3 dB uncertainty in loc1/loc2 based on power meter measurement after the combiner
		Overall error for the CPICH_Ec/lo is the sum of the \hat{I}_{or}/I_{oc} ratio error and the CPICH_Ec/lor ratio.
		The absolute error of the AWGN is specified as 1.0 dB.
8.2.3 UTRAN to GSM Cell Re-Selection		
8.2.3.1 Scenario 1: Both UTRA and GSM	\hat{I}_{or}/I_{oc} ±0.3 dB	0.1 dB uncertainty in
level changed	$I_{oc}/RXLEV$ ±0.3 dB	CPICH_EC ratio
	<i>I</i> _{ac} ±1.0 dB	0.2 dB upcontainty in \hat{I} /I
	RXLEV ±1.0 dB	0.3 dB uncertainty in I_{or}/I_{oc}
		based on power meter
	$CPICH _E_c$	combiner
	= ±0.1 dB	
	or	loc/RXLEV based on power meter measurement after the combiner
		The absolute error of the AWGN is specified as 1.0 dB.
		RXLEV is specified as 1.0 dB.

Table F.1.5: Maximum Test System Uncertainty for Radio Resource Management Tests

Clause	Maximum Test S	ystem Uncertainty	Derivation of Test System Uncertainty
8.2.3.2 Scenario 2: Only UTRA level	$\hat{I}_{}/I_{}$	±0.3 dB	Same as 8.2.3.1
changed	$I_{oc}/RXLEV$	±0.3 dB	
	I	+1 0 dB	
		±1.0 dB	
		±1.0 UD	
	$\frac{CPICH_E_c}{I_{or}}$	±0.1 dB	
8.2.4 FDD/TDD cell re-selection	\hat{I}_{or}/I_{oc}	±0.3 dB	Same as 8.2.2.2
	I _{oc}	±1.0 dB	
	I_{oc1}/I_{oc2}	±0.3 dB	
	$\frac{CPICH_E_c}{I_{or}}$	±0.1 dB	
8.3 UTRAN Connected Mode Mobility			
8.3.1 FDD/FDD Soft Handover			No test case
8.3.2 FDD/FDD Hard Handover	TBD		
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
8.3.5 Cell Re-selection in CELL_FACH			
8.3.5.1 One frequency present in the	Same as 8.2.2.1		Same as 8.2.2.1
8.3.5.2 Two frequencies present in the	Same as 8.2.2.2		Same as 8.2.2.2
neighbour list			
8.3.6 Cell Re-selection in CELL_PCH	0		0
neighbour list	Same as 8.2.2.1		Same as 8.2.2.1
8.3.6.2 Two frequencies present in the neighbour list	Same as 8.2.2.2		Same as 8.2.2.2
8.3.7 Cell Re-selection in URA_PCH			
8.3.7.1 One frequency present in the	Same as 8.2.2.1		Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2		Same as 8.2.2.2
8.4 RRC Connection Control	TBD		
8.4.1 RRC Re-establishment delay			

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.4.2 Random Access	Settings.	0.1 dB uncertainty in AICH_Ec
	$\frac{\hat{l}}{\hat{l}}$ +0.3 dB	ratio
		0.3 dB uncertainty in \hat{I} /I
	I_{OC} ±1.0 dB	
	$AICH _E_c$	based on power meter
	$\frac{1}{I_{or}}$ ±0.1 dB	combiner
		Overall error is the sum of the
		I_{or}/I_{oc} ratio error and the
		AICH_Ec/lor ratio.
		The absolute error of the AWGN is specified as 1.0 dB
	Measurements:	Power difference:
	Power difference. ± 1dB	Assume symmetric meas error
	Maximum Power: same as 5.5.2	±1.0 dB comprising RSS of: -
		0.7 dB downlink error plus -0.7 dB meas error.
		Maximum Power:
		Assume asymmetric meas
		error -1.0 dB / 0.7 dB
		comprising RSS of: -0.7 dB
		downlink error plus -0.7 dB
		upper limit
8.5 Timing and Signalling Characteristics		
8.5.1 UE Transmit Timing	I +1.0 dB	0.1 dB uncertainty in
		DPCH_Ec ratio
	I_{or1}/I_{or2} ±0.3 dB	
	DPCH E	0.3 dB uncertainty in for f/for2
	$\frac{DT OT - D_c}{4} = \pm 0.1 \text{ dB}$	measurement after the
	I _{or}	combiner
		The absolute error of the lor is specified as 1.0 dB.
8.6 UE Measurements Procedures		
8.6.1 FDD intra frequency measurements		
8.6.1.1 Event triggered reporting in	TBD	
AWGN propagation conditions		
8.6.1.2 Event triggered reporting of	IBD	
propagation condition		
8.6.1.3 Event triggered reporting of two	TBD	
detectable neighbours in AWGN		
propagation condition		
8.6.1.4 Correct reporting of neighbours in	TBD	
fading propagation condition		
8.6.2 FDD inter frequency measurements		
8.6.2.1 Correct reporting of neighbours in	ТВО	
Avv GN propagation condition		
Fading propagation condition		
8.6.3 TDD measurements	TBD	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD	
8.7 Measurements Performance		
Requirements		
8.7.1 CPICH RSCP		0 0004
8.7.1.1 Intra frequency measurements	I_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.1
accuracy	<i>I_{oc}</i> ±1.0 dB	
	$\frac{CPICH_E_c}{I}$ ±0.1 dB	
8712 Inter frequency measurement	\hat{I} / I \hat{I} \hat{I} \hat{I}	Same as 8 2 2 2
accuracy	I_{or}/I_{oc} ±0.3 dB	
	I_{oc} ±1.0 dB	
	I_{oc1}/I_{oc2} ±0.3 dB	
	$\frac{CPICH_E_c}{I_{c}}$ ±0.1 dB	
872 CPICH Ec/lo	Or	
8.7.24.1 Intra frequency measurements	\hat{I} /I ±0.3 dB	Same as 8.2.2.1
accuracy	I_{ac} ±1.0 dB	
	$\frac{CPICH _E_c}{\pm 0.1 \text{ dB}}$	
	I _{or}	
8.7.24.2 Inter frequency measurement	\hat{I}_{or}/I_{oc} ±0.3 dB	Same as 8.2.2.2
accuracy	<i>I_{oc}</i> ±1.0 dB	
	I_{oc1}/I_{oc2} ±0.3 dB	
	$\frac{CPICH_E_c}{I_{or}} = \pm 0.1 \text{ dB}$	
8.7.3A UTRA Carrier RSSI	\hat{I}_{or}/I_{oc} ±0.3 dB	0.3 dB uncertainty in \hat{I}_{ar}/I_{ac}
	<i>I</i> _{oc} ±1.0 dB	based on power meter
	I_{oc1}/I_{oc2} ±0.3 dB	measurement after the combiner
		0.3 dB uncertainty in loc1/loc2 based on power meter measurement after the combiner
		The absolute error of the AWGN is specified as 1.0 dB
8.7.3B Transport channel BLER	TBD	
8.7.3C UE Transmitted power	Mean power measurement ±0,7 dB	Downlink parameters are unimportant.
8.7.4 SFN-CFN observed time difference	TBD	
8.7.5 SFN-SFN observed time difference	TBD	

Clause	Maximum Test Syste	em Uncertainty	Derivation of Test System Uncertainty
8.7.6 UE Rx-Tx time difference	\hat{I}_{or}/I_{oc} I_{oc} Rx-Tx Timing Accuracy [±0.5 chip]	±0.3 dB ±1.0 dB	0.3 dB uncertainty in \hat{I}_{or}/I_{oc} based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB.
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

F.2 Test Tolerances (This clause is informative)

The Test Tolerances defined in this clause have been used to relax the Minimum Requirements in the present document to derive the Test Requirements.

The Test Tolerances are derived from Test System uncertainties, regulatory requirements and criticality to system performance. As a result, the Test Tolerances may sometimes be set to zero.

The test tolerances should not be modified for any reason e.g. to take account of commonly known test system errors (such as mismatch, cable loss, etc.).

F.2.1 Transmitter

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: $DPCCH _ E_c$	
5.4.4 Out-of-synchronisation handling of	0 ms
output power: transmit ON/OFF time	0 113
5.5.1 Transmit OFF power	1 0 dB
5.5.2 Transmit ON/OFE time mask	On power $\pm 0.7 \text{dB} / \pm 1.0 \text{dB}$
(dynamic case)	
	Off power TT [] dB
5.6 Change of TFC: power control step	0.3 dB
size	
5.7 Power setting in uplink compressed	See subset of 5.4.2
mode:- UE output power	
5.8 Occupied Bandwidth	0 kHz
5.9 Spectrum emission mask	1.5 dB (0 dB for additional requirements for Band II)
5.10 ACLR	0.8 dB for ratio
	0.0 dB for absolute power
5.11 Spurious emissions	0 dB
5.12 Transmit Intermodulation	0 dB
5.13.1 Transmit modulation: EVM	0%
5.13.2 Transmit modulation: peak code	1.0 dB
domain error	

Table F.2.1: Test Tolerances for transmitter tests.

