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	Version in	Version out	WI	Conclusion
T1-031235	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.
T1-031236	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	Version in	Version out	WI	Conclusion
T1-030796	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.
T1-030814	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.
T1-030815	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.
T1-030816	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.
T1-030817	256	0	Rel-99	Correction of SSDT performance test case (R99)	F	3.13.0	5.1.0	TEI	Approved.
T1-030818	257	0	Rel-4	Correction of SSDT performance test case (Rel-4)	A	4.0.0	5.1.0	TEI4	Approved.
T1-030819	258	0	Rel-5	Correction of SSDT performance test case (Rel-5)	A	5.0.0	5.1.0	TEI5	Approved.
T1-030841	261	0	Rel-99	Test Requirements for RRM CPICH RSCP Inter Frequency Measurement	F	3.13.0	5.1.0	TEI	Approved.
T1-030842	262	0	Rel-4	Test Requirements for RRM CPICH RSCP Inter Frequency Measurement	A	4.0.0	5.1.0	TEI4	Approved.
T1-030843	263	0	Rel-5	Test Requirements for RRM CPICH RSCP Inter Frequency Measurement	A	5.0.0	5.1.0	TEI5	Approved.

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

CRs specific to Rel99 :

Tdoc #	CR #	Rev	Phase	Title	cat	Version in	Version out	WI	Conclusion
T1-030800	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.
T1-030870	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.
T1-030873	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	Version in	Version out	WI	Conclusion
T1-030832	259	0	Rel-4	Introduction of Test Tolerances to Cell Reselection in CELL_FACH tests 8.3.5.1 & 8.3.5.2	A	4.0.0	5.1.0	TEI4	Approved.
T1-030833	260	0	Rel-5	Introduction of Test Tolerances to Cell Reselection in CELL_FACH tests 8.3.5.1 & 8.3.5.2	A	5.0.0	5.1.0	TEI5	Approved.
T1-031103	275	0	Rel-4	CR to 34.121 Rel-4; Corretion to Inter-system Handover from UTRAN FDD to GSM	A	4.0.0	5.1.0	TEI4	Approved.
T1-031104	276	0	Rel-5	CR to 34.121 Rel-5; Corretion to Inter-system Handover from UTRAN FDD to GSM	A	5.0.0	5.1.0	TEI5	Approved.
T1-030871	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.
T1-030872	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	Version in	Version 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 **Tdoc ⌘T1-030796**
Munich, Germany, 28 July – 01 August 2003

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR 251**	⌘ **rev**	**-**	⌘ Current version:	**5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Creation of a merged release for 34.121 which incorporates R99 and Rel-4
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	31/07/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	To create a merged document that covers all release up to Release 5.
Summary of change:	⌘	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:	⌘	2, 5.13

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	
		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.

How to create CRs using this form:

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

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

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

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

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 ~~*in the same Release as the present 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 Iub Interface NBAP Signalling".

[10] ITU-R Recommendation SM.329: "Spurious emissions".

[11] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".

[12] 3GPP TS 25.303: "Interlayer Procedures in Connected Mode".

[13] 3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".

[14] 3GPP TS 25.213: "Spreading and modulation (FDD)".

[15] 3GPP TS 25.223: "Spreading and modulation (TDD)".

[16] ETSI ETR 273-1-2: "Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

[17] 3GPP TR 25.926: "UE Radio Access Capabilities".

[18] 3GPP TR 21.904: "UE capability requirements".

[19] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[20] 3GPP TS 05.08: "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~~the measurement interval is further clarified 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

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 further clarified 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 **Tdoc ⌘T1-030800**
Munich, Germany, July 28th – August 1st 2003

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR 252**	⌘**rev**	**-**	⌘ Current version:	**3.13.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	CR to 34.121 R99; Corretion to Inter-system Handover from UTRAN FDD to GSM	
Source:	⌘	T1	
Work item code:	⌘		***Date:*** ⌘ 16/06/2003
Category:	⌘	**F**	***Release:*** ⌘ R99
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Corrected errors in the Inter-system Handover from UTRAN FDD t GSM test case
Summary of change:	⌘	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				
		Y	**N**			
Other specs affected:	⌘			Other core specifications	⌘	
				Test specifications		
				O&M Specifications		
Other comments:	⌘					

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

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

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

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 HANDOVER FROM UTRAN COMMAND is received	90
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	190

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 HANDOVER FROM UTRAN COMMAND is received	40
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	140

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

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

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

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

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

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

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 specifed in table 8.3.4.3.

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

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

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

Parameter	Unit	Cell 1 (UTRA)
		T1, T2, T3
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DCH_Ec/Ior	dB	Note 1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.		

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

Parameter	Unit	Cell 2 (GSM)	
		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 ~~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

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	~~1~~2
-Measurement Command (10.3.7.46)	~~Modify~~Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	~~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 -Integrity check info -Activation time	 0 Not Present "now"
RB information elements -RAB information list -RAB Info	 1 Not present
Other information elements -CHOICE System type -Frequency Band -GSM message -Single GSM message -GSM message List	 GSM GSM/DCS 1800 Band [TBD] GSM HANDOVER COMMAND formatted as BIT STRING(1..512). 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 RATfrequency 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.

3GPP TSG-T WG1 Meeting #20
Munich, Germany, 28th July – 1st August 2003

Tdoc ⌘T1-030814

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**253**	⌘ **rev**	**-**	⌘ Current version: **3.13.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	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)	
Source:	⌘	T1	
Work item code:	⌘		***Date:*** ⌘ 21/07/2003
Category:	⌘	**F**	***Release:*** ⌘ R99
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	The test case in 25.133 for cell reselection from WCDMA to GSM in Cell_FACH is not implemented in 34.121
Summary of change:	⌘	Test case 8.3.5.3: • Addition of test case details for • The value for T_{RA} (additional delay caused by the random access procedure in the GSM cell) is marked as TBD and need further study.
Consequences if not approved:	⌘	There are no tests for cell reselection from WCDMA to GSM in Cell_FACH.

Clauses affected:	⌘	8.3.5.3				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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

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 + $\mathbf{T_{RA}}$ s.

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

NOTE: The cell re-selection delay can be expressed

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

where:

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

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

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

T_{RA} The additional delay caused by the random access procedure in the GSM cell, is [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 list size			24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	
T1		s	5	
T2		s	10	

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

Table 8.3.5.3.2: Physical channel parameters for S-CCPCH.

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

Table 8.3.5.3.3: Transport channel parameters for S-CCPCH

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	½
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

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

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
S-CCPCH_Ec/Ior	dB	-12	
OCNS_Ec/Ior	dB	-1.295	
$\hat{I}_{or}/I_{oc}$	dB	0	-5
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	-16.2
CPICH_RSCP	dBm	-80	-85
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH Ec/Io	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset1$_{s, n}$	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	s	0	
Ssearch$_{RAT}$	dB	Not sent	
IE "FACH Measurement occasion info"		Sent	
FACH Measurement occasion cycle length coefficient		3	
Inter-frequency FDD measurement indicator		FALSE	
Inter-frequency TDD measurement indicator		FALSE	
Inter-RAT measurement indicators		Included	
>RAT type		GSM	

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

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90	-75
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

8.3.5.3.4.2 Procedure

1) The SS activates cell 1-2 with RF parameters set up according to T1 in tables 8.3.5.1.4 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.

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**254**	⌘ **rev**	**-**	⌘	Current version:	**4.0.0**	⌘

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Proposed change affects: UICC apps⌘ [ ] ME [ ] Radio Access Network [ ] Core Network [ ]

Title:	⌘	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)
Source:	⌘	T1
Work item code:	⌘	TEI — ***Date:*** ⌘ 21/07/2003
Category:	⌘	**A** — ***Release:*** ⌘ Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	The test case in 25.133 for cell reselection from WCDMA to GSM in Cell_FACH is not implemented in 34.121
Summary of change:	⌘	Test case 8.3.5.3: • Addition of test case details for • The value for T_{RA} (additional delay caused by the random access procedure in the GSM cell) is marked as TBD and need further study.
Consequences if not approved:	⌘	There are no tests for cell reselection from WCDMA to GSM in Cell_FACH.

Clauses affected:	⌘	8.3.5.3			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
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.

8.3.5.3 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 + $\mathbf{T_{RA}}$ s.

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

NOTE: The cell re-selection delay can be expressed

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

where:

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

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

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

T_{RA} The additional delay caused by the random access procedure in the GSM cell, is [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 list size			24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	
T1		s	5	
T2		s	10	

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

Table 8.3.5.3.2: Physical channel parameters for S-CCPCH.

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

Table 8.3.5.3.3: Transport channel parameters for S-CCPCH

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	½
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

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

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
S-CCPCH_Ec/Ior	dB	-12	
OCNS_Ec/Ior	dB	-1.295	
$\hat{I}_{or}/I_{oc}$	dB	0	-5
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	-16.2
CPICH_RSCP	dBm	-80	-85
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH Ec/Io	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
$\text{Qoffset1}_{s,n}$	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	s	0	
Ssearch_{RAT}	dB	Not sent	
IE "FACH Measurement occasion info"		Sent	
FACH Measurement occasion cycle length coefficient		3	
Inter-frequency FDD measurement indicator		FALSE	
Inter-frequency TDD measurement indicator		FALSE	
Inter-RAT measurement indicators		Included	
>RAT type		GSM	

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

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90	-75
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

8.3.5.3.4.2 Procedure

1) The SS activates cell 1-2 with RF parameters set up according to T1 in tables 8.3.5.1.4 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.

3GPP TSG-T WG1 Meeting #20 **Tdoc ⌘T1-030816**
Munich, Germany, 28th July – 1st August 2003

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**255**	⌘**rev**	**-**	⌘	Current version:	**5.0.0**	⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘		ME		Radio Access Network		Core Network	

Title:	⌘	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)		
Source:	⌘	T1		
Work item code:	⌘	TEI	***Date:*** ⌘	21/07/2003
Category:	⌘	**A** *Use one of the following categories:* ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	***Release:*** ⌘	Rel-5 *Use one of the following releases:* *2 (GSM Phase 2)* *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:	⌘	The test case in 25.133 for cell reselection from WCDMA to GSM in Cell_FACH is not implemented in 34.121
Summary of change:	⌘	Test case 8.3.5.3: • Addition of test case details for • The value for T_{RA} (additional delay caused by the random access procedure in the GSM cell) is marked as TBD and need further study.
Consequences if not approved:	⌘	There are no tests for cell reselection from WCDMA to GSM in Cell_FACH.

Clauses affected:	⌘	8.3.5.3				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
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.

8.3.5.3 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 + $\mathbf{T_{RA}}$ s.

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

NOTE: The cell re-selection delay can be expressed

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

where:

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

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

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

T_{RA} The additional delay caused by the random access procedure in the GSM cell, is [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 list size			24 FDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	
T1		s	5	
T2		s	10	

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

Table 8.3.5.3.2: Physical channel parameters for S-CCPCH.

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

Table 8.3.5.3.3: Transport channel parameters for S-CCPCH

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	½
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

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

Parameter	Unit	Cell 1 (UTRA)	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
S-CCPCH_Ec/Ior	dB	-12	
OCNS_Ec/Ior	dB	-1.295	
$\hat{I}_{or}/I_{oc}$	dB	0	-5
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	-16.2
CPICH_RSCP	dBm	-80	-85
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH Ec/Io	
Qqualmin	dB	-20	
Qrxlevmin	dBm	-115	
UE_TXPWR_MAX_RACH	dBm	21	
Qoffset1$_{s, n}$	dB	C1, C2: 0	
Qhyst1	dB	0	
Treselection	s	0	
Ssearch$_{RAT}$	dB	Not sent	
IE "FACH Measurement occasion info"		Sent	
FACH Measurement occasion cycle length coefficient		3	
Inter-frequency FDD measurement indicator		FALSE	
Inter-frequency TDD measurement indicator		FALSE	
Inter-RAT measurement indicators		Included	
>RAT type		GSM	

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

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-90	-75
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

8.3.5.3.4.2 Procedure

1) The SS activates cell 1-2 with RF parameters set up according to T1 in tables 8.3.5.1.4 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.

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

Tdoc ⌘T1-030817

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**256**	⌘ **rev**	**-**	⌘ Current version:	**3.13.0** ⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction of SSDT performance test case (R99)	
Source:	⌘	T1	
Work item code:	⌘	TEI	***Date:*** ⌘ 17/07/2003
Category:	⌘	**F**	***Release:*** ⌘ R99
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	This CR is based on 25.101 CR240r1 (R4-030580, RP-030207). Derivation of test test requirements table does not introduce whole range of DPCH_Ec/Ior in this test case.
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/Ior in SSDT performance test case are introduced.
Consequences if not approved:	⌘	25.101 and 34.121 are inconsistent. Derivation of test test requirements table does not introduce whole range of DPCH_Ec/Ior in this test case.

Clauses affected:	⌘	7.6.3, F.4			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Equivalent CRs in other Releases: T1-030818 (Rel-4) and T1-030819 (Rel-5)			

How to create CRs using this form:

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

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

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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 requirements in multi-path propagation conditions during SSDT Mode

Test Number	$\frac{DPCH\_E_c}{I_{or}}$	BLER
1	–~~7,5~~6,0 dB	10^{-2}
2	–~~6,5~~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 - SSDT information - S field - Code Word Set	 FDD 1 long
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - SSDT Cell Identity	 FDD A

RRC CONNECTION SETUP for Test 3 and Test 4

Information Element	Value/remark
Downlink information common for all radio links - CHOICE mode - SSDT information - S field - Code Word Set	 FDD 2 short
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - SSDT Cell Identity	 FDD 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 - Integrity check info - Activation time - New U-RNTI	 0 Not Present "now". 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 - Radio link addition information - Primary CPICH info - Downlink DPCH info for each RL	 1 Same as defined in Cell2
- CHOICE mode - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info	FDD Primary CPICH may be used This should be refrlected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message Not Present
- DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT Cell Identity - Closed loop timing adjustment mode - TFCI combining indicator - SCCPCH Information for FACH - Radio link removal information - TX Diversity Mode	 Not Present 128 0 No code change 0 B Not Present FALSE Not Present Not Present None
- SSDT information - S field - Code Word Set	 1 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 - Integrity check info - Activation time - New U-RNTI	 0 Not Present "now". 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 - Radio link addition information - Primary CPICH info - Downlink DPCH info for each RL	 1 Same as defined in Cell2
- CHOICE mode - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info	FDD Primary CPICH may be used This should be refrlected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message Not Present
- DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT Cell Identity - Closed loop timing adjustment mode - TFCI combining indicator - SCCPCH Information for FACH - Radio link removal information - TX Diversity Mode	 Not Present 128 0 No code change 0 B Not Present FALSE Not Present Not Present None
- SSDT information - S field - Code Word Set	 2 short

7.6.3.4.2 Procedure

Measure BLER in points specified in table 7.6.3.4.

7.6.3.5 Test Requirements

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

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

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Phase reference	P-CPICH				
$\hat{I}_{or1}/I_{oc}$	0,8	-2,2	0,8	0,8	dB
$\hat{I}_{or2}/I_{oc}$	0,8	0,8	0,8	-2,2	dB
I_{oc}	–60				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 7.6.3.5: DCH requirements in multi-path propagation conditions during SSDT mode

Test Number	$\frac{DPCH\_E_c}{I_{or}}$	BLER
1	–~~7,4~~5,9 dB	10^{-2}
2	–~~6,4~~4,9 dB	10^{-2}
3	–10,4 dB	10^{-2}
4	–9,1 dB	10^{-2}

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

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

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

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = +1/-3 dB Power class 2 (27 dBm) Tolerance = +1/-3 dB Power class 3 (24 dBm) Tolerance = +1/-3 dB Power class 4 (21 dBm) Tolerance = ±2 dB	0.7 dB	Formula: Upper Tolerance limit + TT 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 = ±(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

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 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 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.4 dB for $\frac{DPCCH\_E}{I_{or}}$ 0 ms for timing measurement	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 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB $\frac{DPCCH\_E_c}{I_{or}}$ levels: AB: -21.6 dB BD: -28.4 dB DE: -24.4 dB EF: -17.6 dB transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = –55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [ ] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = [ ]dBm
5.6 Change of TFC: power control step size	TFC step size = +5 to +9 dB	0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT Upper limit = -4.7 dB Lower limit = -9.3 dB
5.7 Power setting in uplink compressed mode	Various	TBD (Subset of 5.4.2)	TBD

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
5.8 Occupied Bandwidth	The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps.		0 kHz	Formula: occupied channel bandwidth: + TT occupied channel bandwidth = 5.0 MHz	
5.9 Spectrum emission mask	Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher.		1.5 dB	Formula: Minimum requirement + TT Lower limit + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Zero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be –48.5 dBm / 3.84 MHz or which ever is higher.	
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	If the adjacent 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: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB	
5.11 Spurious Emissions				Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.	
	Frequency Band	Minimum Requirement		Frequency Band	Minimum Requirement
	9 kHz ≤ f < 150 kHz	–36dBm /1kHz	0 dB	9kHz ≤ f < 1GHz	–36dBm /1kHz
	150 kHz ≤ f < 30 MHz	–36dBm /10kHz	0 dB	150 kHz ≤ f < 30 MHz	–36dBm /10kHz
	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz	0 dB	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz
	1 GHz ≤ f < 12.75 GHz	–30dBm /1MHz	0 dB	1 GHz ≤ f < 2.2 GHz	–30dBm /1MHz
			0 dB	2.2 GHz ≤ f < 4 GHz	–30dBm /1MHz
			0 dB	4 GHz ≤ f < 12.75 GHz	–30dBm /1MHz
	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz	0 dB	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz
	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz	0 dB	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. CW interferer level = -40 dBc	
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	

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

<table>
<tr><th>Test</th><th colspan="2">Minimum Requirement in TS 25.101</th><th>Test Tolerance (TT)</th><th colspan="2">Test Requirement in TS 34.121</th></tr>
<tr><td>6.2 Reference sensitivity level</td><td colspan="2">Îor = -106.7 dBm / 3.84 MHz
DPCH_Ec = –117 dBm / 3.84 MHz
BER limit = 0.001</td><td>0.7 dB</td><td colspan="2">Formula: Îor+ TT
DPCH_Ec + TT
BER limit unchanged

Îor = -106 dBm / 3.84 MHz
DPCH_Ec = -116.3 dBm / 3.84 MHz</td></tr>
<tr><td>6.3 Maximum input level</td><td colspan="2">-25 dBm Ior
-19 dBc DPCH_Ec/Ior</td><td>0.7 dB</td><td colspan="2">Formula: Ior-TT

Ior = -25.7 dBm</td></tr>
<tr><td>6.4 Adjacent Channel Selectivity</td><td colspan="2">Îor = -92.7 dBm / 3.84 MHz
DPCH_Ec = –103 dBm / 3.84 MHz
Ioac (modulated) = -52 dBm/3.84 MHz
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: Îor unchanged
DPCH_Ec unchanged
Ioac – TT
BER limit unchanged

Ioac = -52 dBm/3.84 MHz</td></tr>
<tr><td>6.5 Blocking Characteristics</td><td colspan="2">See Table 6.5.3 and 6.5.4. in TS34.121
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula:
$I_{blocking}$ (modulated) - TT (dBm/3.84MHz)
$I_{blocking}$ (CW) - TT (dBm)
BER limit unchanged</td></tr>
<tr><td>6.6 Spurious Response</td><td colspan="2">Iblocking(CW) –44 dBm
Fuw:
Spurious response frequencies
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: $I_{blocking}$ (CW) - TT (dBm)
Fuw unchanged
BER limit unchanged

$I_{blocking}$(CW) = -44 dBm</td></tr>
<tr><td>6.7 Intermodulation Characteristics</td><td colspan="2">Iouw1 (CW) -46 dBm
Iouw2 (modulated) –46 dBm / 3.84 MHz
Fuw1 (offset) 10 MHz
Fuw2 (offset) 20 MHz
Ior = -103.7 dBm/3.84 MHz
DPCH_Ec = -114 dBm/3.84

BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: Ior + TT
DPCH_Ec + TT
Iouw1 level unchanged
Iouw2 level unchanged
BER limit unchanged.

Ior = -114 dBm

BER limit. = 0.001</td></tr>
<tr><td rowspan="8">6.8 Spurious Emissions</td><td colspan="2"></td><td></td><td colspan="2">Formula: Maximum level + TT
Add zero to all the values of Maximum Level in table 6.8.1.</td></tr>
<tr><td>Frequency Band</td><td>Maximum level</td><td></td><td>Frequency Band</td><td>Maximum level</td></tr>
<tr><td>9kHz ≤ f < 1GHz</td><td>-57dBm /100kHz</td><td>0 dB</td><td>9kHz ≤ f < 1GHz</td><td>-57dBm /100kHz</td></tr>
<tr><td rowspan="3">1GHz ≤ f ≤ 12.75GHz</td><td rowspan="3">-47dBm /1MHz</td><td>0 dB</td><td>1GHz ≤ f ≤ 2.2GHz</td><td>-47dBm /1MHz</td></tr>
<tr><td>0 dB</td><td>2.2GHz < f ≤ 4GHz</td><td>-47dBm /1MHz</td></tr>
<tr><td>0 dB</td><td>4GHz < f ≤ 12.75GHz</td><td>-47dBm /1MHz</td></tr>
<tr><td>1920MHz ≤ f ≤ 1980MHz</td><td>-60dBm /3.84MHz</td><td>0 dB</td><td>1920MHz ≤ f ≤ 1980MHz</td><td>-60dBm /3.84MHz</td></tr>
<tr><td>2110MHz ≤ f ≤ 2170MHz</td><td>-60dBm /3.84MHz</td><td>0 dB</td><td>2110MHz ≤ f ≤ 2170MHz</td><td>-60dBm /3.84MHz</td></tr>
</table>

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
7.2 Demodulation of DPCH in static conditions	$\frac{DPCH\_E_c}{I_{or}}$ -5.5 to -16.6 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 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 to -15.0 I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ + ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -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 to -7.7 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -3.1 to -7.6 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 9-12	$\frac{DPCH\_E_c}{I_{or}}$ -4.4 to -11.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -4.3 to –11.7 dB:

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 to -15.0 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: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 $\frac{DPCH\_E_c}{I_{or}}$ -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 to -8.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -1.3 to -8.7 dB:
7.4 Demodulation of DPCH in moving propagation conditions	$\frac{DPCH\_E_c}{I_{or}}$ -10.9 to -14.5 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 to -12.6 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -16.7 dB:
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH\_E_c}{I_{or}}$ -18 to -18.3 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -17.9 to -18.2 dB:
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH\_E_c}{I_{or}}$ -~~7.5~~5.0 to -~~9.2~~10.5 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 to -2.2 dB $\frac{DPCH\_E_c}{I_{or}}$ -~~7.4~~4.9 to -~~9.1~~10.4 dB:
7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH\_E_c}{I_{or}}$ -5.5 to –15.2 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = Ior2/Ioc = 6 to 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.8 to 0.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -5.4 to –15.4 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 dB Ior1 and Ior2 -60dBm	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0dB for Ior1 and Ior2	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\frac{DPCH\_E_c}{I_{or}}$ = -11,9 dB: Ior1 = –60dBm Ior2 = –60dBm 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 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 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 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 to -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 5 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 5.6 dB $\frac{DPCH\_E_c}{I_{or}}$ -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: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 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 to -18.4 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 dB $\frac{DPCH\_E_c}{I_{or}}$ -17.6 to –18.3 dB:
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH\_E_c}{I_{or}}$ -13.0 to -13.8 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -12.9 to -13.7 dB:

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CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**257**	⌘**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 ⌘ symbols.*

Proposed change affects:	UICC apps⌘	[ ]	ME	[X]	Radio Access Network	[ ]	Core Network	[ ]

Title:	⌘	Correction of SSDT performance test case (Rel-4)
Source:	⌘	T1
Work item code:	⌘	TEI
Date:	⌘	17/07/2003
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	This CR is based on 25.101 CR241r1 (R4-030581, RP-030207). Derivation of test test requirements table does not introduce whole range of DPCH_Ec/Ior in this test case.
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/Ior in SSDT performance test case are introduced.
Consequences if not approved:	⌘	25.101 and 34.121 are inconsistent. Derivation of test test requirements table does not introduce whole range of DPCH_Ec/Ior in this test case.

Clauses affected:	⌘	7.6.3, F.4				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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

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 requirements in multi-path propagation conditions during SSDT Mode

Test Number	$\frac{DPCH\_E_c}{I_{or}}$	BLER
1	–~~7,5~~6,0 dB	10^{-2}
2	–~~6,5~~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 - SSDT information - S field - Code Word Set	 FDD 1 long
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - SSDT Cell Identity	 FDD A

RRC CONNECTION SETUP for Test 3 and Test 4

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

RADIO BEARER SETUP for Test 1 and Test 2

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

RADIO BEARER SETUP for Test 3 and Test 4

Information Element	Value/remark
Downlink information common for all radio links - CHOICE mode - SSDT information - S field - Code Word Set	 FDD 2 short
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - SSDT Cell Identity	 FDD 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 - Integrity check info - Activation time - New U-RNTI	 0 Not Present "now". 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 - Radio link addition information - Primary CPICH info - Downlink DPCH info for each RL	 1 Same as defined in Cell2
- CHOICE mode - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info	FDD Primary CPICH may be used This should be refrlected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message Not Present
- DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT Cell Identity - Closed loop timing adjustment mode - TFCI combining indicator - SCCPCH Information for FACH - Radio link removal information - TX Diversity Mode	 Not Present 128 0 No code change 0 B Not Present FALSE Not Present Not Present None
- SSDT information - S field - Code Word Set	 1 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 - Integrity check info - Activation time - New U-RNTI	 0 Not Present "now". 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 - Radio link addition information - Primary CPICH info - Downlink DPCH info for each RL	 1 Same as defined in Cell2
- CHOICE mode - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info	FDD Primary CPICH may be used This should be refrlected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message Not Present
- DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT Cell Identity - Closed loop timing adjustment mode - TFCI combining indicator - SCCPCH Information for FACH - Radio link removal information - TX Diversity Mode	 Not Present 128 0 No code change 0 B Not Present FALSE Not Present Not Present None
- SSDT information - S field - Code Word Set	 2 short

7.6.3.4.2 Procedure

Measure BLER in points specified in table 7.6.3.4.

7.6.3.5 Test Requirements

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

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

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Phase reference	P-CPICH				
$\hat{I}_{or1}/I_{oc}$	0,8	-2,2	0,8	0,8	dB
$\hat{I}_{or2}/I_{oc}$	0,8	0,8	0,8	-2,2	dB
I_{oc}	–60				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 7.6.3.5: DCH requirements in multi-path propagation conditions during SSDT mode

Test Number	$\frac{DPCH\_E_c}{I_{or}}$	BLER
1	–~~7,4~~5,9 dB	10^{-2}
2	–~~6,4~~4,9 dB	10^{-2}
3	–10,4 dB	10^{-2}
4	–9,1 dB	10^{-2}

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

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

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

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = +1/-3 dB Power class 2 (27 dBm) Tolerance = +1/-3 dB Power class 3 (24 dBm) Tolerance = +1/-3 dB Power class 4 (21 dBm) Tolerance = ±2 dB	0.7 dB	Formula: Upper Tolerance limit + TT 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 = ±(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

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 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 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.4 dB for $\frac{DPCCH\_E}{I_{or}}$ 0 ms for timing measurement	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 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB $\frac{DPCCH\_E_c}{I_{or}}$ levels: AB: -21.6 dB BD: -28.4 dB DE: -24.4 dB EF: -17.6 dB transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = –55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [ ] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = [ ]dBm
5.6 Change of TFC: power control step size	TFC step size = +5 to +9 dB	0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT Upper limit = -4.7 dB Lower limit = -9.3 dB
5.7 Power setting in uplink compressed mode	Various	TBD (Subset of 5.4.2)	TBD

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
5.8 Occupied Bandwidth	The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps.		0 kHz	Formula: occupied channel bandwidth: + TT occupied channel bandwidth = 5.0 MHz	
5.9 Spectrum emission mask	Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher.		1.5 dB	Formula: Minimum requirement + TT Lower limit + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Zero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be –48.5 dBm / 3.84 MHz or which ever is higher.	
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	If the adjacent 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: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB	
5.11 Spurious Emissions				Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.	
	Frequency Band	Minimum Requirement		Frequency Band	Minimum Requirement
	9 kHz ≤ f < 150 kHz	–36dBm /1kHz	0 dB	9kHz ≤ f < 1GHz	–36dBm /1kHz
	150 kHz ≤ f < 30 MHz	–36dBm /10kHz	0 dB	150 kHz ≤ f < 30 MHz	–36dBm /10kHz
	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz	0 dB	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz
	1 GHz ≤ f < 12.75 GHz	–30dBm /1MHz	0 dB	1 GHz ≤ f < 2.2 GHz	–30dBm /1MHz
			0 dB	2.2 GHz ≤ f < 4 GHz	–30dBm /1MHz
			0 dB	4 GHz ≤ f < 12.75 GHz	–30dBm /1MHz
	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz	0 dB	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz
	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz	0 dB	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. CW interferer level = -40 dBc	
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	

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

<table>
<tr><th>Test</th><th colspan="2">Minimum Requirement in TS 25.101</th><th>Test Tolerance (TT)</th><th colspan="2">Test Requirement in TS 34.121</th></tr>
<tr><td>6.2 Reference sensitivity level</td><td colspan="2">Îor = -106.7 dBm / 3.84 MHz
DPCH_Ec = –117 dBm / 3.84 MHz
BER limit = 0.001</td><td>0.7 dB</td><td colspan="2">Formula: Îor+ TT
DPCH_Ec + TT
BER limit unchanged

Îor = -106 dBm / 3.84 MHz
DPCH_Ec = -116.3 dBm / 3.84 MHz</td></tr>
<tr><td>6.3 Maximum input level</td><td colspan="2">-25 dBm Ior
-19 dBc DPCH_Ec/Ior</td><td>0.7 dB</td><td colspan="2">Formula: Ior-TT

Ior = -25.7 dBm</td></tr>
<tr><td>6.4 Adjacent Channel Selectivity</td><td colspan="2">Îor = -92.7 dBm / 3.84 MHz
DPCH_Ec = –103 dBm / 3.84 MHz
Ioac (modulated) = -52 dBm/3.84 MHz
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: Îor unchanged
DPCH_Ec unchanged
Ioac – TT
BER limit unchanged

Ioac = -52 dBm/3.84 MHz</td></tr>
<tr><td>6.5 Blocking Characteristics</td><td colspan="2">See Table 6.5.3 and 6.5.4. in TS34.121
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula:
$I_{blocking}$ (modulated) - TT (dBm/3.84MHz)
$I_{blocking}$ (CW) - TT (dBm)
BER limit unchanged</td></tr>
<tr><td>6.6 Spurious Response</td><td colspan="2">Iblocking(CW) –44 dBm
Fuw:
Spurious response frequencies
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: $I_{blocking}$ (CW) - TT (dBm)
Fuw unchanged
BER limit unchanged

$I_{blocking}$(CW) = -44 dBm</td></tr>
<tr><td>6.7 Intermodulation Characteristics</td><td colspan="2">Iouw1 (CW) -46 dBm
Iouw2 (modulated) –46 dBm / 3.84 MHz
Fuw1 (offset) 10 MHz
Fuw2 (offset) 20 MHz
Ior = -103.7 dBm/3.84 MHz
DPCH_Ec = -114 dBm/3.84

BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: Ior + TT
DPCH_Ec + TT
Iouw1 level unchanged
Iouw2 level unchanged
BER limit unchanged.