F.2.2 Receiver

Table F.2.2: Test Tolerances for receiver tests.

Clause	Test Tolerance
6.2 Reference sensitivity level	0.7 dB
6.3 Maximum input level:	0.7 dB
6.4 Adjacent channel selectivity	0 dB
6.5 Blocking characteristics	0 dB
6.6 Spurious Response	0 dB
6.7 Intermodulation Characteristics	0 dB
6.8 Spurious emissions	0 dB

F.2.3 Performance requirements

Clause	Test Tolerance
7.2 Demodulation in Static Propagation	0.3 dB for \hat{I}_{ar}/I_{ac}
Condition	0.1 dB for DPCH_Ec/lor
7.3 Demodulation of DCH in multipath	0.6 dB for \hat{I}_{ar}/I_{ac}
Fading Propagation conditions	0.1 dB for DPCH_Ec/lor
7.4 Demodulation of DCH in Moving	0.6 dB for \hat{I}_{or}/I_{oc}
Propagation conditions	0.1 dB for DPCH_Ec/lor
7.5 Demodulation of DCH in Birth-Death	0.6 dB for \hat{I}_{or}/I_{oc}
Propagation conditions	0.1 dB for DPCH_Ec/lor
7.6.1 Demodulation of DCH in open loop	0.8 dB for \hat{I}_{or}/I_{oc}
I ransmit diversity mode	0.1 dB for DPCH_Ec/lor
7.6.2 Demodulation of DCH in closed	0.8 dB for \hat{I}_{or}/I_{oc}
loop Transmit diversity mode	0.1 dB for DPCH_Ec/lor
7.6.3, Demodulation of DCH in site	0.8 dB for \hat{I}_{ar}/I_{ac}
selection diversity Transmission power control mode	0.1 dB for DPCH_Ec/lor
7.7.1 Demodulation in inter-cell soft	0.8 dB for \hat{I}_{or}/I_{oc}
Handover conditions	0.1 dB for DPCH_Ec/lor
7.7.2 Combining of TPC commands Test	0 dB for lor1, lor2
1 770 Combining of TDC commondo Toot	0.1 dB for DPCH_Ec/lor
2	0.8 dB for I_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.8.1 Power control in downlink constant	0.6 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.8.2, Power control in downlink initial	0.6 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.8.3, Power control in downlink: wind up	0.6 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.9 Downlink compressed mode	0.6 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for DPCH_Ec/lor
7.10 Blind transport format detection	0.3 dB for \hat{I}_{or}/I_{oc}
1 ests 1, 2, 3	0.1 dB for DPCH_Ec/lor
7.10 Blind transport format detection	0.6 dB for \hat{I}_{or}/I_{oc}
1 ests 4, 5, 6	0.1 dB for DPCH_Ec/lor

Table F.2.3: Test Tolerances for Performance Requirements.

F.2.4 Requirements for support of RRM

Table F.2.4: Test Tolerances for Radio Resource Management Tests

Clause	Test Tolerance
8.2 Idle Mode Tasks	
8.2.2 Cell Re-Selection	
8.2.2.1 Scenario 1: Single carrier case	0.3 dB for $\hat{I}_{\perp}/I_{\perp}$
	0.1 dB for CPICH Ec/lor
8.2.2.2 Scenario 2: Multi carrier case	$0.2 \text{ dB for } \hat{I} / I$
	0.5 dB for P_{or}/P_{oc}
8.2.3 LITRAN to GSM Cell Re-Selection	0.1 dB for CPICH_EC/lor
8.2.3 1 Scenario 1: Both LITRA and GSM	^ /
level changed	0.3 dB for I_{or}/I_{oc}
5	0.1 dB for CPICH_Ec/lor
	0.3 dB for loc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level	0.3 dB for \hat{I}_{or}/I_{oc}
Changed	0.1 dB for CPICH Ec/lor
	0.3 dB for loc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for \hat{I}_{ac}/I_{ac}
	0.1 dB for CPICH Ec/lor
	0.3 dB for loc1/loc2
8.3 UTRAN Connected Mode Mobility	
8.3.1 FDD/FDD Soft Handover	
8.3.2 FDD/FDD Hard Handover	TBD
8.3.3 FDD/TDD Handover	TBD
UTRAN FDD to GSM	
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the	0.3 dB for \hat{I} /I
neighbour list	0.1 dB for CPICH Ec/lor
8.3.5.2 Two frequencies present in the	
neighbour list	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.3.6 Cell Re-selection in CELL_PCH	A (
8.3.6.1 One frequency present in the	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.3.6.2 Two frequencies present in the	$0.2 dP for \hat{I} / I$
neighbour list	0.3 dB for I_{or}/I_{oc}
9.2.7 Coll Do poloction in LIDA DOLL	0.1 dB for CPICH_Ec/lor
8.3.7 Cell Re-selection in URA_PCH	^ /
neighbour list	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.3.7.2 Two frequencies present in the	0.3 dB for \hat{I} /I
neighbour list	0.1 dB for CPICH Ec/lor
84 RRC Connection Control	
8.4.1 RRC Re-establishment delay	TBD

Clause	Test Tolerance
8.4.2 Random Access	Settings:
	0.3 dB for \hat{I}_{ar}/I_{ac}
	0.1 dB for AICH_Ec/lor
	Measurements:
	Power difference: ± 1dB
	Maximum Power: -1dB / +0.7dB
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD Intra frequency measurements	
AWGN propagation conditions	
8.6.1.2 Event triagered reporting of	TBD
multiple neighbours in AWGN	
propagation condition	
8.6.1.3 Event triggered reporting of two	TBD
detectable neighbours in AWGN	
propagation condition	
8.6.1.4 Correct reporting of neighbours in	IBD
8.6.2 EDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in	TBD
AWGN propagation condition	
8.6.2.2 Correct reporting of neighbours in	TBD
Fading propagation condition	
8.6.3 TDD measurements	
8.6.3.1Correct reporting of TDD	TBD
neighbours in AWGN propagation	
8.7 Measurements Performance	IBD
8 7 1 CPICH RSCP	
8.7.1.1 Intra frequency measurements	$\hat{\mathbf{r}}$
accuracy	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
	1.0 dB for loc
8.7.1.2 Inter frequency measurement accuracy	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
	0.3 dB for loc1/loc2
	1.0 dB for loc
8.7.2 CPICH EC/IO	
accuracy	0.3 dB for I_{or}/I_{oc}
	0.1 dB for CPICH_Ec/lor
8.7.24.2 Inter frequency measurement	0.3 dB for \hat{I}_{or}/I_{oc}
	0.1 dB for CPICH Ec/lor
8.7.3A UTRA Carrier RSSI	\hat{I}
	U.3 dB for I_{or}/I_{oc}
	1.0 dB for loc
8.7.3B Transport channel BLER	
8.7.3C UE Transmitted power	test system
8.7.4 SFN-CFN observed time difference	
8.7.5 SFN-SFN observed time difference	

|

Clause	Test Tolerance
8.7.6 UE Rx-Tx time difference	0.3 dB for \hat{I}_{or}/I_{oc}
	1.0 dB for loc [0.5 chip] for Rx-Tx Timing Accuracy
8.7.7 Observed time difference to GSM cell	TBD
8.7.8 P-CCPCH RSCP	TBD

F.3 Interpretation of measurement results

The measurement results returned by the Test System are compared – without any modification – against the Test Requirements as defined by the shared risk principle.

The Shared Risk principle is defined in ETR 273-1-2 clause 6.5.

The actual measurement uncertainty of the Test System for the measurement of each parameter shall be included in the test report.

The recorded value for the Test System uncertainty shall be, for each measurement, equal to or lower than the appropriate figure in clause F.1 of the present document.

If the Test System for a test is known to have a measurement uncertainty greater than that specified in clause F.1, it is still permitted to use this apparatus provided that an adjustment is made value as follows. Any additional uncertainty in the Test System over and above that specified in clause F.1 shall be used to tighten the Test Requirement – making the test harder to pass. (For some tests e.g. receiver tests, this may require modification of stimulus signals). This procedure will ensure that a Test System not compliant with clause F.1does not increase the chance of passing a device under test where that device would otherwise have failed the test if a Test System compliant with clause F.1 had been used.