Ior = -114 dBm

BER limit. = 0.001</td></tr>
<tr><td rowspan="8">6.8 Spurious Emissions</td><td colspan="2"></td><td></td><td colspan="2">Formula: Maximum level + TT
Add zero to all the values of Maximum Level in table 6.8.1.</td></tr>
<tr><td>Frequency Band</td><td>Maximum level</td><td></td><td>Frequency Band</td><td>Maximum level</td></tr>
<tr><td>9kHz ≤ f < 1GHz</td><td>-57dBm /100kHz</td><td>0 dB</td><td>9kHz ≤ f < 1GHz</td><td>-57dBm /100kHz</td></tr>
<tr><td rowspan="3">1GHz ≤ f ≤ 12.75GHz</td><td rowspan="3">-47dBm /1MHz</td><td>0 dB</td><td>1GHz ≤ f ≤ 2.2GHz</td><td>-47dBm /1MHz</td></tr>
<tr><td>0 dB</td><td>2.2GHz < f ≤ 4GHz</td><td>-47dBm /1MHz</td></tr>
<tr><td>0 dB</td><td>4GHz < f ≤ 12.75GHz</td><td>-47dBm /1MHz</td></tr>
<tr><td>1920MHz ≤ f ≤ 1980MHz</td><td>-60dBm /3.84MHz</td><td>0 dB</td><td>1920MHz ≤ f ≤ 1980MHz</td><td>-60dBm /3.84MHz</td></tr>
<tr><td>2110MHz ≤ f ≤ 2170MHz</td><td>-60dBm /3.84MHz</td><td>0 dB</td><td>2110MHz ≤ f ≤ 2170MHz</td><td>-60dBm /3.84MHz</td></tr>
</table>

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
7.2 Demodulation of DPCH in static conditions	$\frac{DPCH\_E_c}{I_{or}}$ -5.5 to -16.6 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 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 to -15.0 I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ + ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -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 to -7.7 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -3.1 to -7.6 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 9-12	$\frac{DPCH\_E_c}{I_{or}}$ -4.4 to -11.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -4.3 to –11.7 dB:

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 to -15.0 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: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 $\frac{DPCH\_E_c}{I_{or}}$ -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 to -8.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -1.3 to -8.7 dB:
7.4 Demodulation of DPCH in moving propagation conditions	$\frac{DPCH\_E_c}{I_{or}}$ -10.9 to -14.5 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 to -12.6 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -16.7 dB:
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH\_E_c}{I_{or}}$ -18 to -18.3 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -17.9 to -18.2 dB:
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH\_E_c}{I_{or}}$ -~~7.5~~5.0 to -~~9.2~~10.5 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 to -2.2 dB $\frac{DPCH\_E_c}{I_{or}}$ -~~7.4~~4.9 to -~~9.1~~10.4 dB:
7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH\_E_c}{I_{or}}$ -5.5 to –15.2 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = Ior2/Ioc = 6 to 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.8 to 0.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -5.4 to –15.4 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 dB Ior1 and Ior2 -60dBm	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0dB for Ior1 and Ior2	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\frac{DPCH\_E_c}{I_{or}}$ = -11,9 dB: Ior1 = –60dBm Ior2 = –60dBm 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 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 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 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 to -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 5 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 5.6 dB $\frac{DPCH\_E_c}{I_{or}}$ -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: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 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 to -18.4 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 dB $\frac{DPCH\_E_c}{I_{or}}$ -17.6 to –18.3 dB:
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH\_E_c}{I_{or}}$ -13.0 to -13.8 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -12.9 to -13.7 dB:

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Tdoc ⌘T1-030819

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**258**	⌘ **rev**	**-**	⌘	Current version:	**5.0.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction of SSDT performance test case (Rel-5)
Source:	⌘	T1
Work item code:	⌘	TEI
Date:	⌘	17/07/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
- *2 (GSM Phase 2)*
- *R96 (Release 1996)*
- *R97 (Release 1997)*
- *R98 (Release 1998)*
- *R99 (Release 1999)*
- *Rel-4 (Release 4)*
- *Rel-5 (Release 5)*
- *Rel-6 (Release 6)*

Reason for change:	⌘	This CR is based on 25.101 CR242r1 (R4-030582, RP-030207). Derivation of test test requirements table does not introduce whole range of DPCH_Ec/Ior in this test case.
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/Ior in SSDT performance test case are introduced.
Consequences if not approved:	⌘	25.101 and 34.121 are inconsistent. Derivation of test test requirements table does not introduce whole range of DPCH_Ec/Ior in this test case.

Clauses affected:	⌘	7.6.3, F.4			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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

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

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

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

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 requirements in multi-path propagation conditions during SSDT Mode

Test Number	$\frac{DPCH\_E_c}{I_{or}}$	BLER
1	–~~7,5~~6,0 dB	10^{-2}
2	–~~6,5~~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 - SSDT information - S field - Code Word Set	 FDD 1 long
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - SSDT Cell Identity	 FDD a

RRC CONNECTION SETUP for Test 3 and Test 4

Information Element	Value/remark
Downlink information common for all radio links - CHOICE mode - SSDT information - S field - Code Word Set	 FDD 2 short
Downlink DPCH info for each RL - CHOICE mode - Downlink DPCH info for each RL - SSDT Cell Identity	 FDD 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 - Integrity check info - Activation time - New U-RNTI	 0 Not Present "now". 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 - Radio link addition information - Primary CPICH info - Downlink DPCH info for each RL	 1 Same as defined in Cell2
- CHOICE mode - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info	FDD Primary CPICH may be used This should be refrlected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message Not Present
- DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT Cell Identity - Closed loop timing adjustment mode - TFCI combining indicator - SCCPCH Information for FACH - Radio link removal information - TX Diversity Mode	 Not Present 128 0 No code change 0 b Not Present FALSE Not Present Not Present None
- SSDT information - S field - Code Word Set	 1 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 - Integrity check info - Activation time - New U-RNTI	 0 Not Present "now". 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 - Radio link addition information - Primary CPICH info - Downlink DPCH info for each RL	 1 Same as defined in Cell2
- CHOICE mode - Primary CPICH usage for channel estimation - DPCH frame offset - Secondary CPICH info	FDD Primary CPICH may be used This should be refrlected by the IE" Cell synchronisation information" in received MEASUREMENT REPORT message Not Present
- DL channelisation code - Secondary scrambling code - Spreading factor - Code number - Scrambling code change - TPC combination index - SSDT Cell Identity - Closed loop timing adjustment mode - TFCI combining indicator - SCCPCH Information for FACH - Radio link removal information - TX Diversity Mode	 Not Present 128 0 No code change 0 b Not Present FALSE Not Present Not Present None
- SSDT information - S field - Code Word Set	 2 short

7.6.3.4.2 Procedure

Measure BLER in points specified in table 7.6.3.4.

7.6.3.5 Test Requirements

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

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

Parameter	Test 1	Test 2	Test 3	Test 4	Unit
Phase reference	P-CPICH				
$\hat{I}_{or1}/I_{oc}$	0,8	-2,2	0,8	0,8	dB
$\hat{I}_{or2}/I_{oc}$	0,8	0,8	0,8	-2,2	dB
I_{oc}	–60				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 7.6.3.5: DCH requirements in multi-path propagation conditions during SSDT mode

Test Number	$\frac{DPCH\_E_c}{I_{or}}$	BLER
1	–~~7,4~~5,9 dB	10^{-2}
2	–~~6,4~~4,9 dB	10^{-2}
3	–10,4 dB	10^{-2}
4	–9,1 dB	10^{-2}

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

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

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

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = +1/-3 dB Power class 2 (27 dBm) Tolerance = +1/-3 dB Power class 3 (24 dBm) Tolerance = +1/-3 dB Power class 4 (21 dBm) Tolerance = ±2 dB	0.7 dB	Formula: Upper Tolerance limit + TT 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 = ±(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

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 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 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.4 dB for $\frac{DPCCH\_E}{I_{or}}$ 0 ms for timing measurement	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 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB $\frac{DPCCH\_E_c}{I_{or}}$ levels: AB: -21.6 dB BD: -28.4 dB DE: -24.4 dB EF: -17.6 dB transmit ON/OFF time 200ms timing Uncertainty of OFF power measurement is handled by Transmit OFF power test and uncertainty of ON power measurement is handled by Minimum output power test.
5.5.1 Transmit OFF power (static case)	Transmit OFF power shall be less than -56 dBm	1.0 dB	Formula: Transmit OFF power + TT Transmit OFF power = –55dBm.
5.5.2 Transmit ON/OFF time mask (dynamic case)	Transmit ON power shall be the target value as defined in clause 5.5.2.2 Transmit OFF power shall be less than -56 dBm	On power upper TT = 0.7 dB On power lower TT = 1.0 dB Off power TT [ ] dB	Formula for transmit ON power: Transmit ON power target upper limit + On power upper TT Transmit ON power target lower limit - On power lower TT To calculate Transmit ON power target value range take the nominal TX power range from Table 5.5.2.3 then apply table 5.4.1.1 open limits then apply table 5.7.1 (only if there has been a transmission gap) then cap the upper value using table 5.2.1. Formula for transmit OFF power: Transmit OFF power + Off power TT Transmit OFF power = [ ]dBm
5.6 Change of TFC: power control step size	TFC step size = +5 to +9 dB	0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT Upper limit = -4.7 dB Lower limit = -9.3 dB
5.7 Power setting in uplink compressed mode	Various	TBD (Subset of 5.4.2)	TBD

<table>
<tr><th>Test</th><th colspan="2">Minimum Requirement in TS 25.101</th><th>Test Tolerance (TT)</th><th colspan="2">Test Requirement in TS 34.121</th></tr>
<tr><td>5.8 Occupied Bandwidth</td><td colspan="2">The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps.</td><td>0 kHz</td><td colspan="2">Formula: occupied channel bandwidth: + TT

occupied channel bandwidth = 5.0 MHz</td></tr>
<tr><td>5.9 Spectrum emission mask</td><td colspan="2">Minimum requirement defined in TS25.101 Table 6.10.
The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher.</td><td>1.5 dB</td><td colspan="2">Formula: Minimum requirement + TT
Lower limit + TT
Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10.
Zero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements.
The lower limit shall be –48.5 dBm / 3.84 MHz or which ever is higher.</td></tr>
<tr><td rowspan="2">5.10 Adjacent Channel Leakage Power Ratio (ACLR)</td><td colspan="2">If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below.</td><td>0.0 dB</td><td colspan="2">Formula: Absolute power threshold + TT</td></tr>
<tr><td colspan="2">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</td><td>0.8 dB</td><td colspan="2">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</td></tr>
<tr><td rowspan="12">5.11 Spurious Emissions</td><td colspan="2"></td><td></td><td colspan="2">Formula: Minimum Requirement+ TT
Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.</td></tr>
<tr><td>Frequency Band</td><td>Minimum Requirement</td><td></td><td>Frequency Band</td><td>Minimum Requirement</td></tr>
<tr><td>9 kHz ≤ f < 150 kHz</td><td>–36dBm /1kHz</td><td>0 dB</td><td>9kHz ≤ f < 1GHz</td><td>–36dBm /1kHz</td></tr>
<tr><td>150 kHz ≤ f < 30 MHz</td><td>–36dBm /10kHz</td><td>0 dB</td><td>150 kHz ≤ f < 30 MHz</td><td>–36dBm /10kHz</td></tr>
<tr><td>30 MHz ≤ f < 1000 MHz</td><td>–36dBm /100kHz</td><td>0 dB</td><td>30 MHz ≤ f < 1000 MHz</td><td>–36dBm /100kHz</td></tr>
<tr><td rowspan="3">1 GHz ≤ f < 12.75 GHz</td><td rowspan="3">–30dBm /1MHz</td><td>0 dB</td><td>1 GHz ≤ f < 2.2 GHz</td><td>–30dBm /1MHz</td></tr>
<tr><td>0 dB</td><td>2.2 GHz ≤ f < 4 GHz</td><td>–30dBm /1MHz</td></tr>
<tr><td>0 dB</td><td>4 GHz ≤ f < 12.75 GHz</td><td>–30dBm /1MHz</td></tr>
<tr><td>1893.5 MHz < f < 1919.6 MHz</td><td>–41dBm /300kHz</td><td>0 dB</td><td>1893.5 MHz < f < 1919.6 MHz</td><td>–41dBm /300kHz</td></tr>
<tr><td>925 MHz ≤ f ≤ 935 MHz</td><td>–67dBm /100kHz</td><td>0 dB</td><td>925 MHz ≤ f ≤ 935 MHz</td><td>–67dBm /100kHz</td></tr>
<tr><td>935 MHz < f ≤ 960 MHz</td><td>–79dBm /100kHz</td><td>0 dB</td><td>935 MHz < f ≤ 960 MHz</td><td>–79dBm /100kHz</td></tr>
<tr><td>1805 MHz ≤ f ≤ 1880 MHz</td><td>–71dBm /100kHz</td><td>0 dB</td><td>1805 MHz ≤ f ≤ 1880 MHz</td><td>–71dBm /100kHz</td></tr>
<tr><td>5.12 Transmit Intermodulation</td><td colspan="2">Intermodulation Product
5MHz -31 dBc
10MHz -41 dBc
CW Interferer level = -40 dBc</td><td>0 dB</td><td colspan="2">Formula: CW interferer level – TT/2

Intermod Products limits remain unchanged.

CW interferer level = -40 dBc</td></tr>
<tr><td>5.13.1 Transmit modulation: EVM</td><td colspan="2">The measured EVM shall not exceed 17.5%.</td><td>0%</td><td colspan="2">Formula: EVM limit + TT
EVM limit = 17.5 %</td></tr>
<tr><td>5.13.2 Transmit modulation: peak code domain error</td><td colspan="2">The measured Peak code domain error shall not exceed -15 dB.</td><td>1.0 dB</td><td colspan="2">Formula: Peak code domain error + TT
Peak code domain error = -14 dB</td></tr>
</table>

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

<table>
<tr><th>Test</th><th colspan="2">Minimum Requirement in TS 25.101</th><th>Test Tolerance (TT)</th><th colspan="2">Test Requirement in TS 34.121</th></tr>
<tr><td>6.2 Reference sensitivity level</td><td colspan="2">Îor = -106.7 dBm / 3.84 MHz
DPCH_Ec = –117 dBm / 3.84 MHz
BER limit = 0.001</td><td>0.7 dB</td><td colspan="2">Formula: Îor+ TT
DPCH_Ec + TT
BER limit unchanged

Îor = -106 dBm / 3.84 MHz
DPCH_Ec = -116.3 dBm / 3.84 MHz</td></tr>
<tr><td>6.3 Maximum input level</td><td colspan="2">-25 dBm Ior
-19 dBc DPCH_Ec/Ior</td><td>0.7 dB</td><td colspan="2">Formula: Ior-TT

Ior = -25.7 dBm</td></tr>
<tr><td>6.4 Adjacent Channel Selectivity</td><td colspan="2">Îor = -92.7 dBm / 3.84 MHz
DPCH_Ec = –103 dBm / 3.84 MHz
Ioac (modulated) = -52 dBm/3.84 MHz
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: Îor unchanged
DPCH_Ec unchanged
Ioac – TT
BER limit unchanged

Ioac = -52 dBm/3.84 MHz</td></tr>
<tr><td>6.5 Blocking Characteristics</td><td colspan="2">See Table 6.5.3 and 6.5.4. in TS34.121
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula:
$I_{blocking}$ (modulated) - TT (dBm/3.84MHz)
$I_{blocking}$ (CW) - TT (dBm)
BER limit unchanged</td></tr>
<tr><td>6.6 Spurious Response</td><td colspan="2">Iblocking(CW) –44 dBm
Fuw:
Spurious response frequencies
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: $I_{blocking}$ (CW) - TT (dBm)
Fuw unchanged
BER limit unchanged

$I_{blocking}$(CW) = -44 dBm</td></tr>
<tr><td>6.7 Intermodulation Characteristics</td><td colspan="2">Iouw1 (CW) -46 dBm
Iouw2 (modulated) –46 dBm / 3.84 MHz
Fuw1 (offset) 10 MHz
Fuw2 (offset) 20 MHz
Ior = -103.7 dBm/3.84 MHz
DPCH_Ec = -114 dBm/3.84

BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: Ior + TT
DPCH_Ec + TT
Iouw1 level unchanged
Iouw2 level unchanged
BER limit unchanged.

Ior = -114 dBm

BER limit. = 0.001</td></tr>
<tr><td rowspan="7">6.8 Spurious Emissions</td><td colspan="2"></td><td></td><td colspan="2">Formula: Maximum level + TT
Add zero to all the values of Maximum Level in table 6.8.1.</td></tr>
<tr><td>Frequency Band</td><td>Maximum level</td><td></td><td>Frequency Band</td><td>Maximum level</td></tr>
<tr><td>9kHz ≤ f < 1GHz</td><td>-57dBm /100kHz</td><td>0 dB</td><td>9kHz ≤ f < 1GHz</td><td>-57dBm /100kHz</td></tr>
<tr><td rowspan="3">1GHz ≤ f ≤ 12.75GHz</td><td rowspan="3">-47dBm /1MHz</td><td>0 dB</td><td>1GHz ≤ f ≤ 2.2GHz</td><td>-47dBm /1MHz</td></tr>
<tr><td>0 dB</td><td>2.2GHz < f ≤ 4GHz</td><td>-47dBm /1MHz</td></tr>
<tr><td>0 dB</td><td>4GHz < f ≤ 12.75GHz</td><td>-47dBm /1MHz</td></tr>
<tr><td>1920MHz ≤ f ≤ 1980MHz</td><td>-60dBm /3.84MHz</td><td>0 dB</td><td>1920MHz ≤ f ≤ 1980MHz</td><td>-60dBm /3.84MHz</td></tr>
<tr><td></td><td>2110MHz ≤ f ≤ 2170MHz</td><td>-60dBm /3.84MHz</td><td>0 dB</td><td>2110MHz ≤ f ≤ 2170MHz</td><td>-60dBm /3.84MHz</td></tr>
</table>

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
7.2 Demodulation of DPCH in static conditions	$\frac{DPCH\_E_c}{I_{or}}$ -5.5 to -16.6 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 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 to -15.0 I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ + ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -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 to -7.7 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -3.1 to -7.6 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 9-12	$\frac{DPCH\_E_c}{I_{or}}$ -4.4 to -11.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -4.3 to –11.7 dB:

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 to -15.0 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: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 $\frac{DPCH\_E_c}{I_{or}}$ -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 to -8.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -1.3 to -8.7 dB:
7.4 Demodulation of DPCH in moving propagation conditions	$\frac{DPCH\_E_c}{I_{or}}$ -10.9 to -14.5 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 to -12.6 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -16.7 dB:
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH\_E_c}{I_{or}}$ -18 to -18.3 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -17.9 to -18.2 dB:
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH\_E_c}{I_{or}}$ -~~7.5~~5.0 to -~~9.2~~10.5 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 to -2.2 dB $\frac{DPCH\_E_c}{I_{or}}$ -~~7.4~~4.9 to -~~9.1~~10.4 dB:
7.7.1 Demodulation in inter-cell soft Handover	$\frac{DPCH\_E_c}{I_{or}}$ -5.5 to –15.2 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = Ior2/Ioc = 6 to 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.8 to 0.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -5.4 to –15.4 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 dB Ior1 and Ior2 -60dBm	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0dB for Ior1 and Ior2	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\frac{DPCH\_E_c}{I_{or}}$ = -11,9 dB: Ior1 = –60dBm Ior2 = –60dBm 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 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 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 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 to -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 5 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 5.6 dB $\frac{DPCH\_E_c}{I_{or}}$ -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: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 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 to -18.4 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 dB $\frac{DPCH\_E_c}{I_{or}}$ -17.6 to –18.3 dB:
7.10 Blind transport format detection Tests 4, 5, 6	$\frac{DPCH\_E_c}{I_{or}}$ -13.0 to -13.8 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -12.9 to -13.7 dB:

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**259**	⌘ **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 ⌘ symbols.*

Proposed change affects:	UICC apps⌘ ☐	ME ☑	Radio Access Network ☑	Core Network ☐

Title:	⌘	Introduction of Test Tolerances to Cell Reselection in CELL_FACH tests 8.3.5.1 & 8.3.5.2		
Source:	⌘	T1		
Work item code:	⌘		***Date:*** ⌘	25/07/2003
Category:	⌘	**A**	***Release:*** ⌘	Rel-4
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for 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 condtions for test b) Revision of table 8.3.5.2.5 giving correct RF condtions 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				
		Y	**N**			
Other specs affected:	⌘		✓	Other core specifications	⌘	
		✓		Test specifications		
			✓	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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

8.3.5 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

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

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

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

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

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

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

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	½
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		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
S-CCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
OCNS_Ec/Ior	dB	-1.295		-1.295		-1.295		-1.295		-1.295		-1.295	
$\hat{I}_{or}/I_{oc}$	dB	7.3	10.27	10.27	7.3	0.27		0.27		0.27		0.27	
$\hat{I}_{or}$ *(Note 1)*	dBm	-62.73	-59.73	-59.73	-62.73	-69.73		-69.73		-69.73		-69.73	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dBm	21		21		21		21		21		21	
Qoffset $2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
IE "FACH Measurement occasion info"		not sent		not sent		not sent		not sent		not sent		not sent	

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.~~4~~5.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

4) After 15 seconds from completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.1.~~4~~5.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.1.45.