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 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = $\pm 1/-3$ dB Power class 2 (27 dBm) Tolerance = $\pm 1/-3$ dB Power class 3 (24 dBm) Tolerance = $\pm 1/-3$ dB Power class 4 (21 dBm) Tolerance = ± 2 dB	0.7 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For power classes 1-3: Upper Tolerance limit = +1.7 dB Lower Tolerance limit = -3.7 dB For power class 4: Upper Tolerance limit = +2.7 dB Lower Tolerance limit = -2.7 dB
5.3 Frequency Error	The UE modulated carrier frequency shall be accurate to within ± 0.1 ppm compared to the carrier frequency received from the Node B.	10 Hz	Formula: modulated carrier frequency error + TT modulated carrier frequency error = \pm (0.1 ppm + 10 Hz).
5.4.1 Open loop power control in the uplink	Open loop power control tolerance ±9 dB (Normal) Open loop power control tolerance ±12 dB (Normal)	1.0 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT For Normal conditions: Upper Tolerance limit = +10 dB Lower Tolerance limit = -10 dB For Extreme conditions: Upper Tolerance limit = +13 dB Lower Tolerance limit = -13 dB
5.4.2 Inner loop power control in uplink	See table 5.4.2.1 and 5,4,2,2	0.25dB 0.15 dB 0.2 dB 0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT
5.4.3 Minimum Output Power	UE minimum transmit power shall be less than –50 dBm	1.0 dB	Formula: UE minimum transmit power + TT UE minimum transmit power = -49 dBm

Table F.4.1: Derivation of Test Requirements (Transmitter tests)

Test	Minimum Requirement in TS 25.101	Test Tolerance	Test Requirement in TS 34.121
5.4.4 Out-of- synchronisation handling of output power:	$\frac{DPCCH_E_c}{I_{or}} \text{ levels}$ AB: -22 dB BD: -28 dB DE: -24 dB EF: -18 dB transmit ON/OFF time 200ms $\frac{DPDCH_E_c}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or} / I_{oc} = -1 \text{ dB}$	(TT) 0.4 dB for <u>DPCCH_E</u> I _{or} 0 ms for timing measurem ent	Formulas: Ratio between A and B + TT Ratio between B and D – TT Ratio between D and E – TT Ratio between E and F + TT transmit ON/OFF time + TT timing $\frac{DPDCH_{-}E_{c}}{I_{or}} = -16.6 \text{ dB}$ $\hat{I}_{or} / I_{oc} = -1 \text{ dB}$ $\frac{DPCCH_{-}E_{c}}{I_{or}} \text{ levels:}$ $\frac{I_{or}}{AB: -21.6 \text{ dB}}$ $DE: -28.4 \text{ dB}$ $DE: -24.4 \text{ dB}$ $EF: -17.6 \text{ dB}$ transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = -55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = I IdBm

5.6 Change of TFC: power control step size TFC step size = +5 to +9 dB 0.3 dB Formula: Upper Tolerance limit + TT Lower 5.7 Power setting in uplink compressed mode Various TBD Upper limit = -4.7 dB 5.7 Power setting in uplink compressed mode Various TBD TBD 5.8 Occupied Bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be -50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Minimum requirement + TT Lower limit + TT Power Classes 3 and 4: UE c	Test	Minimum Require 25.101	ment in TS	Test Tolerance (TT)	Test Requirement in	TS 34.121
power control step size Lower 5.7 Power setting in uplink compressed mode Various TBD (Subset of 5.4.2) TBD 5.8 Occupied Bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Norupite of 3.42 Mcps. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the ACLR shall be higher than the ACLR limit: 33 dB 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 33 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement semission 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement s table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirement nt Ninimum Requirement + TT Add zero to all the values of Minimum Requirements nt able 5.11.1a and 5.11.1b.	5.6 Change of TFC:	TFC step size = +5	to +9 dB	0.3 dB	Formula: Upper Tolerance	e limit + TT
5.7 Power setting in uplink compressed mode Various TBD (Subset of 5.4.2) TBD (Subset of 5.4.2) TBD 5.8 Occupied Bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in 73.84 Mcps. 1.5 dB Formula: Minimum requirement + TT Lower limit + TT 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement 19 kHz ≤ f < 150	power control step size				Tolerance limit – TT	Lower
5.7 Power setting in uplink compressed mode Various TBD TBD 5.8 Occupied Bandwidth The occupied channel beandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth : + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. 1.5 dB Formula: Minimum requirement entries in TS25.101 Table 6.10. 5.10 Adjacent Channel Leakage Power Ratio (ACLR shall be higher than -50 dBm the the ACLR shall be higher than the values specified below. 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -50 MHz, ACLR limit: 33 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: MCLR limit - TT S.11 Spurious Frequency Band Minimum Requirement + TT Add zero to all the values of Minimum Requirement + TT Add zero to all the values of Minimum Requirement + 0 MHz or -10 MHz, ACLR limit: 42.2 dB Formula: ACLR limit - TT 5.11 Spurious Frequency Band Minimum Requirement + TT Add zero to all the values of Minimum Requirement + TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b. Formula: Minimum Requirement + TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.					Upper limit = -4.7 dB	
toping essed The occupied channel bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 kHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Minimum requirement + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirement nt	5.7 Power setting in	Various		TBD (Subset of	TBD	
5.8 Occupied Bandwidth The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps. 0 KHz Formula: occupied channel bandwidth: + TT 5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Minimum requirement + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Zero test tolerance is applied for Additional requirements. The lower limit shall be –4.50 dBm / 3.84 MHz or which ever is higher. 0.0 dB Formula: AcLR limit - TT Hower limit shall be –4.50 dBm / 3.84 MHz or which ever is higher. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32.2 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt Minimum Requirement nt Frequency Band Minimum Requirement nt Frequency Band Minimum Requirement nt Minimum Requirement nt Frequency Band Minimum Requirement nt Minimum Requirement nt	mode			(Subset of 5.4.2)		
5.9 Spectrum emission mask Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Formula: Minimum requirement + TT Lower limit + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher. 1.5 dB Lower limit + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. 2 ero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be –48.5 dBm / 3.84 MHz or which ever is higher. 5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: Absolute power threshold + TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +10 MHz or -10 MHz, arc -10 MHz, ACLR limit: 43 dB 5.11 Spurious Emissions Frequency Band Minimum Requirement nt Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirement nt 9 kHz ≤ f < 150	5.8 Occupied Bandwidth	The occupied chann bandwidth shall be I MHz based on a chi	nel ess than 5 p rate of	0 kHz	Formula: occupied channel	bandwidth: +
maskTS25.101 Table 6.10. The lower limit shall be -50 dBm / 3.84 MHz or which ever is higher.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 -50 dBm (Add 1.5 to Minimum requirements for Band II due to FCC regulatory requirements. The lower limit shall be -48.5 dBm / 3.84 MHz or which ever is higher.5.10 Adjacent Channel Leakage Power Ratio (ACLR)If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT9 Wer Classes 3 and 4: UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dBFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.5.11 Spurious EmissionsFrequency Band Ninimum Requirement ntMinimum Requirement ntFrequency Band Minimum Requirement nt9 KHz ≤ f < 150	5.9 Spectrum emission	Minimum requireme	nt defined in	1.5 dB	Formula: Minimum requirer	n = 5.0 MHz ment + TT
Ine lower limit shall be -50 dBm (3.84 MHz or which ever is higher.Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Zero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be -48.5 dBm / 3.84 MHz or which ever is higher.5.10 Adjacent Channel Leakage Power Ratio (ACLR)If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT9 wer Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dB5.11 Spurious EmissionsFrequency Band Minimum RequirementFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.9 kHz ≤ f < 150	mask	TS25.101 Table 6.1	0.		Lower limit + TT	
higher.Zero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be -48.5 dBm / 3.84 MHz or which ever is higher.5.10 Adjacent Channel Leakage Power Ratio (ACLR)If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT9 KHz $\leq f < 150$ $-36dBm$ 0.8 dBFormula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB0.8 dBFormula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB5.11 Spurious EmissionsFormula: ACLR limit: 43 dBFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.5.11 Spurious EmissionsFrequency Band Ninimum Requirement ntFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.9 KHz $\leq f < 150$ $-36dBm$ 0 dB9 KHz $\leq f < 1$ GHz $-36dBm$ (duite)		/ 3.84 MHz or which	ever is		in TS25.101 Table 6.10.	ement entries
Additional requirements of band if due to FCC regulatory requirements. The lower limit shall be -48.5 dBm / 3.84 MHz or which ever is higher.5.10 Adjacent Channel Leakage Power Ratio (ACLR)If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT9.8 dBPower Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dB5.11 Spurious EmissionsFormula: ACLR limit: 43 dB0.8 dBFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requirement ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150		higher.			Zero test tolerance is applie	ed for
5.10 Adjacent Channel Leakage Power Ratio (ACLR) If the adjacent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below. 0.0 dB Formula: Absolute power threshold + TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB 0.8 dB Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB 5.11 Spurious Emissions Formula: Minimum Requirements in table 5.11.1a and 5.11.1b. Formula: Minimum Requirements in table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirement nt Frequency Band Minimum Requirement nt Frequency Band Minimum Requirement (11 + 2)					to FCC regulatory requirem	nents.
In the discent channel power is greater than -50 dBm then the ACLR shall be higher than the values specified below.0.0 dBFormula: Absolute power threshold + TT(ACLR) $ACLR$ shall be higher than the values specified below.0.0 dBFormula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB0.8 dBFormula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dB5.11 Spurious EmissionsFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requirement ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150					The lower limit shall be -48	3.5 dBm / 3.84
Leakage Power Ratio (ACLR)greater than -50 dBm then the ACLR shall be higher than the values specified below.0.8 dBFormula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB0.8 dBFormula: 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 dB5.11 Spurious EmissionsFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150	5.10 Adjacent Channel	If the adjacent chan	nel power is	0.0 dB	Formula: Absolute power th	nreshold + TT
$\frac{ V(CERV) }{ V(CERV) } = \frac{ V(CERV) }{ V($	Leakage Power Ratio	greater than –50 dB	m then the			
Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dB $0.8 dB$ Formula: ACLR limit - TT Power Classes 3 and 4: UE channel +5 MHz or -5 MHz, ACLR limit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB5.11 Spurious Emissions 5.11 Spurious Frequency Band $RequirementntFormula: Minimum Requirement+ TTAdd zero to all the values of MinimumRequirements in table 5.11.1a and5.11.1b.5.11 \text{ Spurious}EmissionsFrequency BandRequirementntMinimumRequirementntFrequency BandRequirementnt$	(AULK)	values specified bel	ow.			
OE channel +5 MHz of -5 MHz, ACLR limit: 33 dB UE channel +10 MHz or -10 MHz, ACLR limit: 43 dBPower 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 dB5.11 Spurious EmissionsFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150		Power Classes 3 an	d 4:	0.8 dB	Formula: ACLR limit - TT	
UE channel +10 MHz or -10 MHz, ACLR limit: 43 dBlimit: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB5.11 Spurious EmissionsFormula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement nt9 kHz ≤ f < 150		ACLR limit: 33 dB	. 0i -ɔ ivi⊓z,		UE channel +5 MHz or -5 N	/Hz, ACLR
MHZ, ACLR limit: 43 dB OE channel + 10 MHZ of -10 MHZ, ACLR S.11 Spurious Formula: Minimum Requirement+ TT Emissions Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirement nt 9 kHz ≤ f < 150		UE channel +10 MH	lz or -10		limit: 32.2 dB	
5.11 Spurious Emissions Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b. Frequency Band Minimum Requirement nt 9 kHz \leq f < 150		MHZ, ACLR limit: 43	3 dB		limit: 42.2 dB	U MHZ, ACLR
Add Zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement nt9 kHz \leq f < 150	5.11 Spurious				Formula: Minimum Require	ement+ TT
5.11.1b.Frequency BandMinimum Requireme ntFrequency BandMinimum Requirement9 kHz \leq f < 150	LIIISSIOIIS				Requirements in table 5.11	.1a and
Prequency bandInfinitianPrequency bandInfinitianRequireme ntRequireme ntRequireme $9 \text{ kHz} \le f < 150$ -36dBm 0 dB $9 \text{ kHz} \le f < 1 \text{ GHz}$ -36dBm		Fraguanay Band	Minimum		5.11.1b.	Minimum
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Frequency Banu	Requireme		Flequency Banu	Requirement
		0 kHz < f < 150	nt _36dBm	0 dB	9kHz < f < 1GHz	_36dBm
		kHz	/1kHz	0 QD		/1kHz
150 kHz ≤ f < 30 -36 dBm 0 dB 150 kHz ≤ f < 30 MHz -36 dBm (40kHz		150 kHz ≤ f < 30	-36dBm	0 dB	150 kHz ≤ f < 30 MHz	-36dBm
$\frac{MHZ}{1000} = \frac{1000}{-36} = \frac{1000}{100} = \frac{1000}{-36} = 10$		$\frac{\text{MHZ}}{30 \text{ MHz} \le f < 1000}$	/10KHZ	0 dB	30 MHz < f < 1000 MHz	/10KHZ _36dBm
MHz /100kHz 30 MHz 30 MHz 4000		MHz	/100kHz	0 GD		/100kHz
1 GHz ≤ f < 12.7530dBm 0 dB 1 GHz ≤ f < 2.2 GHz30dBm		1 GHz ≤ f < 12.75	–30dBm	0 dB	1 GHz ≤ f < 2.2 GHz	-30dBm
GHz /1MHz /1MHz		GHz	/1MHz			/1MHz
$0 \text{ dB} \qquad 2.2 \text{ GHz} \leq f < 4 \text{ GHz} \qquad -30 \text{dBm}$				0 dB	2.2 GHz ≤ f < 4 GHz	–30dBm /1M⊔-7
0 dB 4 GHz \leq f < 12.75 GHz -30dBm				0 dB	4 GHz ≤ f < 12.75 GHz	-30dBm
/1MHz						/1MHz
1893.5 MHZ < t < −41dBm 0 dB 1893.5 MHZ < t < 1919.6 −41dBm 1919.6 MHz /300kHz MHz /300kHz		1893.5 MHz < t < 1919.6 MHz	–41dBm /300kHz	U dB	1893.5 MHz < t < 1919.6 MHz	–41dBm /300kHz
925 MHz \le f \le 935 -67dBm 0 dB 925 MHz \le f \le 935 MHz -67dBm (400) Hz		925 MHz ≤ f ≤ 935	-67dBm	0 dB	925 MHz \leq f \leq 935 MHz	-67dBm

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in [•]	TS 34.121
	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 leve Intermod Products limits re unchanged. CW interferer level = -40 df	el – TT/2 main 3c
5.13.1 Transmit modulation: EVM	The measured EVM shall not exceed 17.5%.		0%	Formula: EVM limit + TT EVM limit = 17.5 %	
5.13.2 Transmit modulation: peak code domain error	The measured Peak code domain error shall not exceed -15 dB.		1.0 dB	Formula: Peak code domai Peak code domain error =	n error + TT -14 dB

Test	Minimum Requi 25.10	rement in TS)1	Test Tolerance (TT)	Test Requirement in	TS 34.121
6.2 Reference sensitivity level	Îor = -106.7 dBm / 3.84 MHz DPCH_Ec = -117 dBm / 3.84 MHz BER limit = 0.001		0.7 dB	Formula: Îor+ TT TT BER limit unchar	DPCH_Ec + ged
				lor = 3.84 MHz DPCH_Ec = -116.3 c	-106 dBm / IBm / 3.84 MHz
6.3 Maximum input level	-25 dBm lor -19 dBc DPCH_E	c/lor	0.7 dB	Formula: lor-TT lor = -25.7 dBm	
6.4 Adjacent Channel Selectivity	for = -92.7 dBm / 3.84 MHz DPCH_Ec = -103 dBm / 3.84 MHz loac (modulated) = -52 dBm/3.84 MHz BER limit = 0.001		0 dB	Formula: Îor unchanged DPCH_Ec uncha Ioac – TT BER limit unchar Ioac = -52 dBm/3.84 MHz	nged ged
6.5 Blocking Characteristics	See Table 6.5.3 and 6.5.4. in TS34.121 BER limit = 0.001		0 dB	Formula: I blocking (modulated) - TT (d I blocking (CW) - TT (dBm) BER limit unchanged	dBm/3.84MHz)
6.6 Spurious Response	Iblocking(CW) –44 dBm Fuw: Spurious response frequencies BER limit = 0.001		0 dB	Formula: I _{blocking} (CW) - T Fuw unchanged BER limit unchanged I _{blocking} (CW) = -44 dBm	Г (dBm)
6.7 Intermodulation Characteristics	louw1 (CW) -46 dBm louw2 (modulated) -46 dBm / 3.84 MHz Fuw1 (offset) 10 MHz Fuw2 (offset) 20 MHz lor = -103.7 dBm/3.84 MHz DPCH_Ec = -114 dBm/3.84 BER limit = 0.001		0 dB	Formula: Ior + TT DPCH_Ec + TT Iouw1 level unch Iouw2 level unch BER limit unchar	anged anged iged.
6.8 Spurious Emissions				Formula: Maximum level - Add zero to all the values Level in table 6.8.1.	- TT of Maximum
	Frequency Band	Maximum level		Frequency Band	Maximum level
	9kHz ≤ f < 1GHz	-57dBm /100kHz	0 dB	9kHz ≤ f < 1GHz	-57dBm /100kHz
	1GHz ≤ f ≤ 12.75GHz	-47dBm /1MHz	0 dB	1GHz ≤ f ≤ 2.2GHz	-47dBm /1MHz

Table F.4.2: Derivation of Test Requirements (Receiver tests)

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in	TS 34.121
			0 dB	$2.2GHz < f \le 4GHz$	-47dBm /1MHz
			0 dB	4GHz < f ≤ 12.75GHz	-47dBm /1MHz
	1920MHz ≤ f ≤ 1980MHz	-60dBm /3.84MHz	0 dB	1920MHz ≤ f ≤ 1980MHz	-60dBm /3.84MHz
	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz	0 dB	2110MHz ≤ f ≤ 2170MHz	-60dBm /3.84MHz