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

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	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 Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
S-CCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
OCNS_Ec/Ior	dB	-1.52		-1.52		-1.13		-1.13		-1.13		-1.13	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	7.0	10.4	10.4	7.0	0.3		0.3		0.3		0.3	
$\hat{I}_{or}$	dBm	-63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io *Note 1*	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

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

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

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

8.3.5.2 Two frequencies present in the neighbour list

8.3.5.2.1 Definition and applicability

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

The requirements and this test apply to the FDD UE.

8.3.5.2.2 Minimum requirements

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

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

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

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

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

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

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

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

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

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	½
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

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

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 Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
S-CCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
OCNS_Ec/Ior	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
$\hat{I}_{or}$ (Note 1)	dBm	-71.85	-67.75	-67.75	-71.85	-76.85	-74.75	-76.85	-74.75	-74.75	-76.85	-74.75	-76.85
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-15	-13	-13	-15	-20		-20		-20		-20	
Propagation Condition		AWGN											
Cell_selection_ and_reselection_ quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_ MAX_RACH	dBm	21		21		21		21		21		21	
Qoffset2$_{s, n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
Sintersearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
IE "FACH Measurement occasion info"		sent		sent		sent		sent		Sent		sent	
FACH Measurement occasion cycle length coefficient		3		3		3		3		3		3	
Inter-frequency FDD measurement indicator		TRUE		TRUE		TRUE		TRUE		TRUE		TRUE	
Inter-frequency TDD measurement indicator		FALSE		FALSE		FALSE		FALSE		FALSE		FALSE	

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

8.3.5.2.4.2 Procedure

1) The RF parameters for cell 1 are set up according to T1 in table 8.3.5.2.5.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

4) After 15 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.2.5.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.2.5.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until 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.

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

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.7		-10.7		-10.7		-10.7	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.7		-15.7		-15.7		-15.7	
S-CCPCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
OCNS_Ec/Ior	dB	-1.52		-1.52		-1.08		-1.08		-1.08		-1.08	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	-1.80	+4.64	+4.64	-1.80	-6.80	-3.16	-6.80	-3.16	-3.16	-6.80	-3.16	-6.80
$\hat{I}_{or}$	dBm	-71.8	-67.0	-67.0	-71.8	-76.8	-74.8	-76.8	-74.8	-74.8	-76.8	-74.8	-76.8
I_{oc}	dBm/3.84 MHz	-70.0	-71.6	-71.6	-70.0	-70.0	-71.6	-70.0	-71.6	-71.6	-70.0	-71.6	-70.0
CPICH_Ec/Io *Note 1*	dB	-14.4	-11.6	-11.6	-14.4	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7

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

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

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

Annex F (normative): General test conditions and declarations

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

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

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

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

F.1 Acceptable uncertainty of Test System

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

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

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

F.1.5 Requirements for support of RRM

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

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5 Cell Re-selection in CELL_FACH		
8.3.5.1 One frequency present in the neighbour list	~~Same as 8.2.2.1~~During T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} ±1.0 dB During T1: I_{or} (2) ±0.7 dB I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB During T2: I_{or} (1) ±0.7 dB I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB	~~Same as 8.2.2.1~~
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for Ior(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 Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of Ior(2) at T1 and the relative uncertainty of Ior(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(1) at T2 and the relative uncertainty of Ior(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].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.2 Two frequencies present in the neighbour list	~~Same as 8.2.2.2~~Channel 1 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (1) ±1.0 dB Channel 1 during T1: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 1 during T2: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 2 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (2) ±1.0 dB Channel 2 during T1: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB Channel 2 during T2: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	~~Same as 8.2.2.2~~
	Assumptions: a) to e): Same as for the one-frequency test 8.3.5.1. f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(2) and the relative uncertainty of Ior(5, 6), are uncorrelated to each other. g) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). h) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is to 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

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

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

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

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

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.5 Cell Re-selection in CELL_FACH			
8.3.5.1 One frequency present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis was performed using a spreadsheet, to be recorded in a TR [FFS].		
	During T1 and T2: Cells 1 and 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3, 4, 5, 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Ior(3, 4, 5, 6) = -69.73 dBm ~~$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB~~ ~~I_{oc} = - 70 dBm~~ ~~Ior/Ioc = 7.3 dB~~ ~~Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2~~	During T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for Ior(3, 4, 5, 6) ~~0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$~~ ~~0.3 dB for Ior/Ioc~~	During T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ior(3, 4, 5, 6) + TT ~~Formulas:~~ ~~$\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT~~ ~~Ior/Ioc = ratio - TT~~ ~~I_{oc} unchanged~~ ~~Ior/Ioc = 7 dB~~ ~~$\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:~~
	During T1: Ior(1) = -62.73 dBm Ior(2) = -59.73 dBm ~~$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB~~ ~~I_{oc} = - 70 dBm~~ ~~Ior/Ioc = 10.27 dB~~ ~~Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1~~	During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2) ~~0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$~~ ~~0.3 dB for Ior/Ioc~~	During T1: Ior(1) + TT Ior(2) + TT ~~Formulas:~~ ~~$\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT~~ ~~Ior/Ioc = ratio + TT~~ ~~Ioc unchanged~~ ~~Ior/Ioc = 10.57 dB~~ ~~$\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:~~
	During T2: Ior(1) = -59.73 dBm Ior(2) = -62.73 dBm	During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)	During T2: Ior(1) + TT Ior(2) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.5.2 Two frequencies present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis was performed using a spreadsheet, to be recorded in a TR [FFS].		
	Channel 1 during T1 and T2: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3 and 4: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB $\frac{CPICH\_E_c}{I_{or}}$ ~~= -10 dB~~ I_{oc} ~~= - 70 dBm~~ ~~Ior/Ioc = -3.4 dB~~ ~~Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2~~	Channel 1 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB ~~0.1 dB for~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~0.3 dB for Ior/Ioc~~	Channel 1 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT ~~Formulas:~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~= ratio - TT~~ ~~Ior/Ioc = ratio - TT~~ ~~Ioc unchanged~~ ~~Ioc ratio unchanged~~ ~~Ior/Ioc = -3.7 dB~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~-10.1 dB:~~
	Channel 1 during T1: Ior(1) = -71.85 dBm Ior(3, 4) = -76.85 dBm Ioc(1) = -70.00 dBm $\frac{CPICH\_E_c}{I_{or}}$ ~~= -10 dB~~ I_{oc} ~~= - 70 dBm~~ ~~Ior/Ioc = 2.2 dB~~ ~~Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1~~	Channel 1 during T1: +0.05 dB for Ior(1) +0.05 dB for Ior(3,4) 0.00 dB for Ioc(1) ~~0.1 dB for~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~0.3 dB for Ior/Ioc~~	Channel 1 during T1: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT ~~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 dB:~~
	Channel 1 during T2: Ior(1) = -67.75 dBm Ior(3, 4) = -74.75 dBm Ioc(1) = -70.00 dBm	Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.60 dB for Ioc(1)	Channel 1 during T2: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 5 and 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB	Channel 2 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Channel 2 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Ior(2) = -67.75 dBm Ior(5, 6) = -74.75 dBm Ioc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.60 dB for Ioc(2)	Channel 2 during T1: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
	Channel 2 during T2: Ior(2) = -71.85 dBm Ior(5, 6) = -76.85 dBm Ioc(2) = -70.00 dBm	Channel 2 during T2: +0.05 dB for Ior(2) +0.05 dB for Ior(5,6) 0.00 dB for Ioc(2)	Channel 2 during T2: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT

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⌘	**34.121**	**CR**	**260**	⌘**rev**	**-**	⌘	Current version:	**5.0.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☑ Radio Access Network ☑ Core Network ☐

Title:	⌘	Introduction of Test Tolerances to Cell Reselection in CELL_FACH tests 8.3.5.1 & 8.3.5.2
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	25/07/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for 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 condtions for test b) Revision of table 8.3.5.2.5 giving correct RF condtions 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 affected: ⌘

Y	N		
	✓	Other core specifications	⌘
✓		Test specifications	
	✓	O&M Specifications	

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.

8.3.5 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

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

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

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

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

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

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

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	½
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		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
S-CCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
OCNS_Ec/Ior	dB	-1.295		-1.295		-1.295		-1.295		-1.295		-1.295	
$\hat{I}_{or}/I_{oc}$	dB	7.3	10.27	10.27	7.3	0.27		0.27		0.27		0.27	
$\hat{I}_{or}$ (Note 1)	dBm	-62.73	-59.73	-59.73	-62.73	-69.73		-69.73		-69.73		-69.73	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dBm	21		21		21		21		21		21	
Qoffset $2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
IE "FACH Measurement occasion info"		not sent		not sent		not sent		not sent		not sent		not sent	

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.~~4~~5.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

4) After 15 seconds from completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.1.~~4~~5.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.1.45.

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

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	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 Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
S-CCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
OCNS_Ec/Ior	dB	-1.52		-1.52		-1.13		-1.13		-1.13		-1.13	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	7.0	10.4	10.4	7.0	0.3		0.3		0.3		0.3	
$\hat{I}_{or}$	dBm	-63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io *Note 1*	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

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

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

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

8.3.5.2 Two frequencies present in the neighbour list

8.3.5.2.1 Definition and applicability

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

The requirements and this test apply to the FDD UE.

8.3.5.2.2 Minimum requirements

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

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

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

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

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

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

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

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

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

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	½
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

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

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 Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
S-CCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
OCNS_Ec/Ior	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
$\hat{I}_{or}$ (Note 1)	dBm	-71.85	-67.75	-67.75	-71.85	-76.85	-74.75	-76.85	-74.75	-74.75	-76.85	-74.75	-76.85
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-15	-13	-13	-15	-20		-20		-20		-20	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dBm	21		21		21		21		21		21	
$Qoffset2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
Sintersearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
IE "FACH Measurement occasion info"		sent		sent		sent		sent		Sent		sent	
FACH Measurement occasion cycle length coefficient		3		3		3		3		3		3	
Inter-frequency FDD measurement indicator		TRUE		TRUE		TRUE		TRUE		TRUE		TRUE	
Inter-frequency TDD measurement indicator		FALSE		FALSE		FALSE		FALSE		FALSE		FALSE	

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

8.3.5.2.4.2 Procedure

1) The RF parameters for cell 1 are set up according to T1 in table 8.3.5.2.5.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

4) After 15 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.2.5.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.2.5.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until 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.

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

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.7		-10.7		-10.7		-10.7	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.7		-15.7		-15.7		-15.7	
S-CCPCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
OCNS_Ec/Ior	dB	-1.52		-1.52		-1.08		-1.08		-1.08		-1.08	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	-1.80	+4.64	+4.64	-1.80	-6.80	-3.16	-6.80	-3.16	-3.16	-6.80	-3.16	-6.80
$\hat{I}_{or}$	dBm	-71.8	-67.0	-67.0	-71.8	-76.8	-74.8	-76.8	-74.8	-74.8	-76.8	-74.8	-76.8
I_{oc}	dBm/3.84 MHz	-70.0	-71.6	-71.6	-70.0	-70.0	-71.6	-70.0	-71.6	-71.6	-70.0	-71.6	-70.0
CPICH_Ec/Io *Note 1*	dB	-14.4	-11.6	-11.6	-14.4	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7

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

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

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

Annex F (normative): General test conditions and declarations

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

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

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

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

F.1 Acceptable uncertainty of Test System

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

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

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

F.1.5 Requirements for support of RRM

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

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5 Cell Re-selection in CELL_FACH		
8.3.5.1 One frequency present in the neighbour list	~~Same as 8.2.2.1~~During T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} ±1.0 dB During T1: I_{or} (2) ±0.7 dB I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB During T2: I_{or} (1) ±0.7 dB I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB	~~Same as 8.2.2.1~~
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for Ior(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 Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of Ior(2) at T1 and the relative uncertainty of Ior(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(1) at T2 and the relative uncertainty of Ior(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].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.2 Two frequencies present in the neighbour list	~~Same as 8.2.2.2~~Channel 1 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (1) ±1.0 dB Channel 1 during T1: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 1 during T2: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 2 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (2) ±1.0 dB Channel 2 during T1: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB Channel 2 during T2: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	~~Same as 8.2.2.2~~
	Assumptions: a) to e): Same as for the one-frequency test 8.3.5.1. f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(2) and the relative uncertainty of Ior(5, 6), are uncorrelated to each other. g) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). h) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is to 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

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

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

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

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

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.5 Cell Re-selection in CELL_FACH			
8.3.5.1 One frequency present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis was performed using a spreadsheet, to be recorded in a TR [FFS].		
	During T1 and T2: Cells 1 and 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3, 4, 5, 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Ior(3, 4, 5, 6) = -69.73 dBm $\frac{CPICH\_E_c}{I_{or}}$ ~~= -10 dB~~ ~~I_{oc} = - 70 dBm~~ ~~Ior/Ioc = 7.3 dB~~ ~~Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2~~	During T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for Ior(3, 4, 5, 6) ~~0.1 dB for~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~0.3 dB for Ior/Ioc~~	During T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ior(3, 4, 5, 6) + TT ~~Formulas:~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~= ratio - TT~~ ~~Ior/Ioc = ratio - TT~~ ~~I_{oc} unchanged~~ ~~Ior/Ioc = 7 dB~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~-10.1 dB:~~
	During T1: Ior(1) = -62.73 dBm Ior(2) = -59.73 dBm $\frac{CPICH\_E_c}{I_{or}}$ ~~= -10 dB~~ ~~I_{oc} = - 70 dBm~~ ~~Ior/Ioc = 10.27 dB~~ ~~Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1~~	During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2) ~~0.1 dB for~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~0.3 dB for Ior/Ioc~~	During T1: Ior(1) + TT Ior(2) + TT ~~Formulas:~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~= ratio + TT~~ ~~Ior/Ioc = ratio + TT~~ ~~Ioc unchanged~~ ~~Ior/Ioc = 10.57 dB~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~-9.9 dB:~~
	During T2: Ior(1) = -59.73 dBm Ior(2) = -62.73 dBm	During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)	During T2: Ior(1) + TT Ior(2) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.5.2 Two frequencies present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis was performed using a spreadsheet, to be recorded in a TR [FFS].		
	Channel 1 during T1 and T2: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3 and 4: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB $\frac{CPICH\_E_c}{I_{or}}$ ~~= -10 dB~~ ~~I_{oc} = - 70 dBm~~ ~~Ior/Ioc = -3.4 dB~~ ~~Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2~~	Channel 1 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB ~~0.1 dB for~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~0.3 dB for Ior/Ioc~~	Channel 1 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT ~~Formulas:~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~= ratio - TT~~ ~~Ior/Ioc = ratio - TT~~ ~~Ioc unchanged~~ ~~Ioc ratio unchanged~~ ~~Ior/Ioc = -3.7 dB~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~-10.1 dB:~~
	Channel 1 during T1: Ior(1) = -71.85 dBm Ior(3, 4) = -76.85 dBm Ioc(1) = -70.00 dBm $\frac{CPICH\_E_c}{I_{or}}$ ~~= -10 dB~~ ~~I_{oc} = - 70 dBm~~ ~~Ior/Ioc = 2.2 dB~~ ~~Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1~~	Channel 1 during T1: +0.05 dB for Ior(1) +0.05 dB for Ior(3,4) 0.00 dB for Ioc(1) ~~0.1 dB for~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~0.3 dB for Ior/Ioc~~	Channel 1 during T1: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT ~~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 dB:~~
	Channel 1 during T2: Ior(1) = -67.75 dBm Ior(3, 4) = -74.75 dBm Ioc(1) = -70.00 dBm	Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.60 dB for Ioc(1)	Channel 1 during T2: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 5 and 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB	Channel 2 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Channel 2 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Ior(2) = -67.75 dBm Ior(5, 6) = -74.75 dBm Ioc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.60 dB for Ioc(2)	Channel 2 during T1: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
	Channel 2 during T2: Ior(2) = -71.85 dBm Ior(5, 6) = -76.85 dBm Ioc(2) = -70.00 dBm	Channel 2 during T2: +0.05 dB for Ior(2) +0.05 dB for Ior(5,6) 0.00 dB for Ioc(2)	Channel 2 during T2: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**261**	⌘ **rev**	**-**	⌘ Current version:	**3.13.0** ⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Test Requirements for RRM CPICH RSCP Inter Frequency Measurement		
Source:	⌘	T1		
Work item code:	⌘		***Date:*** ⌘	14/07/2003
Category:	⌘	F	***Release:*** ⌘	R99
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Test Requirements are missing.
Summary of change:	⌘	Test Requirements are included
Consequences if not approved:	⌘	Test could fail "good UEs" because Test Requirements differ from the Minimum Requirements

Clauses affected:	⌘	8.7.1.2				
		Y	**N**			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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

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$|_{dBm}$ ≥ -114 dBm.
- $\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB$.
- | Channel 1_Io$|_{dBm/3.84\ MHz}$ -Channel 2_Io$|_{dBm/3.84\ MHz}$ | ≤ 20 dB.
- $\left.\frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \le 20dB$.