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.2 Demodulation of DPCH in static conditions	$\frac{DPCH_E_c}{I_{or}} -5.5 \text{ to } -16.6 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.3 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$
			$\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}}$ -5.4 to -16.5 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 1-4	$\frac{DPCH_E_c}{I_{or}} -2.2 \text{ to } -15.0$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\underline{DPCH_E_c}$ I_{or} 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} + \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -2.1 \text{ to } -14.9 \text{ dB}$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 5-8	$\frac{DPCH_E_c}{I_{or}} -3.2 \text{ to } -7.7 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -3.1 \text{ to } -7.6 \text{ dB}$

Table F.4.3: Derivation of Test Requirements (Performance tests)

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 9-12	$\frac{DPCH_E_c}{I_{or}} -4.4 \text{ to } -11.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ dB to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_{-}E_{c}}{I_{or}} -4.3 \text{ to } -11.7 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 13-16	$\frac{DPCH_E_c}{I_{or}} -2.2 \text{ to } -15.0 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.6$ $\frac{DPCH_E_c}{I_{or}} -2.1 \text{ to } -14.9 \text{ dB}:$
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 17-20	$\frac{DPCH_E_c}{I_{or}} -1.4 \text{ to } -8.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 6 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 6.6 \text{ to } -2.4 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -1.3 \text{ to } -8.7 \text{ dB}$
7.4 Demodulation of DPCH in moving propagation conditions	$\frac{DPCH_E_c}{I_{or}} -10.9 \text{ to } -14.5$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.4 \text{ dB}$ $\frac{DPCH_{-}E_{c}}{I_{or}} -10.8 \text{ to} -14.4 \text{ dB}:$

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.5 Demodulation of DPCH birth-death propagation conditions	$\frac{DPCH_E_c}{I_{or}} -8.7 \text{ to } -12.6 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = -0.4 \text{ dB}$ $\frac{DPCH_{-}E_{c}}{I_{or}} -18.6 \text{ to } -12.5 \text{ dB}:$
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH_E_c}{I_{or}} -16.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 16.7 \text{ dB}:$
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH_E_c}{I_{or}} -18 \text{ to } -18.3 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 9 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 9.8 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} - 17.9 \text{ to } -18.2 \text{ dB}:$
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH_E_c}{I_{or}} -7.5 \text{ to } -9.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$ $\hat{I}_{or}/I_{oc} = 0 \text{ to } -3 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.8 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$ $\hat{I}_{or}/I_{oc} = 0.8 \text{ to } -2.2 \text{ dB}$ $\frac{DPCH_E_c}{I_{or}} -7.4 \text{ to } -9.1 \text{ dB}$

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH_E_c}{I_{or}} -5.5 \text{ to } -15.2 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	0.1 dBfor $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	$\hat{I}_{or}/I_{oc} = \text{lor2/loc} = 6 \text{ to 0 dB}$	0.8 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = 6.8 \text{ to } 0.8 \text{ dB}$
			$\frac{DPCH_E_c}{I_{or}}$ -5.4 to -15.4 dB:
7.7.2 Combining of TPC commands Test 1	$\frac{DPCH_E_c}{I_{or}} \text{ -12 dB}$ lor1 and lor2 -60dBm	$0.1 \text{ dB} \\ \text{for} \\ \frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
		0dB for lor1 and lor2	$\frac{DPCH_E_c}{I_{or}} = -11.9 \text{ dB}:$ lor1 = -60dBm lor2 = -60dBm
			The absolute levels of lor1 and lor2 are not important to this test.
7.7.2 Combining of TPC commands Test 2	$\frac{DPCH_E_c}{I_{or}} - 12 \text{ dB}$	0.1 dB for $\frac{DPCH_E_c}{I}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	$I_{oc} = -60 \text{ dBm}$	0.8 dB for	I_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 0 \text{ dB}$	\hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = 0.8 \text{ dB}$
			$\frac{DPCH_E_c}{I_{or}}$ -11,9 dB:
7.8.1 Power control in downlink constant BLER target	$\frac{DPCH_E_c}{I_{or}}$ -9 to -16 dB	$\begin{array}{c} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH}_{E_c} \end{array}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	$I_{oc} = -60 \text{ dBm}$	I _{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = 9 \text{ to -1 dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = 9.6 to -0.4 dB
			$\frac{DPCH_E_c}{I_{or}}$ -8.9 to -15.9 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.8.2, Power control in downlink initial convergence	$\frac{DPCH_E_c}{I_{or}} -8.1 \text{ to } -18.9 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	$\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	<i>I_{oc}</i> unchanged
			\hat{I}_{or}/I_{oc} = -0.4 dB
			$\frac{DPCH_E_c}{I_{or}} -8.0 \text{ to } -18.8 \text{ dB:}$
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH_E_c}{I_{or}} -13.3 \text{ dB}$	$\begin{bmatrix} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH}_E_c \\ I \end{bmatrix}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$
	$\hat{I}_{oc} = -60 \text{ dBm}$ $\hat{I}_{or} / I_{oc} = 5 \text{ dB}$	0.6 dB for \hat{I}_{or}/I_{oc}	I_{or}/I_{oc} = ratio + 11 I_{oc} unchanged
			\hat{I}_{or}/I_{oc} = 5.6 dB
			$\frac{DPCH_E_c}{I_{or}} \text{ -13.2 dB:}$
7.9 Downlink compressed mode	$\frac{DPCH_E_c}{I_{or}}$ Test 1 -14.6 dB Test 3 -15.2 dB $I_{oc} = -60$ dBm $\hat{I}_{or}/I_{oc} = 9$ dB	0.1 dB for $\frac{DPCH_E_c}{I_{or}}$ 0.6 dB for \hat{I}_{or}/I_{oc}	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$ $I_{oc} \text{ unchanged}$
			$\hat{I}_{or}/I_{oc} = 9.6 \text{ dB}$ $\frac{DPCH_E_c}{E_c}$
			T _{or} Test 1 -14.5 dB Test 3 -15.1 dB:
7.10 Blind transport format detection Tests 1, 2, 3	$\frac{DPCH_E_c}{I_{or}}$ -17.7 to -18.4 dB	$\begin{array}{c} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH}_{E_c} \end{array}$	Formulas: $\frac{DPCH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$
	$I_{oc} = -60 \text{ dBm}$	I_{or}	\hat{I}_{or}/I_{oc} = ratio + TT
	$\hat{I}_{or}/I_{oc} = -1 \text{ dB}$	\hat{I}_{or}/I_{oc}	I _{oc} unchanged
			$\hat{I}_{or}/I_{oc} = -0.7 \text{ dB}$
			$\frac{DPCH_E_c}{I_{or}}$ -17.6 to -18.3 dB:

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH_E_c}{I_{or}} -13.0 \text{ to } -13.8 \text{ dB}$ $I_{oc} = -60 \text{ dBm}$	$\begin{array}{c} 0.1 \text{ dB} \\ \text{for} \\ \underline{DPCH_E_c} \\ I_{or} \end{array}$	Formulas: $\frac{DPCH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\hat{I}_{or}/I_{oc} = \text{ratio} + \text{TT}$
	\hat{I}_{or}/I_{oc} = -3 dB	0.6 dB for \hat{I}_{or}/I_{oc}	I _{oc} unchanged
			\hat{I}_{or}/I_{oc} = -2.4 dB
			$\frac{DPCH_{-}E_{c}}{I_{or}}$ -12.9 to -13.7 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2 Idle Mode Tasks			
8.2.2 Cell Re-Selection			
8.2.2.1 Scenario 1: Single carrier case	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ lor/loc = 7.3 dB Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ $\text{lor/loc} = \text{ratio} - \text{TT}$ $I_{oc} \text{ unchanged}$ $\text{lor/loc} = 7 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ lor/loc = 10.27 dB Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ loc unchanged $\text{lor/loc} = 10.57 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -9.9 \text{ dB}$
8.2.2.2 Scenario 2: Multi carrier case	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = -3.4 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = \text{ratio} - \text{TT}$ Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH _ E_c}{I_{or}} -10.1 \text{ dB}:$

Table F.4.4: Derivation of Test Requirements (RRM tests)