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	±6	±6	-94...-50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.2.1 and A.9.1.1.2.

8.7.1.2.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.2.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

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

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

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 – TTI/10msec))mod 256". CPICH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Table 8.7.1.2.1.2: CPICH RSCP Inter frequency ~~tests~~ parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-60.00	-60.00	-84.00	-94.46
Îor/Ioc	dB	9.54	9.54	0	-9.54
CPICH RSCP, Note 1	dBm	-60.46	-60.46	-94.0	-114.0
Io, Note 1	dBm/3.84 MHz	-50.00	-50.00	-81.0	-94.0
Propagation condition	-	AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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.

~~1~~2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

~~2~~3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

~~3~~4) SS shall transmit MEASUREMENT CONTROL message for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.

~~4~~5) UE shall transmit periodically MEASUREMENT REPORT messages.

~~5~~6) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

~~6~~7) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

~~7~~8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.~~2~~4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~5~~6) and ~~6~~7) above are repeated.

~~8~~9) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~9~~10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

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

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 Not Present Not Present Not Present Not Present Not Present Not Present CELL_DCH 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 - CHOICE *channel requirement*	 Not Present Not Present
Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links -Downlink DPCH info common for all RL -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI -TGPS Status Flag -TGCFN -Transmission gap pattern sequence configuration parameters -TGMP -TGPRC -TGSN -TGL1 -TGL2 -TGD -TGPL1 -TGPL2 -RPP -ITP -CHOICE UL/DL mode -Downlink compressed mode method -Uplink compressed mode method -Downlink frame type -DeltaSIR1 -DeltaSIRafter1 -DeltaSIR2 -DeltaSIRafter2 -N Identify abort -T Reconfirm abort -TX Diversity Mode -SSDT information -Default DPCH Offset Value -Downlink information per radio link list -Downlink information for each radio link -Choice mode -Primary CPICH info -Primary scrambling code	 FDD Not Present Not Present FDD 1 Activate (Current CFN + (256 – TTI/10msec))mod 256 FDD measurement Infinity 4 7 Not Present 0 3 Not Present Mode 0 Mode 0 UL and DL SF/2 SF/2 B 3.0 3.0 Not Present Not Present Not Present Not Present Not Present Not Present Not Present FDD 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 -Integrity check info	 0 Not Present

Measurement Information elements
-Measurement Identity
-Measurement Command
-Measurement Reporting Mode
 - Measurement Report Transfer Mode
 - Periodical Reporting / Event Trigger Reporting Mode
-Additional measurement list
-CHOICE Measurement Type
 -Intra-frequency measurement
  - Intra-frequency measurement objects list
   -Intra-frequency cell info list
  -Intra-frequency measurement quantity
   -Filter coefficient
   -CHOICE mode
    -Measurement quantity
  -Intra-frequency reporting quantity
   -Reporting quantities for active set cells
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
   -Reporting quantities for monitored set cells
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
   -Reporting quantities for detected set cells
  -Reporting cell status
   -CHOICE reported cell
 	
    -Maximum number of reported cells
  -Measurement validity
  -CHOICE *report criteria*
   -Amount of reporting
   -Reporting interval
	
	1
	Modify
	
	Acknowledged mode RLC
	Periodical reporting
	
	Not Present
	Intra-frequency measurement
	
	Not Present
	
	0
	FDD
	CPICH RSCP
	
	No report
	
	TRUE
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	
	No report
	
	FALSE
	
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	Not Present
	
	Report all active set cells + cells within monitored set on used frequency
	Virtual/active set cells + 2
	Not Present
	Periodical reporting criteria
	Infinity
	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 -Integrity check info	 0 Not Present

Measurement Information elements
-Measurement Identity
-Measurement Command
-Measurement Reporting Mode
 - Measurement Report Transfer Mode
 - Periodical Reporting / Event Trigger Reporting Mode
-Additional measurement list
-CHOICE Measurement Type
 -Inter-frequency measurement object list
  -CHOICE Inter-frequency cell removal
  -New inter-frequency cells
  -Cell for measurement
 -Inter-frequency measurement quantity
  -CHOICE reporting criteria
   -Filter coefficient
   -CHOICE mode
    -Measurement quantity for frequency quality estimate
 -Inter-frequency reporting quantity
  -UTRA Carrier RSSI
  -Frequency quality estimate
  -Non frequency related cell reporting quantities
   -SFN-SFN observed time difference reporting indicator
   -Cell synchronisation information reporting indicator
   -Cell Identity reporting indicator
   -CHOICE mode
    -CPICH Ec/N0 reporting indicator
    -CPICH RSCP reporting indicator
    -Pathloss reporting indicator
 -Reporting cell status
  -CHOICE reported cell
 	
   -Maximum number of reported cells
 -Measurement validity
 -Inter-frequency set update
 -CHOICE report criteria
  -Amount of reporting
  -Reporting interval
	
	2
	Setup
	
	Acknowledged mode RLC
	Periodical reporting
	
	Not Present
	Inter-frequency measurement
	
	Not Present
	Cell 2 information is included
	Not Present
	
	Inter-frequency reporting criteria
	0
	FDD
	CPICH RSCP
	
	TRUE
	TRUE
	
	No report
	
	TRUE
	
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	
	Report all active set cells + cells within monitored set on used frequency
	Virtual/active set cells + 2
	Not Present
	Not Present
	Periodical reporting criteria
	Infinity
	500 ms

Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Inter frequency test cases

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

8.7.1.2.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in ~~clause ~~table 8.7.1.2.1.~~2~~4.

Table 8.7.1.2.1.3: CPICH_RSCP Inter frequency relative accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
CPICH_RSCP	dBm	±7.1	±7.1	-94...-50

Table 8.7.1.2.1.4: CPICH RSCP Inter frequency tests parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-61.6	-61.6	-83.00	-93.46
Îor/Ioc	dB	9.84	9.84	0.3	-9.24
CPICH RSCP, Note 1	dBm	-61.8	-61.8	-92.7	-112.7
Io, Note 1	dBm	-51.3	-51.3	-79.8	-93.0
Propagation condition	-	AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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.					

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 **Tdoc ⌘T1-030842**
Munich, Germany, 28 July – 01 August 2003

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**262**	⌘**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 ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Test Requirements for RRM CPICH RSCP Inter Frequency Measurement
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	14/07/2003
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
- *2 (GSM Phase 2)*
- *R96 (Release 1996)*
- *R97 (Release 1997)*
- *R98 (Release 1998)*
- *R99 (Release 1999)*
- *Rel-4 (Release 4)*
- *Rel-5 (Release 5)*
- *Rel-6 (Release 6)*

Reason for change:	⌘	Test Requirements are missing.
Summary of change:	⌘	Test Requirements are included
Consequences if not approved:	⌘	Test could fail "good UEs" because Test Requirements differ from the Minimum Requirements

Clauses affected:	⌘	8.7.1.2				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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

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$|_{dBm}$ ≥ -114 dBm.
- $\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$.
- | Channel 1_Io$|_{dBm/3.84\ MHz}$ -Channel 2_Io$|_{dBm/3.84\ MHz}$ | ≤ 20 dB.
- $\left.\frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$.

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	±6	±6	-94...-50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.2.1 and A.9.1.1.2.

8.7.1.2.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.2.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

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

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

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 – TTI/10msec))mod 256". CPICH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Table 8.7.1.2.1.2: CPICH RSCP Inter frequency ~~tests~~ parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-60.00	-60.00	-84.00	-94.46
Îor/Ioc	dB	9.54	9.54	0	-9.54
CPICH RSCP, Note 1	dBm	-60.46	-60.46	-94.0	-114.0
Io, Note 1	dBm/3.84 MHz	-50.00	-50.00	-81.0	-94.0
Propagation condition	-	AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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.

~~1~~2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

~~2~~3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

~~3~~4) SS shall transmit MEASUREMENT CONTROL message for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.

~~4~~5) UE shall transmit periodically MEASUREMENT REPORT messages.

~~5~~6) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

~~6~~7) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

~~7~~8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.~~2~~4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~5~~6) and ~~6~~7) above are repeated.

~~8~~9) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~9~~10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

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

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 Not Present Not Present Not Present Not Present Not Present Not Present CELL_DCH 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 - CHOICE *channel requirement*	 Not Present Not Present

Downlink radio resources
-CHOICE mode
 -Downlink PDSCH information
-Downlink information common for all radio links
 -Downlink DPCH info common for all RL
 -CHOICE mode
  -DPCH compressed mode info
   -Transmission gap pattern sequence
    -TGPSI
    -TGPS Status Flag
    -TGCFN
 	
    -Transmission gap pattern sequence configuration parameters
     -TGMP
     -TGPRC
     -TGSN
     -TGL1
     -TGL2
     -TGD
     -TGPL1
     -TGPL2
     -RPP
     -ITP
     -CHOICE UL/DL mode
      -Downlink compressed mode method
      -Uplink compressed mode method
     -Downlink frame type
     -DeltaSIR1
     -DeltaSIRafter1
     -DeltaSIR2
     -DeltaSIRafter2
     -N Identify abort
     -T Reconfirm abort
  -TX Diversity Mode
  -SSDT information
 -Default DPCH Offset Value
-Downlink information per radio link list
 -Downlink information for each radio link
  -Choice mode
   -Primary CPICH info
    -Primary scrambling code
	
	FDD
	Not Present
	
	Not Present
	FDD
	
	1
	Activate
	(Current CFN + (256 – TTI/10msec))mod 256
	
	FDD measurement
	Infinity
	4
	7
	Not Present
	0
	3
	Not Present
	Mode 0
	Mode 0
	UL and DL
	SF/2
	SF/2
	B
	3.0
	3.0
	Not Present
	Not Present
	Not Present
	Not Present
	Not Present
	Not Present
	Not Present
	
	FDD
	
	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 Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-CHOICE *report criteria*	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

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

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-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 cell status	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

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

8.7.1.2.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in ~~clause~~ table 8.7.1.2.1.~~2~~4.

Table 8.7.1.2.1.3: CPICH_RSCP Inter frequency relative accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
CPICH_RSCP	dBm	±7.1	±7.1	-94...-50

Table 8.7.1.2.1.4: CPICH RSCP Inter frequency tests parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-61.6	-61.6	-83.00	-93.46
Îor/Ioc	dB	9.84	9.84	0.3	-9.24
CPICH RSCP, Note 1	dBm	-61.8	-61.8	-92.7	-112.7
Io, Note 1	dBm	-51.3	-51.3	-79.8	-93.0
Propagation condition	-	AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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.					

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 **Tdoc ⌘T1-030843**
Munich, Germany, 28 July – 01 August 2003

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**263**	⌘**rev**	**-**	⌘	Current version:	**5.0.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Test Requirements for RRM CPICH RSCP Inter Frequency Measurement
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	14/07/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Test Requirements are missing.
Summary of change:	⌘	Test Requirements are included
Consequences if not approved:	⌘	Test could fail "good UEs" because Test Requirements differ from the Minimum Requirements

Clauses affected:	⌘	8.7.1.2				
		Y	**N**			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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:

- $CPICH\_RSCP1,2|_{dBm} \geq -114$ dBm.
- $\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$.
- $|$ Channel $1\_Io|_{dBm/3.84\ MHz}$ -Channel $2\_Io|_{dBm/3.84\ MHz}$ $| \leq 20$ dB.
- $\left. \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in\ dB} - \left. \left(\frac{CPICH\_E_c}{I_{or}} \right) \right|_{in\ dB} \leq 20dB$.

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	±6	±6	-94...-50

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.2.1 and A.9.1.1.2.

8.7.1.2.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.2.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

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

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

In this case both cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 – TTI/10msec))mod 256". CPICH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Table 8.7.1.2.1.2: CPICH RSCP Inter frequency ~~tests~~ parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-60.00	-60.00	-84.00	-94.46
Îor/Ioc	dB	9.54	9.54	0	-9.54
CPICH RSCP, Note 1	dBm	-60.46	-60.46	-94.0	-114.0
Io, Note 1	dBm/3.84 MHz	-50.00	-50.00	-81.0	-94.0
Propagation condition	-	AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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.

~~1~~2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

~~2~~3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

~~3~~4) SS shall transmit MEASUREMENT CONTROL message for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.

~~4~~5) UE shall transmit periodically MEASUREMENT REPORT messages.

~~5~~6) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

~~6~~7) The result of step 5) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

~~7~~8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.~~2~~4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~5~~6) and ~~6~~7) above are repeated.

~~8~~9) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~9~~10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

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

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 Not Present Not Present Not Present Not Present Not Present Not Present CELL_DCH 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 - CHOICE *channel requirement*	 Not Present Not Present
Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links -Downlink DPCH info common for all RL -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI -TGPS Status Flag -TGCFN -Transmission gap pattern sequence configuration parameters -TGMP -TGPRC -TGSN -TGL1 -TGL2 -TGD -TGPL1 -TGPL2 -RPP -ITP -CHOICE UL/DL mode -Downlink compressed mode method -Uplink compressed mode method -Downlink frame type -DeltaSIR1 -DeltaSIRafter1 -DeltaSIR2 -DeltaSIRafter2 -N Identify abort -T Reconfirm abort -TX Diversity Mode -SSDT information -Default DPCH Offset Value -Downlink information per radio link list -Downlink information for each radio link -Choice mode -Primary CPICH info -Primary scrambling code	 FDD Not Present Not Present FDD 1 Activate (Current CFN + (256 – TTI/10msec))mod 256 FDD measurement Infinity 4 7 Not Present 0 3 Not Present Mode 0 Mode 0 UL and DL SF/2 SF/2 B 3.0 3.0 Not Present Not Present Not Present Not Present Not Present Not Present Not Present FDD 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 -Integrity check info	 0 Not Present

Measurement Information elements
-Measurement Identity
-Measurement Command
-Measurement Reporting Mode
 - Measurement Report Transfer Mode
 - Periodical Reporting / Event Trigger Reporting Mode
-Additional measurement list
-CHOICE Measurement Type
 -Intra-frequency measurement
  - Intra-frequency measurement objects list
   -Intra-frequency cell info list
  -Intra-frequency measurement quantity
   -Filter coefficient
   -CHOICE mode
    -Measurement quantity
  -Intra-frequency reporting quantity
   -Reporting quantities for active set cells
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
   -Reporting quantities for monitored set cells
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
   -Reporting quantities for detected set cells
  -Reporting cell status
   -CHOICE reported cell
 	
    -Maximum number of reported cells
  -Measurement validity
  -CHOICE *report criteria*
   -Amount of reporting
   -Reporting interval
	
	1
	Modify
	
	Acknowledged mode RLC
	Periodical reporting
	
	Not Present
	Intra-frequency measurement
	
	Not Present
	
	0
	FDD
	CPICH RSCP
	
	No report
	
	TRUE
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	
	No report
	
	FALSE
	
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	Not Present
	
	Report all active set cells + cells within monitored set on used frequency
	Virtual/active set cells + 2
	Not Present
	Periodical reporting criteria
	Infinity
	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 -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Inter-frequency measurement object list -CHOICE Inter-frequency cell removal -New inter-frequency cells -Cell for measurement -Inter-frequency measurement quantity -CHOICE reporting criteria -Filter coefficient -CHOICE mode -Measurement quantity for frequency quality estimate -Inter-frequency reporting quantity -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -Inter-frequency set update -CHOICE report criteria -Amount of reporting -Reporting interval	 2 Setup Acknowledged mode RLC Periodical reporting Not Present Inter-frequency measurement Not Present Cell 2 information is included Not Present Inter-frequency reporting criteria 0 FDD CPICH RSCP TRUE TRUE No report TRUE TRUE FDD TRUE TRUE TRUE Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Not Present Periodical reporting criteria Infinity 500 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Inter frequency test cases

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

8.7.1.2.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in ~~clause~~ table 8.7.1.2.1.~~2~~4.

Table 8.7.1.2.1.3: CPICH_RSCP Inter frequency relative accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
CPICH_RSCP	dBm	±7.1	±7.1	-94...-50

Table 8.7.1.2.1.4: CPICH RSCP Inter frequency tests parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-61.6	-61.6	-83.00	-93.46
Îor/Ioc	dB	9.84	9.84	0.3	-9.24
CPICH RSCP, Note 1	dBm	-61.8	-61.8	-92.7	-112.7
Io, Note 1	dBm	-51.3	-51.3	-79.8	-93.0
Propagation condition	-	AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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.					

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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CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**264**	⌘**rev**	**-**	⌘	Current version:	**3.13.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Test Requirements for RRM CPICH RSCP Intra Frequency Measurement
Source:	⌘	T1
Work item code:	⌘	***Date:*** ⌘ 29/07/2003
Category:	⌘	**F** — ***Release:*** ⌘ R99
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.
		Use one of the following releases: *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Core requirements have been modified in 25.133 CR577 (R4-030480, RP-030209). Test Requirements are missing.
Summary of change:	⌘	Minimum requirements have been modified. Test Requirements are included.
Consequences if not approved:	⌘	TS 25.133 and TS 34.121 are inconsistent. Test could fail "good UEs" because Test Requirements differ from the Minimum Requirements.

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

How to create CRs using this form:

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

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

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

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

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$|_{\text{dBm}}$ ≥ -114 dBm.
- $\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \le 20dB$

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	±6	±9	-94...-70
	dBm	±8	±11	-70...-50

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.

Table 8.7.1.1.1.2: CPICH RSCP Intra frequency ~~test~~ parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-75.54		-59.98		-97.~~52~~47	
Îor/Ioc	dB	4	0	9	0	0	-6.53
CPICH RSCP, Note 1	dBm	-81.5	-85.5	-60.98	-69.88	-107.~~5~~47	-114.0
Io, Note 1	dBm/3.84 MHz	-69		-50		-94	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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] 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) 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.

~~1~~2) SS shall transmit MEASUREMENT CONTROL message.

~~2~~3) UE shall transmit periodically MEASUREMENT REPORT messages.

~~3~~4) 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.

~~4~~5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.~~2~~4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step ~~3~~4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.~~2~~4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step ~~3~~4) above is repeated.

~~5~~6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~6~~7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

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

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Intra-frequency measurement - Intra-frequency measurement objects list -Intra-frequency measurement quantity -Filter coefficient -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity -Reporting quantities for active set cells -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for monitored set cells -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for detected set cells -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -CHOICE *report criteria* -Amount of reporting -Reporting interval	 1 Modify Acknowledged mode RLC Periodical reporting Not Present Intra-frequency measurement Not Present 0 FDD CPICH RSCP No report TRUE TRUE FDD TRUE TRUE TRUE No report FALSE TRUE FDD TRUE TRUE TRUE Not Present Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Periodical reporting criteria Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.1.1.1.5 Test requirements

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

Table 8.7.1.1.1.3: CPICH_RSCP Intra frequency absolute accuracy, test requirement

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
CPICH_RSCP	dBm	±7.4	±10.4	-94...-70
	dBm	±9.4	±12.4	-70...-50

Table 8.7.1.1.1.4: CPICH RSCP Intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
Îor/Ioc	dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH RSCP, Note 1	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
Io, Note 1	dBm	-67.8		-51,4		-92,8	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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$|_{dBm} \geq$ -114 dBm.
- $\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$
- $\left| \frac{I_o}{(\hat{I}_{or})} \right|_{in\ dB} - \left(\frac{CPICH\_E_c}{I_{or}} \right) \Bigg|_{in\ dB} \leq 20dB$

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	±3	±3	-94...-50

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.

~~1~~2) SS shall transmit MEASUREMENT CONTROL message.

~~2~~3) UE shall transmit periodically MEASUREMENT REPORT messages.

~~3~~4) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

~~4~~5) The result of step 3) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

~~5~~6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.~~1~~2.~~2~~3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~3~~4) and ~~4~~5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.~~1~~2.~~2~~3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~3~~4) and ~~4~~5) above are repeated.

~~6~~7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~7~~8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

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

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.1.1.2.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in ~~clause~~ table 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

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
Îor/Ioc	dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH RSCP, Note 1	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
Io, Note 1	dBm	-67.8		-51,4		-92,8	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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 *Tdoc ⌘T1-030860*
Munich, Germany, 28 July – 01 August 2003

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**265**	⌘**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 ⌘ symbols.*

Proposed change affects:	UICC apps⌘		ME	X	Radio Access Network		Core Network

Title:	⌘	Test Requirements for RRM CPICH RSCP Intra Frequency Measurement		
Source:	⌘	T1		
Work item code:	⌘	TEI	***Date:*** ⌘	29/07/2003
Category:	⌘	**A**	***Release:*** ⌘	Rel-4
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for 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 not approved:	⌘	TS 25.133 and TS 34.121 are inconsistent. Test could fail “good UEs” because Test Requirements differ from the Minimum Requirements.

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

How to create CRs using this form:

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

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

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

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

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$|_{dBm} \geq$ -114 dBm.
- $\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	±6	±9	-94...-70
	dBm	±8	±11	-70...-50

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.

Table 8.7.1.1.1.2: CPICH RSCP Intra frequency ~~test~~ parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-75.54		-59.98		-97.~~52~~47	
Îor/Ioc	dB	4	0	9	0	0	-6.53
CPICH RSCP, Note 1	dBm	-81.5	-85.5	-60.98	-69.88	-107.~~5~~47	-114.0
Io, Note 1	dBm/3.84 MHz	-69		-50		-94	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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] 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) 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.

~~1~~2) SS shall transmit MEASUREMENT CONTROL message.

~~2~~3) UE shall transmit periodically MEASUREMENT REPORT messages.

~~3~~4) 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.

~~4~~5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.~~2~~4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step ~~3~~4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.~~2~~4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step ~~3~~4) above is repeated.

~~5~~6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~6~~7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

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

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-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 indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-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.

Table 8.7.1.1.1.3: CPICH_RSCP Intra frequency absolute accuracy, test requirement

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
CPICH_RSCP	dBm	±7.4	±10.4	-94...-70
	dBm	±9.4	±12.4	-70...-50

Table 8.7.1.1.1.4: CPICH RSCP Intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
Îor/Ioc	dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH RSCP, Note 1	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
Io, Note 1	dBm	-67.8		-51,4		-92,8	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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$|_{dBm} \geq$ -114 dBm.
- $$\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$$
- $$\left| \frac{I_o}{(\hat{I}_{or})} \right|_{in\ dB} - \left(\frac{CPICH\_E_c}{I_{or}} \right) \Bigg|_{in\ dB} \leq 20dB$$

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	±3	±3	-94...-50

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.

~~1~~2) SS shall transmit MEASUREMENT CONTROL message.

~~2~~3) UE shall transmit periodically MEASUREMENT REPORT messages.

~~3~~4) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

~~4~~5) The result of step 3) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

~~5~~6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.~~1~~2.~~2~~3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~3~~4) and ~~4~~5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.~~1~~2.~~2~~3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~3~~4) and ~~4~~5) above are repeated.

~~6~~7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~7~~8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

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

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.1.1.2.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in ~~clause~~ table 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

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
Îor/Ioc	dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH RSCP, Note 1	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
Io, Note 1	dBm	-67.8		-51,4		-92,8	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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 **Tdoc ⌘T1-030861**
Munich, Germany, 28 July – 01 August 2003

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**266**	⌘ **rev**	**-**	⌘	Current version:	**5.0.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘	[ ]	ME	X	Radio Access Network	[ ]	Core Network	[ ]

Title:	⌘	Test Requirements for RRM CPICH RSCP Intra Frequency Measurement		
Source:	⌘	T1		
Work item code:	⌘	TEI	***Date:*** ⌘	29/07/2003
Category:	⌘	**A**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Core requirements have been modified in 25.133 CR579 (R4-030482, RP-030209). Test Requirements are missing
Summary of change:	⌘	Minimum requirements have been modified. Test Requirements are included.
Consequences if not approved:	⌘	TS 25.133 and TS 34.121 are inconsistent. Test could fail “good UEs” because Test Requirements differ from the Minimum Requirements.

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

How to create CRs using this form:

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

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

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

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$|_{dBm}$ ≥ -114 dBm.
- $\left.\frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	±6	±9	-94...-70
	dBm	±8	±11	-70...-50

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.

Table 8.7.1.1.1.2: CPICH RSCP Intra frequency ~~test~~ parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-75.54		-59.98		-97.~~52~~47	
Îor/Ioc	dB	4	0	9	0	0	-6.53
CPICH RSCP, Note 1	dBm	-81.5	-85.5	-60.98	-69.88	-107.~~5~~47	-114.0
Io, Note 1	dBm/3.84 MHz	-69		-50		-94	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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] 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) 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.

~~1~~2) SS shall transmit MEASUREMENT CONTROL message.

~~2~~3) UE shall transmit periodically MEASUREMENT REPORT messages.

~~3~~4) 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.

~~4~~5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.~~2~~4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step ~~3~~4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.~~2~~4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step ~~3~~4) above is repeated.

~~5~~6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~6~~7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

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

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Intra-frequency measurement - Intra-frequency measurement objects list -Intra-frequency measurement quantity -Filter coefficient -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity -Reporting quantities for active set cells -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for monitored set cells -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for detected set cells -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -CHOICE *report criteria* -Amount of reporting -Reporting interval	 1 Modify Acknowledged mode RLC Periodical reporting Not Present Intra-frequency measurement Not Present 0 FDD CPICH RSCP No report TRUE TRUE FDD TRUE TRUE TRUE No report FALSE TRUE FDD TRUE TRUE TRUE Not Present Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Periodical reporting criteria Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.1.1.1.5 Test requirements

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

Table 8.7.1.1.1.3: CPICH_RSCP Intra frequency absolute accuracy, test requirement

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
CPICH_RSCP	dBm	±7.4	±10.4	-94...-70
	dBm	±9.4	±12.4	-70...-50

Table 8.7.1.1.1.4: CPICH RSCP Intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
Îor/Ioc	dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH RSCP, Note 1	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
Io, Note 1	dBm	-67.8		-51,4		-92,8	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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:

- $CPICH\_RSCP1,2|_{dBm} \geq -114$ dBm.
- $\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$
- $\left. \frac{I_o}{(\hat{I}_{or})} \right|_{in\ dB} - \left. \left(\frac{CPICH\_E_c}{I_{or}} \right) \right|_{in\ dB} \leq 20dB$

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_RSCP	dBm	±3	±3	-94...-50

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.

~~1~~2) SS shall transmit MEASUREMENT CONTROL message.

~~2~~3) UE shall transmit periodically MEASUREMENT REPORT messages.

~~3~~4) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

~~4~~5) The result of step 3) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.

~~5~~6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.~~1~~2.~~2~~3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~3~~4) and ~~4~~5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.~~1~~2.~~2~~3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~3~~4) and ~~4~~5) above are repeated.

~~6~~7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~7~~8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

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

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.1.1.2.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in ~~clause~~ table 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

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-15	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94
Ioc	dBm/ 3.84 MHz	-74.54		-61,6		-96.47	
Îor/Ioc	dB	4.3	0.3	9.3	0.3	0.3	-6.23
CPICH RSCP, Note 1	dBm	-80.2	-84.2	-62.3	-71.3	-106.17	-112.7
Io, Note 1	dBm	-67.8		-51,4		-92,8	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH RSCP and Io 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-1 August, 2003

Tdoc ⌘T1-030862

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR 267**	⌘**rev**	**-** ⌘	Current version:	**3.13.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘ Correction to RRC Re-establishment delay test case (R99)		
Source:	⌘ T1		
Work item code:	⌘ TEI	***Date:*** ⌘	29/07/2003
Category:	⌘ **F**	***Release:*** ⌘	R99
	Use one of the following categories: ***F** (correction)* ***A** (corresponds to a correction in an earlier release)* ***B** (addition of feature),* ***C** (functional modification of feature)* ***D** (editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*	

Reason for change: ⌘	This CR is based on 25.133 CR585 (R4-030524, RP-030210). The Îor/Ioc is corrected in order to make sure that T1 can correctly implement the RRC Re-establishment delay test case.
Summary of change: ⌘	The Îor/Ioc value is corrected for T2. Now the Îor/Ioc remains constant for Cell2 although Cell1 disappears during T2.
Consequences if not approved: ⌘	25.101 and 34.121 are inconsistent. T1 may not be able to implement the test case correctly when also test tolerances caused by test equipment uncertainties are applied. Furthermore, this may cause a terminal fulfilling the core requirement to fail the test case.

Clauses affected: ⌘	8.4.1.1			
	Y	**N**		
Other specs affected: ⌘		**X**	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	
Other comments: ⌘	Equivalent CRs in other Releases: T1-030824 (Rel-4) and T1-030825 (Rel-5)			

How to create CRs using this form:

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

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

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

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

8.4 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 ($T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$) 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.

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ 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 $T_{RE\text{-}ESTABLISH}$ to a known cell shall be less than 1.9 s.

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

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

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

where

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

$T_{UE\text{-}RE\text{-}ESTABLISH\_REQ\text{-}KNOWN}$=50ms+$T_{search}$ + T_{SI} + T_{RA},

N_{313}= 20

T_{313}= 0s

T_{search}= 100ms

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

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

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

8.4.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.1.4 Method of test

8.4.1.1.4.1 Initial conditions

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

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

The test parameters are given in table 8.4.1.1 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 parameters for RRC re-establishment delay, Test 1

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

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

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
Cell Frequency	ChNr	1		1	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DCH_Ec/Ior	dB	-17	-Infinity	Not applicable	
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	2,39	-Infinity	4,39	0,02
I_{oc}	dBm/ 3.84 MHz	-70			
CPICH_Ec/Io	dB	-15	-Infinity	-13	
Propagation Condition		AWGN			

8.4.1.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] 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.

3GPP TSG-T1 Meeting #20 **_Tdoc ⌘T1-030863_**
Munich, Germany, 28 July-1 August, 2003

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**268**	⌘ **rev**	**-**	⌘	Current version:	**4.0.0**	⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction to RRC Re-establishment delay test case (Rel-4)
Source:	⌘	T1
Work item code:	⌘	TEI — ***Date:*** ⌘ 29/07/2003
Category:	⌘	**A** — ***Release:*** ⌘ Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	This CR is based on 25.133 CR586 (R4-030525, RP-030210). The Îor/Ioc is corrected in order to make sure that T1 can correctly implement the RRC Re-establishment delay test case.
Summary of change:	⌘	The Îor/Ioc value is corrected for T2. Now the Îor/Ioc remains constant for Cell2 although Cell1 disappears during T2.
Consequences if not approved:	⌘	25.101 and 34.121 are inconsistent. T1 may not be able to implement the test case correctly when also test tolerances caused by test equipment uncertainties are applied. Furthermore, this may cause a terminal fulfilling the core requirement to fail the test case.

Clauses affected:	⌘	8.4.1.1				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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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 ($T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$) 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.

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ 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 $T_{RE\text{-}ESTABLISH}$ to a known cell shall be less than 1.9 s.

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

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

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

where

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

$T_{UE\text{-}RE\text{-}ESTABLISH\_REQ\text{-}KNOWN}$=50ms+$T_{search}$ + T_{SI} + T_{RA},

$N_{313}=$ 20

$T_{313}=$ 0s

$T_{search}=$ 100ms

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

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

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

8.4.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.1.4 Method of test

8.4.1.1.4.1 Initial conditions

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

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

The test parameters are given in table 8.4.1.1 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 parameters for RRC re-establishment delay, Test 1

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

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

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
Cell Frequency	ChNr	1		1	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DCH_Ec/Ior	dB	-17	-Infinity	Not applicable	
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	2,39	-Infinity	4,39	0,02
I_{oc}	dBm/ 3.84 MHz	-70			
CPICH_Ec/Io	dB	-15	-Infinity	-13	
Propagation Condition		AWGN			

8.4.1.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] 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.