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 2.2 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH _ E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH_{-}E_{c}}{I_{or}} -9.9 \text{ dB}:$
8.2.3 UTRAN to GSM Cell Re-Selection	TBD		
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ lor/loc = 0 dB	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio + TT$ $lor/loc = ratio + TT$ $(loc/Rxlev)_{test requirement} =$ $(loc/Rxlev)_{minimum requirement} + TT$ $lor/loc = 0.3 dB$ $\frac{CPICH _ E_c}{I_{or}} = -9.9 dB:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ lor/loc = - 5 dB	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ $\text{lor/loc} = \text{ratio} - \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} =$ $(\text{loc/Rxlev})_{\text{minimum requirement}} - \text{TT}$ $\text{lor/loc} = -5.3 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ lor/loc = 20 dB	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH_E_c}{I_{or}} = ratio + TT$ $lor/loc = ratio + TT$ $(loc/Rxlev)_{test requirement} =$ $(loc/Rxlev)_{minimum requirement} + TT$ $lor/loc = 20.3 dB$ $\frac{CPICH_E_c}{I_{or}} = -9.9 dB:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ lor/loc = 20 dB	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc 0.3 dB for loc/RXLEV	Formulas: $\frac{CPICH _ E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ $(\text{loc/Rxlev})_{\text{test requirement}} =$ $(\text{loc/Rxlev})_{\text{minimum requirement}} + \text{TT}$ $\text{lor/loc} = 20.3 \text{ dB}$ $\frac{CPICH _ E_c}{I_{or}} = -9.9 \text{ dB}:$
8.2.4 FDD/TDD cell re- selection	TBD		
8.3 UTRAN Connected Mode Mobility	TBD		
8.3.1 FDD/FDD Soft Handover	TBD		
8.3.2 FDD/FDD Hard Handover	TBD		
8.3.3 FDD/TDD Handover	TBD		
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD		
in CELL_FACH			

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.5.1 One frequency present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 7.3 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio - TT$ lor/loc = ratio - TT $I_{oc} \text{ unchanged}$ lor/loc = 7 dB
			$\frac{CPICH_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 10.27 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio + TT$ lor/loc = ratio + TT loc unchanged lor/loc = 10.57 dB $\frac{CPICH _ E_c}{I_{or}} -9.9 \text{ dB}:$
8.3.5.2 Two frequencies present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = -3.4 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 2.2 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio + TT$ Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH _ E_c}{I_{or}} -9.9 \text{ dB}:$
8.3.6 Cell Re-selection in CELL_PCH			
8.3.6.1 One frequency present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 7.3 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ $\text{lor/loc} = \text{ratio} - \text{TT}$ $I_{oc} \text{ unchanged}$ $\text{lor/loc} = 7 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 10.27 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ loc unchanged $\text{lor/loc} = 10.57 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -9.9 \text{ dB}$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.6.2 Two frequencies present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = -3.4 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ lor/loc = ratio - TT loc unchanged loc ratio unchanged lor/loc = -3.7 dB $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 2.2 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH - E_c}{I_{or}} = ratio + TT$ lor/loc = ratio + TT loc unchanged loc ratio unchanged lor/loc = 2.5 dB $\frac{CPICH - E_c}{I_{or}} -9.9 dB:$
8.3.7 Cell Re-selection in URA_PCH			
8.3.7.1 One frequency present in the neighbour list	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 7.3 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ Ior/loc = ratio - TT $I_{oc} \text{ unchanged}$ Ior/loc = 7 dB $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}:$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 10.27 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_{-}E_{c}}{I_{or}} = \text{ratio} + \text{TT}$ $\text{lor/loc} = \text{ratio} + \text{TT}$ loc unchanged $\text{lor/loc} = 10.57 \text{ dB}$ $\frac{CPICH_{-}E_{c}}{I_{or}} - 9.9 \text{ dB}$
8.3.7.2 Two frequencies present in the neighbour list	$\frac{CPICH_{-}E_{c}}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $lor/loc = -3.4 \text{ dB}$ Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH_E_c}{I_{or}} = \text{ratio} - \text{TT}$ $\text{lor/loc} = \text{ratio} - \text{TT}$ loc unchanged $\text{loc ratio unchanged}$ $\text{lor/loc} = -3.7 \text{ dB}$ $\frac{CPICH_E_c}{I_{or}} -10.1 \text{ dB}$
	$\frac{CPICH_E_c}{I_{or}} = -10 \text{ dB}$ $I_{oc} = -70 \text{ dBm}$ $Ior/Ioc = 2.2 \text{ dB}$ Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1	0.1 dB for $\frac{CPICH_E_c}{I_{or}}$ 0.3 dB for lor/loc	Formulas: $\frac{CPICH _ E_c}{I_{or}} = ratio + TT$ Ior/Ioc = ratio + TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = 2.5 dB $\frac{CPICH _ E_c}{I_{or}} -9.9 \text{ dB}:$
8.4 RRC Connection Control	TBD		
8.4.1 RRC Re- establishment delay	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
842 Random Access	TRD RACH power	Measurement TT:	Test parameter settings unchanged
0.1.2 Random / 66633	difference nominal 3dB	Medodrement II.	rest parameter settings unonanged.
	+ 2dB LIE setting	Power difference	Power measurement:
	uncertainty		<u>opper limit TT</u>
			Lower mmit -11
0.5 Timin r. and	TDD	<u>-10D/+0.70D</u>	
8.5 Timing and	ТВО		
Signalling			
	TDD		
8.5.1 UE Transmit	IBD		
Timing	700		
8.6 UE Measurements	IBD		
Procedures			
8.6.1 FDD intra	ТВО		
trequency			
measurements			
8.6.1.1 Event triggered	TBD		
reporting in AWGN			
propagation conditions			
8.6.1.2 Event triggered	TBD		
reporting of multiple			
neighbours in AWGN			
propagation condition			
8.6.1.3 Event triggered	TBD		
reporting of two			
detectable neighbours			
in AWGN propagation			
condition			
8.6.1.4 Correct	TBD		
reporting of neighbours			
in fading propagation			
condition			
8.6.2 FDD inter	TBD		
frequency			
measurements			
8.6.2.1 Correct	TBD		
reporting of neighbours			
in AWGN propagation			
condition			
8.6.2.2 Correct	TBD		
reporting of neighbours	100		
in Fading propagation			
condition			
863TDD	TBD		
measurements			
8.6.3.1Correct	TBD		
neighbours in AWGN			
propagation condition			
8 7 Measurements	TBD		
Performance			
Requirements			
	TRD		
	שסד		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.1 Intra frequency measurements accuracy	TBD see table 8.7.1.1.1 and table 8.7.1.1.1.2	$\frac{\pm 1 \text{ dB for Ioc}}{\pm 0.3 \text{ dB for Ior/Ioc}}$ $\pm 0.1 \text{ dB}$	Any TT applied to the nominal setting shall fulfil:
		for Ec/Ior	<u>Test 1 (absolute and relative): Io</u> shall not go below -69dBm
			Test 2(absolute and relative): Io shall not go above -50 dBm
			Test 3 (absolute and relative): Io shall not go below -94 dBm
			<u>Ior/Ioc + TT</u>
			<u>∑ 1.4dB</u>
			Relative $\pm 0.3 dB$ for Ior/Ioc (cell1) $\pm 0.3 dB$ for Ior/Ioc (cell2) $\pm 0.1 dB$ for CPICH Ec/Ior(cell1) $\pm 0.1 dB$ for CPICH_Ec/Ior(cell2) $\Sigma 0.8 dB$

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.2 Inter frequency measurement accuracy	TBD see table 8.7.1.2.1.1 and table 8.7.1.2.1.2	$\frac{\pm 1 \text{ dB for Ioc}}{\pm 0.3 \text{ dB for}}$ $\frac{\pm 0.3 \text{ dB for Ioc}}{\text{Ioc1/Ioc2}}$ $\frac{\pm 0.3 \text{ dB for Ior/Ioc}}{\pm 0.1 \text{ dB}}$ $\frac{\pm 0.1 \text{ dB}}{\text{for Ec/Ior}}$	Any TT applied to the nominal setting shall fulfil:Test 1: Io shall not go above -50 dBmTest 2: Io shall not go below -94 dBmIor/Ioc + TTTT on top of UE measurement accuracy: ± 0.3 dB for Ioc1/Ioc2 ± 0.3 dB for Ior/Ioc (cell1) ± 0.3 dB for Ior/Ioc (cell2) ± 0.1 dB for CPICH_Ec/Ior (cell1) ± 0.1 dB for CPICH Ec/Ior (cell2) ± 0.1 dB for CPICH Ec/Ior (cell2) ± 0.1 dB for CPICH Ec/Ior (cell2)
8.7.2 CPICH Ec/lo	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7. <u>2</u> 4.1 Intra	<u>TBD</u> table 8.7.2.1.1.1 and table 8.7.2.1.1.2	$\pm 1 \text{ dB for Ioc}$	Any TT applied to the nominal
measurements	10010-0.7.2.1.1.2	$\pm 0.3 \text{ ub 101 101/100}$	setting shan runn.
accuracy		for Ec/lor	Test 1(absolute and relative): Io shall not go above -50 dBm
			<u>Test 2 (absolute and relative): Io</u> shall not go below -87dBm
			Test 3 (absolute and relative): Io shall not go below -94 dBm
			<u>CPICH Ec/Io shall stay in the UE</u> accuracy ranges
			Ior/Ioc + TT
			<u>TT on top of UE measurement</u> <u>accuracy:</u> <u>Absolute</u> <u>±0.3 dB for Ior/Ioc</u> +0.1dB for CPICUL Factor
			$\sum 0.4 dB$
			$\begin{tabular}{ l l l l l l l l l l l l l l l l l l l$
			∑ <u>0.8dB</u>
Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
------------------------	----------------------------------	------------------------	---------------------------------------
8.7.21.2 Inter	TBD table 8.7.2.2.2.1 and	±1 dB for Ioc	Any TT applied to the nominal
frequency	table 8.7.2.2.2.2	± 0.3 dB for	setting shall fulfil:
measurement accuracy		loc1/loc2	Test 1: Io shall not go above -50
		+0.3 dB for Ior/Ioc	dBm
		±0.1dB	
		for Ec/lor	Test 2. Io shall not go below -87
			dBm
			Test 3. Io shall not go below -94
			dBm
			Jor/Joc + TT
			$\frac{101/10C + 11}{10}$
			TT on top of UE measurement
			accuracy:
			Ioc1=Ioc2.
			± 0.3 dB for Ior/Ioc (cell1)
			± 0.3 dB for Ior/Ioc (cell2)
			±0.1dB for CPICH Ec/Ior
			(cell1)
			± 0.1 dB for CPICH Ec/lor
			$\frac{1}{(cell2)}$
			<u>(ccn2)</u>
			$\Sigma 0.8 dB$
			<u>7.0.8 db</u>
8.7.3A UTRA Carrier	TBD		
ROOI 873B Transport			
channel BI FR	IBD		
8.7.3C UE Transmitted	Accuracy upper limit	0.7 dB	Formula: Upper accuracy limit + TT
power	Accuracy lower limit	•••• •=	Lower
	Depends on PUEMAX see		accuracy limit – TT
	table 8.7.3C.2.1		Add and subtract TT to all the values
			in table 8.7.3C.2.1.
8.7.4 SFN-CFN	TBD		
observed time			
difference			
8.7.5 SFN-SFN	TBD		
observed time			
difference			