3GPP TSG-T1 Meeting #20 **Tdoc ⌘T1-030864**
Munich, Germany, 28 July-1 August, 2003

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR 269**	⌘ **rev**	**-**	⌘ Current version:	**5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘ [ ]	ME [X]	Radio Access Network [ ]	Core Network [ ]

Title: ⌘	Correction to RRC Re-establishment delay test case (Rel-5)		
Source: ⌘	T1		
Work item code: ⌘	TEI	***Date:*** ⌘	29/07/2003
Category: ⌘	**A**	***Release:*** ⌘	Rel-5
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change: ⌘	This CR is based on 25.133 CR587 (R4-030526, RP-030210). The Îor/Ioc is corrected in order to make sure that T1 can correctly implement the RRC Re-establishment delay test case.
Summary of change: ⌘	The Îor/Ioc value is corrected for T2. Now the Îor/Ioc remains constant for Cell2 although Cell1 disappears during T2.
Consequences if not approved: ⌘	25.101 and 34.121 are inconsistent. T1 may not be able to implement the test case correctly when also test tolerances caused by test equipment uncertainties are applied. Furthermore, this may cause a terminal fulfilling the core requirement to fail the test case.

Clauses affected: ⌘	8.4.1.1			
	Y	**N**		
Other specs affected: ⌘		**X**	Other core specifications ⌘	
		X	Test specifications	
		X	O&M Specifications	
Other comments: ⌘				

How to create CRs using this form:

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

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

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

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

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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 ($T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$) 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.

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ 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 $T_{RE\text{-}ESTABLISH}$ to a known cell shall be less than 1.9 s.

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

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

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

where

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

$T_{UE\text{-}RE\text{-}ESTABLISH\_REQ\text{-}KNOWN}$=50ms+$T_{search}$ + T_{SI} + T_{RA},

N_{313}= 20

T_{313}= 0s

T_{search}= 100ms

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

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

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

8.4.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.4.1.1.4 Method of test

8.4.1.1.4.1 Initial conditions

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

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

The test parameters are given in table 8.4.1.1 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 parameters for RRC re-establishment delay, Test 1

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

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

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
Cell Frequency	ChNr	1		1	
CPICH_Ec/Ior	dB	-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DCH_Ec/Ior	dB	-17	-Infinity	Not applicable	
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	2,39	-Infinity	4,39	0,02
I_{oc}	dBm/ 3.84 MHz	-70			
CPICH_Ec/Io	dB	-15	-Infinity	-13	
Propagation Condition		AWGN			

8.4.1.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] 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.

3GPP TSG-T1 Meeting #20 **Tdoc ⌘T1-030865**
Munich, Germany, July 28th – August 1st 2003

						CR-Form-v7
CHANGE REQUEST						
⌘	**34.121**	**CR**	**270**	⌘ **rev**	**-** ⌘	Current version: **3.13.0** ⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘ [ ]	ME [X]	Radio Access Network [ ]	Core Network [ ]

Title:	⌘	CR to 34.121 R99; Corretion to SFN-SFN observed time difference type 1		
Source:	⌘	T1		
Work item code:	⌘		***Date:*** ⌘	16/06/2003
Category:	⌘	**F**	***Release:*** ⌘	R99
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for 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:	⌘	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				
		Y	**N**			
Other specs affected:	⌘			Other core specifications	⌘	
				Test specifications		
				O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

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

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

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.

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

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

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

Table 8.7.5.1.1

Parameter	Unit	Accuracy [chip]	Conditions
			Io [dBm/3.84 MHz]
SFN-SFN observed time difference type1	chip	± 1	-94...-50

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~~3. The RF parameters for Test 1 are set up according to table 8.7.5.1.2.

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

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

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
S-CCPCH_Ec/Ior~~DPCH_Ec/Ior~~	dB	~~-15~~-12		~~-15~~-12		~~-15~~-12	
OCNS_Ec/Ior	dB	~~-1.11~~-1.29		~~-1.11~~-1.29		~~-1.11~~-1.29	
Îor/Ioc	dB	10.5		10.5		10.5	
Ioc	dBm/ 3.84 MHz	*Io –13.7 dB = Ioc,* Note 1		*Io –13.7 dB = Ioc,* Note 1		*Io –13.7 dB = Ioc,* Note 1	
Io	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: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.							
NOTE2: For example, x= 491520 or 9830399							
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.							

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 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.

3GPP TSG-T1 Meeting #20 **Tdoc ⌘*T1-030866***
Munich, Germany, July 28th – August 1st 2003

CR-Form-v7

CHANGE REQUEST

⌘	**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 ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘ CR to 34.121 Rel-4; Corretion to SFN-SFN observed time difference type 1		
Source:	⌘ T1		
Work item code:	⌘	***Date:*** ⌘	16/06/2003
Category:	⌘ **A**	***Release:*** ⌘	Rel-4
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*	

Reason for 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: ⌘	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			
	Y	**N**		
Other specs affected: ⌘			Other core specifications	⌘
			Test specifications	
			O&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 ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

8.7.5 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.

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

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

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

Table 8.7.5.1.1

Parameter	Unit	Accuracy [chip]	Conditions Io [dBm/3.84 MHz]
SFN-SFN observed time difference type1	chip	± 1	-94...-50

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~~3. The RF parameters for Test 1 are set up according to table 8.7.5.1.2.

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

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

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
S-CCPCH_Ec/Ior~~DPCH_Ec/Ior~~	dB	-12~~-15~~		-12~~-15~~		-12~~-15~~	
OCNS_Ec/Ior	dB	-1.29~~-1.11~~		-1.29~~-1.11~~		-1.29 ~~-1.11~~	
Îor/Ioc	dB	10.5		10.5		10.5	
Ioc	dBm/ 3.84 MHz	*Io –13.7 dB = Ioc,* Note 1		*Io –13.7 dB = Ioc,* Note 1		*Io –13.7 dB = Ioc,* Note 1	
Io	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: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.							
NOTE2: For example, x= 491520 or 9830399							
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.							

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 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.

3GPP TSG-T1 Meeting #20 **_Tdoc ⌘T1-030867_**
Munich, Germany, July 28th – August 1st 2003

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**272**	⌘**rev**	**-**	⌘	Current version:	**5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	CR to 34.121 Rel-5; Corretion to SFN-SFN observed time difference type 1		
Source:	⌘	T1		
Work item code:	⌘		***Date:*** ⌘	16/06/2003
Category:	⌘	**A**	***Release:*** ⌘	Rel-5
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for 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:	⌘	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				
		Y	**N**			
Other specs affected:	⌘			Other core specifications	⌘	
				Test specifications		
				O&M Specifications		
Other comments:	⌘					

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

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

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

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.

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

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

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

Table 8.7.5.1.1

Parameter	Unit	Accuracy [chip]	Conditions Io [dBm/3.84 MHz]
SFN-SFN observed time difference type1	chip	± 1	-94...-50

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~~3. The RF parameters for Test 1 are set up according to table 8.7.5.1.2.

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

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

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
S-CCPCH_Ec/Ior~~DPCH_Ec/Ior~~	dB	-12~~-15~~		-12~~-15~~		-12~~-15~~	
OCNS_Ec/Ior	dB	-1.29~~-1.11~~		-1.29~~-1.11~~		-1.29 ~~-1.11~~	
Îor/Ioc	dB	10.5		10.5		10.5	
Ioc	dBm/ 3.84 MHz	*Io –13.7 dB = Ioc,* Note 1		*Io –13.7 dB = Ioc,* Note 1		*Io –13.7 dB = Ioc,* Note 1	
Io	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: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.							
NOTE2: For example, x= 491520 or 9830399							
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.							

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 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.

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

Tdoc ⌘T1-030870

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR 273**	⌘ **rev**	**-**	⌘ Current version:	**3.13.0** ⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	CR to 34.121 Rel-99; Correction to CRC bit for reference measurement channel using RLc-TM for DTCH, transport channel parameters
Source:	⌘	T1
Work item code:	⌘	***Date:*** ⌘ 16/06/2003
Category:	⌘	**F** ***Release:*** ⌘ Rel-99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	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:	⌘	The size of CRC was changed to 12 bits.
Consequences if not approved:	⌘	The test case would be incorrect.

Clauses affected:	⌘	C.4.2				
		Y	**N**			
Other specs affected:	⌘			Other core specifications	⌘	
				Test specifications		
				O&M Specifications		
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.

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.

Table C.4.2.1: DL reference measurement channel physical parameters for BTFD

Parameter	Rate 1	Rate 2	Rate 3	Unit
Information bit rate	12,2	7,95	1,95	kbps
DPCH	30			ksps
Slot Format #i	8			-
TFCI	Off			-
Power offsets PO1, PO2 and PO3	0			dB
DTX position	Fixed			-

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

Higher Layer	RAB/Signalling RB		SRB
RLC	Logical channel type		DCCH
	RLC mode		UM/AM
	Payload sizes, bit		88/80
	Max data rate, bps		2200/2000
	PDU header, bit		8/16
	TrD PDU header, bit		N/A
MAC	MAC header, bit		4
	MAC multiplexing		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 type		Convolution Coding
	Coding Rate		1/3
	CRC, bit		12
	Max number of bits/TTI after channel coding		360
	Uplink: Max number of bits/radio frame before rate matching		90
	RM attribute		256

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

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

	PDU header, bit		N/A
	TrD PDU header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	Transport Channel Identity		1
	TB sizes, bit		244, 204, 159, 148, 134, 118, 103, 95, 39,0
	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 Rate		1/3
	CRC, bit		~~0~~12
	RM attribute		256

3GPP TSG T WG1 Meeting #20 **Tdoc ⌘ T1-030873**
Munich, Germany, 28 July-1 August 2003

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CHANGE REQUEST

⌘	**34.121**	**CR**	**274**	⌘ **rev**	**-**	⌘	Current version:	**3.13.0**	⌘

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Proposed change affects: UICC apps⌘ [ ] ME [✓] Radio Access Network [✓] Core Network [ ]

Title:	⌘	Introduction of Test Tolerances to Cell Reselection in CELL_FACH tests 8.3.5.1 & 8.3.5.2
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	25/07/2003
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for 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 condtions for test b) Revision of table 8.3.5.2.5 giving correct RF condtions 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			
		Y	**N**		
Other specs affected:	⌘		✓	Other core specifications	⌘
		✓		Test specifications	
			✓	O&M Specifications	
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.

8.3.5 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

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

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

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

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

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

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

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	½
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		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
S-CCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
OCNS_Ec/Ior	dB	-1.295		-1.295		-1.295		-1.295		-1.295		-1.295	
$\hat{I}_{or}/I_{oc}$	dB	7.3	10.27	10.27	7.3	0.27		0.27		0.27		0.27	
$\hat{I}_{or}$ *(Note 1)*	dBm	-62.73	-59.73	-59.73	-62.73	-69.73		-69.73		-69.73		-69.73	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-16	-13	-13	-16	-23		-23		-23		-23	
Propagation Condition		AWGN											
Cell_selection_and_reselection_quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_MAX_RACH	dBm	21		21		21		21		21		21	
Qoffset $2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
IE "FACH Measurement occasion info"		not sent		not sent		not sent		not sent		not sent		not sent	

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.~~4~~5.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

4) After 15 seconds from completion of step 3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.1.~~4~~5.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.1.~~4~~5.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 1.7 s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until 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

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	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 Number		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.5		-10.5		-10.5		-10.5	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.5		-15.5		-15.5		-15.5	
S-CCPCH_Ec/Ior	dB	-11.4		-11.4		-12.5		-12.5		-12.5		-12.5	
OCNS_Ec/Ior	dB	-1.52		-1.52		-1.13		-1.13		-1.13		-1.13	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	7.0	10.4	10.4	7.0	0.3		0.3		0.3		0.3	
$\hat{I}_{or}$	dBm	-63.0	-59.6	-59.6	-63.0	-69.7		-69.7		-69.7		-69.7	
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io *Note 1*	dB	-15.7	-12.3	-12.3	-15.7	-23.5		-23.5		-23.5		-23.5	

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

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

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

8.3.5.2 Two frequencies present in the neighbour list

8.3.5.2.1 Definition and applicability

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

The requirements and this test apply to the FDD UE.

8.3.5.2.2 Minimum requirements

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

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

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

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

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

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

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

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

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

Parameter	FACH
Transport Channel Number	1
Transport Block Size	240
Transport Block Set Size	240
Transmission Time Interval	10 ms
Type of Error Protection	Convolution Coding
Coding Rate	½
Rate Matching attribute	256
Size of CRC	16
Position of TrCH in radio frame	Fixed

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

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 Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10		-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15		-15		-15		-15	
S-CCPCH_Ec/Ior	dB	-12		-12		-12		-12		-12		-12	
OCNS_Ec/Ior	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
$\hat{I}_{or}$ (Note 1)	dBm	-71.85	-67.75	-67.75	-71.85	-76.85	-74.75	-76.85	-74.75	-74.75	-76.85	-74.75	-76.85
I_{oc}	dBm/3.84 MHz	-70											
CPICH_Ec/Io	dB	-15	-13	-13	-15	-20		-20		-20		-20	
Propagation Condition		AWGN											
Cell_selection_ and_reselection_ quality_measure		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0		CPICH E_c/N_0	
Qqualmin	dB	-20		-20		-20		-20		-20		-20	
Qrxlevmin	dBm	-115		-115		-115		-115		-115		-115	
UE_TXPWR_ MAX_RACH	dBm	21		21		21		21		21		21	
$Qoffset2_{s,n}$	dB	C1, C2: 0 C1, C3: 0 C1, C4: 0 C1, C5: 0 C1, C6: 0		C2, C1: 0 C2, C3: 0 C2, C4: 0 C2, C5: 0 C2, C6: 0		C3, C1: 0 C3, C2: 0 C3, C4: 0 C3, C5: 0 C3, C6: 0		C4, C1: 0 C4, C2: 0 C4, C3: 0 C4, C5: 0 C4, C6: 0		C5, C1: 0 C5, C2: 0 C5, C3: 0 C5, C4: 0 C5, C6: 0		C6, C1: 0 C6, C2: 0 C6, C3: 0 C6, C4: 0 C6, C5: 0	
Qhyst2	dB	0		0		0		0		0		0	
Treselection	s	0		0		0		0		0		0	
Sintrasearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
Sintersearch	dB	not sent		not sent		not sent		not sent		not sent		not sent	
IE "FACH Measurement occasion info"		sent		sent		sent		sent		Sent		sent	
FACH Measurement occasion cycle length coefficient		3		3		3		3		3		3	
Inter-frequency FDD measurement indicator		TRUE		TRUE		TRUE		TRUE		TRUE		TRUE	
Inter-frequency TDD measurement indicator		FALSE		FALSE		FALSE		FALSE		FALSE		FALSE	

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

8.3.5.2.4.2 Procedure

1) The RF parameters for cell 1 are set up according to T1 in table 8.3.5.2.5.

2) The UE is switched on.

3) An RRC connection is set up according to the signalling sequence in the generic set-up procedure specified in TS 34.108 [3] subclause 7.3.3 to place the UE in the CELL_FACH state on Cell 2 and the SS waits for this process to complete.

4) After 15 seconds from completion of step3 or the beginning of T1, the parameters are changed to those defined for T2 in table 8.3.5.2.5.

5) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then the success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step 7.

6) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 7.

7) After total of 15 s from the beginning of T2, the parameters are changed to those defined for T1 in table 8.3.5.2.5.

8) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 2.0 s, then a success is recorded and the procedure moves to step 10.

9) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15 s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step 1. Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step 10.

10) Steps 4 to 10 are repeated until 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.