Test	Test Parameters in	Test Tolerance	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	15 25.133 $Io -10.9 dB = Ioc,$ Test 1: Io = -94 dBm Test2 : Io = -72dBm Test3 : Io = -50dBm Timing Accuracy ± 1.5 chip	1 dB for loc 0.3 dB for lor/loc [0.5 chip for timing accuracy]	Test 1: Io = -92.7 dBm, Ioc = -103.6 dBm Formula: Ioc*(1-TT _{Ioc} + (Ior/Ioc-TT _{Ior/Ioc})) ≥ -94
			Test 2: unchanged (no critical RF parameters) Test 3: lo = -51.3 dBm, loc = -62.2 dBm Formula: loc*(1+TT _{loc} + (lor/loc+TT _{lor/loc})) \leq -50
			Timing accuracy [±2.0] chip Formulas: Upper limit +TT Lower limit –TT
8.7.7 Observed time difference to GSM cell	TBD		
8.7.8 P-CCPCH RSCP	TBD		

F.5 Acceptable uncertainty of Test Equipment (This clause is informative)

This informative clause specifies the critical parameters of the components of an overall Test System (e.g. Signal generators, Signal Analysers etc.) which are necessary when assembling a Test System that complies with clause F.1 Acceptable Uncertainty of Test System. These Test Equipment parameters are fundamental to the accuracy of the overall Test System and are unlikely to be improved upon through System Calibration.

F.5.1 Transmitter measurements

Test	Equipment accuracy	Test conditions
5.2 Maximum Output Power	Not critical	19 to 25 dBm
5.3 Frequency error	+ 10 Hz	0 to 500 Hz.
5.4.1 Open loop power control in uplink	Not critical	-43.7 dBm to 25 dBm
5.4.2 Inner loop power control in the	±0.1 dB relative over a 1.5 dB range	+25 dBm to
uplink – single step	± 0.15 dB relative over a 3.0 range	–50 dBm
	±0.2 dB relative over a 4.5 dB range	
5.4.2 Inner loop power control in the uplink – seven and ten steps	±0.3 dB relative over a 26 dB range	+25 dBm to –50 dBm
5.4.3 Minimum Output Power	Not critical	
5.4.4 Out-of-synchronisation handling of	±0.1 dB uncertainty in DPCCH_Ec/lor ratio	Ratio from –16.6 dB to –28 dB
output power: \underline{DPCCH}_{E_c}		
I or		
5.5.1 Transmit ON/OFF Power: UE	Not critical	-56 dBm (static power)
transmit OFF power		
5.5.2 Transmit ON/OFF Power: transmit	TBD	-56 dBm (dynamic power over
ON/OFF time mask		approx. 70 dB range)
5.6 Change of TFC: power control step size	±0.3 dB relative over a 9 dB range	+25 dBm to -50 dBm
5.7 Power setting in uplink compressed	Subset of 5.4.2	+25 dBm to -50 dBm
mode:- UE output power		-
5.8 Occupied Bandwidth	±100 kHz	For results between 4 and 6 MHz?
5.9 Spectrum emission mask	Not critical	P_Max
		Accuracy applies \pm 5 dB either
		side of UE requirements
5.10 ACLR	5 MHZ Offset ± 0.8 dB	19 to 25 dBm at 5 MHz onset for
		dB
	10 MHZ Offset ± 0.8 dB	25 dBm at 10 MHz offset for
		results between 45 dB and 55
		dB.
5.11 Spurious emissions	Not critical	19 to 25 dBm
5.12 Transmit Intermodulation	Not critical	19 to 25 dBm
5.13.1 Transmit modulation: EVM	±2.5 %	25 dBm to -21 dBm
	(for single code)	
5.13.2 Transmit modulation: peak code	±1.0dB	For readings between -10 dB to
domain error		–20 dB.

Table F.5.1: Equipment accuracy for transmitter measurements

F.5.2 Receiver measurements

Table F.5.2: Equipment accuracy for receiver measurements

Clause	Equipment accuracy	Test conditions
6.2 Reference sensitivity level	Not critical	
6.3 Maximum input level:	Not critical	
6.4 Adjacent channel selectivity	Not critical	
6.5 Blocking characteristics	Not critical	
6.6 Spurious Response	Not critical	
6.7 Intermod Characteristics	Not critical	
6.8 Spurious emissions	Not critical	

F.5.3 Performance measurements

Table GF.5.3: Equipment accuracy for performance measurements

Clause	Equipment accuracy	Test conditions
7.2 to 7.10	$\frac{DPCH_E_c}{I_{or}}$ ±0.1 dB	-2.2 to -18.9 dB

F.5.4 Requirement	s for support of RRM e F.5.4: Equipment accuracy for RRM	
Clause	Equipment accuracy	Test conditions
8.2.2 to 8.7.8	any_Ec/lor ±0.1 dB	
	lor//loc ±0.3 dB	
	<u>loc1/loc2 ±0.3 dB</u>	
	loc ±1 dB	

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Reason for change: अ	The CRC bits for the reference measurement channel using RLC-TM for DTCH, transport channel parameters are incorrect based on "A.4 DL reference measurement channel for BTFD performance requirements)" in 25.101 sections A.4.
Summary of change: ೫	The size of CRC was changed to 12 bits.
Consequences if 米 not approved:	The test case would be incorrect.

Clauses affected: Other specs affected:	 4.2 Y N Other core specifications % Test specifications 	
	O&M Specifications	
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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.

C.4.2 DL reference measurement channel for BTFD performance requirements

The parameters for DL reference measurement channel for BTFD are specified in table C.4.2.1, table C.4.2.2, table C.4.2.3 and table C.4.2.4. The channel coding for information is shown in figures C.4.1, C.4.2, and C.4.3. For the RLC configuration of AM DCCHs Timer_STATUS_Periodic shall not be set in RRC CONNECTION SETUP message used in test procedure for RF test as defined in TS34.108 clause 7.3. This is to prevent unexpected DCHs from being transmitted through such RLC entities when the timer has expired in order to sure that the required TFC from the minimum set of TFCs can continuously convey a DCH for DTCH during the test.

Parameter	Rate 1	Rate 2	Rate 3	Unit
Information bit rate	12,2	7,95	1,95	kbps
DPCH		30		ksps
Slot Format #i		8		-
TFCI		Off		-
Power offsets PO1, PO2 and PO3		0		dB
DTX position		Fixed		-

|--|

Higher	RA	B/Signalling RB	SRB			
RLC	Logical ch	annel type	DCCH			
	RLC mode	9	UM/AM			
	Payload s	izes, bit	88/80			
	Max data	rate, bps	2200/2000			
	PDU head	ler, bit	8/16			
	TrD PDU	header, bit	N/A			
MAC	MAC head	der, bit	4			
	MAC mult	iplexing	Yes			
Layer 1	TrCH type		DCH			
	Transport	Channel Identity	20			
	TB sizes,	bit	100			
	TFS	TF0, bits	0*100			
		TF1, bits	1*100			
	TTI, ms		40			
	Coding typ	be	Convolution Coding			
	Coding Ra	ate	1/3			
	CRC, bit		12			
	Max numb	per of bits/TTI after	360			
	channel co	oding				
	Uplink: Ma frame befo	ax number of bits/radio	90			
	RM attribu	ite	256			

Table C.4.2.3: DL reference measurement channel using RLC-TM for DTCH, transport channel parameters

Higher Layer	RAB/Signalling RB	12.2k/10.2k/7.95k/7.4k/6.7k/5.9k/5.15k/4.75k/1.95k
RLC	Logical channel type	DTCH
	RLC mode	ТМ
	Payload sizes, bit	244, 204, 159, 148, 134, 118, 103, 95, 39
	Max data rate, bps	12200

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	PDU hea	der, bit	N/A
	TrD PDU	header,	0
	bit		
MAC	MAC header, bit		0
	MAC mu	ltiplexing	N/A
Layer 1	TrCH typ	е	DCH
	Transpor	t Channel	1
	Identity		
	TB sizes, bit		244, 204, 159, 148, 134, 118, 103, 95, 39,0
	TFS	TF0 bit	1x0
		TF1 bit	1x244
		TF2 bit	1x204
		TF3 bit	1x159
		TF4 bit	1x148
		TF5 bit	1x134
		TF6 bit	1x118
		TF7 bit	1x103
		TF8 bit	1x95
		TF9 bit	1x39
	TTI, ms		20
	Coding type		CC
	Coding R	late	1/3
	CRC, bit		012
	RM attrib	ute	256

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	rele	ease)					R97	(Release 1997)	
	В	(addition of	of feature),				R98	(Release 1998)	
	С	(functiona	l modification of	feature)			R99	(Release 1999)	
	D	(editorial ı	nodification)				Rel-4	(Release 4)	
	Detailed	l explanatio	ons of the above	categories	can		Rel-5	(Release 5)	
	be foun	d in 3GPP	<u>TR 21.900</u> .				Rel-6	(Release 6)	

Reason for change: 9	The CRC bits for the reference measurement channel using RLC-TM for DTCH, transport channel parameters are incorrect based on "A.4 DL reference measurement channel for BTFD performance requirements)" in 25.101 sections A.4.				
Summary of change: 3	The size of CRC was changed to 12 bits.				
Consequences if a solution of approved:	The test case would be incorrect.				
Clauses affected:	6 C.4.2				
Other specs affected:	Y N Contractions % Test specifications % O&M Specifications 0				
Other comments:	f				

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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.

C.4.2 DL reference measurement channel for BTFD performance requirements

The parameters for DL reference measurement channel for BTFD are specified in table C.4.2.1, table C.4.2.2, table C.4.2.3 and table C.4.2.4. The channel coding for information is shown in figures C.4.1, C.4.2, and C.4.3. For the RLC configuration of AM DCCHs Timer_STATUS_Periodic shall not be set in RRC CONNECTION SETUP message used in test procedure for RF test as defined in TS34.108 clause 7.3. This is to prevent unexpected DCHs from being transmitted through such RLC entities when the timer has expired in order to sure that the required TFC from the minimum set of TFCs can continuously convey a DCH for DTCH during the test.

Parameter	Rate 1	Rate 3	Unit	
Information bit rate	12,2	7,95	1,95	kbps
DPCH		30		ksps
Slot Format #i		-		
TFCI		Off		-
Power offsets PO1, PO2 and PO3		dB		
DTX position		-		

|--|

Higher Layer	RA	B/Signalling RB	SRB			
RLC	Logical ch	annel type	DCCH			
	RLC mode	9	UM/AM			
	Payload s	izes, bit	88/80			
	Max data	rate, bps	2200/2000			
	PDU head	ler, bit	8/16			
	TrD PDU	header, bit	N/A			
MAC	MAC head	der, bit	4			
	MAC mult	iplexing	Yes			
Layer 1	TrCH type		DCH			
	Transport	Channel Identity	20			
	TB sizes,	bit	100			
	TFS	TF0, bits	0*100			
		TF1, bits	1*100			
	TTI, ms		40			
	Coding typ	be	Convolution Coding			
	Coding Ra	ate	1/3			
	CRC, bit		12			
	Max numb	per of bits/TTI after	360			
	channel co	oding				
	Uplink: Ma frame befo	ax number of bits/radio ore rate matching	90			
	RM attribu	ite	256			

Table C.4.2.3: DL reference measurement channel using RLC-TM for DTCH, transport channel parameters

Higher Layer	RAB/Signalling RB	12.2k/10.2k/7.95k/7.4k/6.7k/5.9k/5.15k/4.75k/1.95k
RLC	Logical channel type	DTCH
	RLC mode	ТМ
	Payload sizes, bit	244, 204, 159, 148, 134, 118, 103, 95, 39
	Max data rate, bps	12200

1

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CHANGE REQUEST								
ж	34.121	CR 296	жrev	- *	Current vers	^{ion:} 5.0.0	ж	
For <u>HELP</u> o	n using this fo	rm, see bottom of th	nis page or l	ook at the	e pop-up text	over the X sy	mbols.	
Proposed chang	ge affects:	UICC apps#	ME X	Radio Ad	ccess Networ	k Core Ne	etwork	
Title:	策 <mark>Introduct</mark>	ion of the phase dise	continuity te	st				
Source:	<mark>ដ T1</mark>							
Work item code	:೫ <mark>TEI5</mark>				Date: ೫	3/09/2003		
Category:	<pre></pre>	the following categorie rrection) rresponds to a correct. dition of feature), notional modification or itorial modification) planations of the above 3GPP <u>TR 21.900</u> .	es: ion in an ean f feature) re categories	ier release can	Release: ¥ Use <u>one</u> of 2 9) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	Rel-5 the following reli (GSM Phase 2) (Release 1996) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)	eases:	

Reason for change:	ж	Introduction of the phase discontinuity test		
Summary of change: #				
Consequences if	ж	UE with phase discontinuity error exceeding the minimum requirements will not		
not approved:		be testable and may harm the network.		
Clauses affected:	ж	5.13.3		
Other specs affected:	ж	Y N X Other core specifications # X Test specifications # X O&M Specifications •		
Other comments:	ж	This test is introduced for release 5 and later releases		

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.

5.13.3 UE phase discontinuity

5.13.3.1 Definition and applicability

Phase discontinuity is the change in phase between any two adjacent timeslots. The EVM for each timeslot (excluding the transient periods of 25 µs on either side of the nominal timeslot boundaries) shall be measured according to subclause 5.13.2. The frequency, absolute phase, absolute amplitude and chip clock timing used to minimise the error vector are chosen independently for each timeslot. The phase discontinuity result is defined as the difference between the absolute phase used to calculate EVM for the preceding timeslot, and the absolute phase used to calculate EVM for the succeeding timeslot.



Figure 5.13.3.1 Graphical description of phase discontinuity

The best-fit rate of change of phase for each timeslot is calculated using the same process as used to minimize the EVM. This best-fit rate of change of phase is by definition the frequency error result for the timeslot. Due to the presence of power steps in the test, the data used for the best-fit calculation shall exclude the 25µs transition period at the beginning and end of each timeslot. The best-fit rate of change of phase for each timeslot is then extrapolated in both directions onto the timeslot boundaries. The phase discontinuity result at any one slot boundary is the difference between the extrapolated phase at the end of the timeslot preceding the slot boundary and the extrapolated phase at the start of the timeslot following the slot boundary.

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

5.13.3.2 Minimum requirements

The rate of occurrence of any phase discontinuity on an uplink DPCH for the parameters specified in table 5.13.1 shall not exceed the values specified in table 5.13.2. Phase shifts that are caused by changes of the UL transport format combination (TFC) and compressed mode are not included. When calculating the phase discontinuity, the requirements for frequency error and EVM in subclauses TS 25.101 [1] 6.3 and TS 25.101 [1] 6.8.2 for each timeslot shall be met.

Table 5.13.1: Parameters for Phase discontinuity

Parameter	Unit	Level
Power control step size	dB	<u>1</u>

Table 5.13.2: Phase discontinuity minimum requirement

Phase discontinuity Δθ in degrees	Maximum allowed rate of occurrence in Hz	
$\Delta \theta \leq 30$	<u>1500</u>	
<u>30 < Δθ ≤ 60</u>	<u>300</u>	
$\Delta \theta > 60$	<u>0</u>	

The normative reference for this requirement is TS 25.101 [1] clause 6.8.4.

5.13.3.3 Test purpose

To verify that the UE phase discontinuity is within the limits shown in clause 5.13.3.2.

To verify that any timeslot used in the calculation of a phase discontinuity result also passes the frequency error and EVM requirements referenced in clause 5.3 2 and 5.13.3.2.

5.13.3.4 Method of test

5.13.3.4.1 Initial conditions

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

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

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

2) A call is set up according to the Generic call setup procedure using power control algorithm 1 as specified in TS34.108 [3] sub clause 7.3.2.

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.

5.13.3.4.2 Procedure



Figure 5.13.3.4 Five down four up hysteresis test pattern