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

Parameter	Unit	Cell 1		Cell 2		Cell 3		Cell 4		Cell 5		Cell 6	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 2		Channel 1		Channel 1		Channel 2		Channel 2	
CPICH_Ec/Ior	dB	-9.4		-9.4		-10.7		-10.7		-10.7		-10.7	
PCCPCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
SCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
PICH_Ec/Ior	dB	-14.4		-14.4		-15.7		-15.7		-15.7		-15.7	
S-CCPCH_Ec/Ior	dB	-11.4		-11.4		-12.7		-12.7		-12.7		-12.7	
OCNS_Ec/Ior	dB	-1.52		-1.52		-1.08		-1.08		-1.08		-1.08	
$\hat{I}_{or}/I_{oc}$ *Note 1*	dB	-1.80	+4.64	+4.64	-1.80	-6.80	-3.16	-6.80	-3.16	-3.16	-6.80	-3.16	-6.80
$\hat{I}_{or}$	dBm	-71.8	-67.0	-67.0	-71.8	-76.8	-74.8	-76.8	-74.8	-74.8	-76.8	-74.8	-76.8
I_{oc}	dBm/3.84 MHz	-70.0	-71.6	-71.6	-70.0	-70.0	-71.6	-70.0	-71.6	-71.6	-70.0	-71.6	-70.0
CPICH_Ec/Io *Note 1*	dB	-14.4	-11.6	-11.6	-14.4	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7	-20.7

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

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

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

Annex F (normative): General test conditions and declarations

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

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

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

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

F.1 Acceptable uncertainty of Test System

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

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

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

F.1.5 Requirements for support of RRM

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

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5 Cell Re-selection in CELL_FACH		
8.3.5.1 One frequency present in the neighbour list	~~Same as 8.2.2.1~~During T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} ±1.0 dB During T1: I_{or} (2) ±0.7 dB I_{or} (1, 3, 4, 5, 6) relative to I_{or} (2) ±0.3 dB During T2: I_{or} (1) ±0.7 dB I_{or} (2, 3, 4, 5, 6) relative to I_{or} (1) ±0.3 dB	~~Same as 8.2.2.1~~
	Assumptions: a) The contributing uncertainties for Ior(n), channel power ratio, and Ioc are derived according to ETR 273-1-2 [16], with a coverage factor of k=2. b) Within each cell, the uncertainty for Ior(n), and channel power ratio are uncorrelated to each other. c) The relative uncertainties for Ior(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 Ioc and Ior(n) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). f) The absolute uncertainty of Ior(2) at T1 and the relative uncertainty of Ior(1, 3, 4, 5, 6), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(1) at T2 and the relative uncertainty of Ior(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].	

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.3.5.2 Two frequencies present in the neighbour list	~~Same as 8.2.2.2~~Channel 1 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (1) ±1.0 dB Channel 1 during T1: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 1 during T2: I_{or} (1) ±0.7 dB I_{or} (3, 4) relative to I_{or} (1) ±0.3 dB Channel 2 during T1 and T2: $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB I_{oc} (2) ±1.0 dB Channel 2 during T1: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB Channel 2 during T2: I_{or} (2) ±0.7 dB I_{or} (5, 6) relative to I_{or} (2) ±0.3 dB	~~Same as 8.2.2.2~~
	Assumptions: a) to e): Same as for the one-frequency test 8.3.5.1. f) The absolute uncertainty of Ior(1) and the relative uncertainty of Ior(3, 4), are uncorrelated to each other. Similarly, the absolute uncertainty of Ior(2) and the relative uncertainty of Ior(5, 6), are uncorrelated to each other. g) The absolute uncertainties for Ior(1) and Ior(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). h) The absolute uncertainties for Ioc(1) and Ioc(2) may have any amount of positive correlation from zero (uncorrelated) to one (fully correlated). An explanation of correlation between uncertainties, and of the rationale behind the assumptions, is to 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

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

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

F.4 Derivation of Test Requirements (This clause is informative)

The Test Requirements in the present document have been calculated by relaxing the Minimum Requirements of the core specification using the Test Tolerances defined in clause F.2. When the Test Tolerance is zero, the Test Requirement will be the same as the Minimum Requirement. When the Test Tolerance is non-zero, the Test Requirements will differ from the Minimum Requirements, and the formula used for this relaxation is given in table F.4.

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

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.5 Cell Re-selection in CELL_FACH			
8.3.5.1 One frequency present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis was performed using a spreadsheet, to be recorded in a TR [FFS].		
	During T1 and T2: Cells 1 and 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3, 4, 5, 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Ior(3, 4, 5, 6) = -69.73 dBm $\frac{CPICH\_E_c}{I_{or}}$ ~~= -10 dB~~ $\cancel{I_{oc}}$ ~~= - 70 dBm~~ ~~Ior/Ioc = 7.3 dB~~ ~~Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2~~	During T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB -0.50 dB +0.03 dB for Ior(3, 4, 5, 6) ~~0.1 dB for~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~0.3 dB for Ior/Ioc~~	During T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ior(3, 4, 5, 6) + TT ~~Formulas:~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~= ratio - TT~~ ~~Ior/Ioc = ratio - TT~~ $\cancel{I_{oc}}$ ~~unchanged~~ ~~Ior/Ioc = 7 dB~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~-10.1 dB:~~
	During T1: Ior(1) = -62.73 dBm Ior(2) = -59.73 dBm $\frac{CPICH\_E_c}{I_{or}}$ ~~= -10 dB~~ $\cancel{I_{oc}}$ ~~= - 70 dBm~~ ~~Ior/Ioc = 10.27 dB~~ ~~Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1~~	During T1: -0.27 dB for Ior(1) +0.13 dB for Ior(2) ~~0.1 dB for~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~0.3 dB for Ior/Ioc~~	During T1: Ior(1) + TT Ior(2) + TT ~~Formulas:~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~= ratio + TT~~ ~~Ior/Ioc = ratio + TT~~ ~~Ioc unchanged~~ ~~Ior/Ioc = 10.57 dB~~ $\frac{CPICH\_E_c}{I_{or}}$ ~~-9.9 dB:~~
	During T2: Ior(1) = -59.73 dBm Ior(2) = -62.73 dBm	During T2: +0.13 dB for Ior(1) -0.27 dB for Ior(2)	During T2: Ior(1) + TT Ior(2) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.3.5.2 Two frequencies present in the neighbour list	Because the relationships between the Test system uncertainties and the Test Tolerances are complex, it is not possible to give a simple derivation of the Test Requirement in this document. The analysis was performed using a spreadsheet, to be recorded in a TR [FFS].		
	Channel 1 during T1 and T2: Cell 1: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 3 and 4: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB ~~$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB~~ ~~I_{oc} = - 70 dBm~~ ~~Ior/Ioc = -3.4 dB~~ ~~Note: Parameters are valid for cell 1 at time T1 and cell 2 at time T2~~	Channel 1 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB ~~0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$~~ ~~0.3 dB for Ior/Ioc~~	Channel 1 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT ~~Formulas:~~ ~~$\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT~~ ~~Ior/Ioc = ratio - TT~~ ~~Ioc unchanged~~ ~~Ioc ratio unchanged~~ ~~Ior/Ioc = -3.7 dB~~ ~~$\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:~~
	Channel 1 during T1: Ior(1) = -71.85 dBm Ior(3, 4) = -76.85 dBm Ioc(1) = -70.00 dBm ~~$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB~~ ~~I_{oc} = - 70 dBm~~ ~~Ior/Ioc = 2.2 dB~~ ~~Note: Parameters are valid for cell 1 at time T2 and cell 2 at time T1~~	Channel 1 during T1: +0.05 dB for Ior(1) +0.05 dB for Ior(3,4) 0.00 dB for Ioc(1) ~~0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$~~ ~~0.3 dB for Ior/Ioc~~	Channel 1 during T1: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT ~~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 dB:~~
	Channel 1 during T2: Ior(1) = -67.75 dBm Ior(3, 4) = -74.75 dBm Ioc(1) = -70.00 dBm	Channel 1 during T2: +0.75 dB for Ior(1) -0.05 dB for Ior(3, 4) -1.60 dB for Ioc(1)	Channel 1 during T2: Ior(1) + TT Ior(3, 4) + TT Ioc(1) + TT

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	Channel 2 during T1 and T2: Cell 2: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB Cells 5 and 6: CPICH_Ec/Ior = -10 dB PCCPCH_Ec/Ior = -12 dB SCH_Ec/Ior = -12 dB PICH_Ec/Ior = -15 dB S-CCPCH_Ec/Ior = -12 dB	Channel 2 during T1 and T2: +0.60 dB +0.60 dB +0.60 dB +0.60 dB +0.60 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB -0.70 dB	Channel 2 during T1 and T2: Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT Ec/Ior ratio + TT
	Channel 2 during T1: Ior(2) = -67.75 dBm Ior(5, 6) = -74.75 dBm Ioc(2) = -70.00 dBm	Channel 2 during T1: +0.75 dB for Ior(2) -0.05 dB for Ior(5, 6) -1.60 dB for Ioc(2)	Channel 2 during T1: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT
	Channel 2 during T2: Ior(2) = -71.85 dBm Ior(5, 6) = -76.85 dBm Ioc(2) = -70.00 dBm	Channel 2 during T2: +0.05 dB for Ior(2) +0.05 dB for Ior(5,6) 0.00 dB for Ioc(2)	Channel 2 during T2: Ior(2) + TT Ior(5, 6) + TT Ioc(2) + TT

3GPP TSG-T1 Meeting #20 **Tdoc ⌘T1-031103**
Munich, Germany, July 28th – August 1st 2003

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	275	⌘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 ⌘ symbols.*

Proposed change affects:	UICC apps⌘	[ ]	ME	[X]	Radio Access Network	[ ]	Core Network	[ ]

Title:	⌘	CR to 34.121 Rel-4; Corretion to Inter-system Handover from UTRAN FDD to GSM
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	16/06/2003
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Corrected errors in the Inter-system Handover from UTRAN FDD t GSM test case
Summary of change:	⌘	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				
		Y	**N**			
Other specs affected:	⌘			Other core specifications	⌘	
				Test specifications		
				O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

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

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

8.3.4 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 HANDOVER FROM UTRAN COMMAND is received	90
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	190

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 HANDOVER FROM UTRAN COMMAND is received	40
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	140

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

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

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

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

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

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

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 specifed in table 8.3.4.3.

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

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

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

Parameter	Unit	Cell 1 (UTRA)
		T1, T2, T3
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DCH_Ec/Ior	dB	Note 1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.		

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

Parameter	Unit	Cell 2 (GSM)	
		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 ~~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

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	~~1~~2
-Measurement Command (10.3.7.46)	~~Modify~~Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	~~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 -Integrity check info -Activation time	 0 Not Present "now"
RB information elements -RAB information list -RAB Info	 1 Not present
Other information elements -CHOICE System type -Frequency Band -GSM message -Single GSM message -GSM message List	 GSM GSM/DCS 1800 Band [TBD] GSM HANDOVER COMMAND formatted as BIT STRING(1..512). 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 RATfrequency 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.

3GPP TSG-T1 Meeting #20 **Tdoc ⌘T1-031104**
Munich, Germany, July 28th – August 1st 2003

CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR 276**	⌘ **rev**	**-**	⌘ Current version:	**5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘ CR to 34.121 Rel-5; Corretion to Inter-system Handover from UTRAN FDD to GSM		
Source:	⌘ T1		
Work item code:	⌘	***Date:*** ⌘	16/06/2003
Category:	⌘ **A**	***Release:*** ⌘	Rel-5
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*	

Reason for change: ⌘	Corrected errors in the Inter-system Handover from UTRAN FDD t GSM test case
Summary of change: ⌘	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			
	Y	**N**		
Other specs affected: ⌘			Other core specifications ⌘	
			Test specifications	
			O&M Specifications	
Other comments: ⌘				

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

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

8.3.4 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 HANDOVER FROM UTRAN COMMAND is received	90
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	190

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 HANDOVER FROM UTRAN COMMAND is received	40
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	140

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

8.3.4.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

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

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

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

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

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 specifed in table 8.3.4.3.

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

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

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

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

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

Parameter	Unit	Cell 2 (GSM)	
		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 ~~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

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	~~1~~2
-Measurement Command (10.3.7.46)	~~Modify~~Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH Ec/N0
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	~~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 -Integrity check info -Activation time	 0 Not Present "now"
RB information elements -RAB information list -RAB Info	 1 Not present
Other information elements -CHOICE System type -Frequency Band -GSM message -Single GSM message -GSM message List	 GSM GSM/DCS 1800 Band [TBD] GSM HANDOVER COMMAND formatted as BIT STRING(1..512). 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 RATfrequency 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.

3GPP TSG-T1 Meeting #20 **_Tdoc ⌘T1-031108_**
Munich, Germany, July 28th – August 1st 2003

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	277	⌘ rev	-	⌘	Current version:	3.13.0	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘ [ ]	ME [X]	Radio Access Network [ ]	Core Network [ ]

Title: ⌘	CR to 34.121 R99; Correction to CPICH Ec/Io in correct reporting of neighbours in AWGN propagation condition test case		
Source: ⌘	T1		
Work item code: ⌘		***Date:*** ⌘	16/06/2003
Category: ⌘	**F**	***Release:*** ⌘	R99
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change: ⌘	There is no margin taken into account for this testcase for period T2. The CPICH Ec/Io in Cell 1 period T2 is set to –13 dB and the CPICH Ec/Io 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/Io 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: ⌘	Changed the CPICH Ec/Io 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				
	Y	**N**			
Other specs affected: ⌘			Other core specifications	⌘	
			Test specifications		
			O&M Specifications		
Other comments: ⌘					

How to create CRs using this form:

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

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

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

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

8.6.2 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

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

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

When transmission gaps are scheduled for FDD inter frequency measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.1 and 9.1.2 of 25.133 with measurement period given by

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

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 $\mathrm{X}_{\text{basic measurement FDD inter}}$ 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 $\mathrm{T}_{\text{Measurement\_ Inter.}}$

$\mathrm{X}_{\text{basic measurement FDDinter}} = 6$

$\mathrm{T}_{\text{Measurement\_Period Inter}}$ = 480 ms. The period used for calculating the measurement period $\mathrm{T}_{\text{measurement\_inter}}$ for inter frequency CPICH measurements.

$\mathrm{T}_{\text{Inter:}}$ This is the minimum time that is available for inter frequency measurements , during the period $\mathrm{T}_{\text{Measurement\_Period inter}}$ 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.

$\mathrm{T}_{\text{basic\_identify\_FDD,inter}}$ = 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.

$\mathrm{T}_{\text{basic\_measurement\_FDD inter}}$ = 50 ms. This is the time period used in the equation for defining the measurement period for inter frequency CPICH measurements.

N_{Freq}: Number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $\mathrm{T}_{\text{identify inter}}$ defined in Clause 8.1.2.3.1 of 25.133 When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{identify\_inter}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\_Period\ Inter}$ provided the timing to that cell has not changed more than +/-32 chips while transmission gap has not been available and the L3 filter has not been used.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.1.

8.6.2.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.2.1.4 Method of test

8.6.2.1.4.1 Initial conditions

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

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

The initial test parameters are given in table 8.6.2.1.1

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

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	**T0**	**T0**
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	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/Io	dB	-13	-Inf	-Inf
Propagation Condition	AWGN			

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables 8.6.2.1.2 and 8.6.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

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

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Compressed mode		C.5.2 set 1	As specified in C.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	Measurement control information is sent before the compressed mode pattern starts.
T1	S	10	
T2	S	5	

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

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-17		N/A		N/A	
OCNS		-1.049		–0.941		–0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	5.42~~4.39~~	-Infinity	3.92~~2.39~~	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	dB	-13	-13	-Infinity	-14.5~~-15~~	-14	-14
Propagation Condition		AWGN					

3GPP TSG-T1 Meeting #20 *Tdoc ⌘T1-031109*
Munich, Germany, July 28th – August 1st 2003

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR 278**	⌘**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 ⌘ symbols.*

Proposed change affects:	UICC apps⌘ [ ]	ME [X]	Radio Access Network [ ]	Core Network [ ]

Title: ⌘	CR to 34.121 Rel-4; Correction to CPICH Ec/Io in correct reporting of neighbours in AWGN propagation condition test case		
Source: ⌘	T1		
Work item code: ⌘		***Date:*** ⌘	16/06/2003
Category: ⌘	**A** *Use one of the following categories:* ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	***Release:*** ⌘	Rel-4 *Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change: ⌘	There is no margin taken into account for this testcase for period T2. The CPICH Ec/Io in Cell 1 period T2 is set to –13 dB and the CPICH Ec/Io 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/Io 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: ⌘	Changed the CPICH Ec/Io 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				
	Y	**N**			
Other specs affected: ⌘			Other core specifications	⌘	
			Test specifications		
			O&M Specifications		
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

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

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

When transmission gaps are scheduled for FDD inter frequency measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.1 and 9.1.2 of 25.133 with measurement period given by

$$\mathrm{T}_{\mathrm{measurement\ \ inter}} = Max\left\{\mathrm{T}_{\mathrm{Measurement\_Period\ Inter}}, \mathrm{T}_{\mathrm{basic\ measurement\ FDD\ inter}} \cdot \frac{\mathrm{T}_{\mathrm{Measurement\_Period\ Inter}}}{\mathrm{T}_{\mathrm{Inter}}} \cdot N_{Freq}\right\} ms$$

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 $\mathrm{X}_{\mathrm{basic\ measurement\ FDD\ inter}}$ 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 $\mathrm{T}_{\mathrm{Measurement\_\ Inter.}}$

$\mathrm{X}_{\mathrm{basic\ measurement\ FDDinter}} = 6$

$\mathrm{T}_{\mathrm{Measurement\_Period\ Inter}}$ = 480 ms. The period used for calculating the measurement period $\mathrm{T}_{\mathrm{measurement\_inter}}$ for inter frequency CPICH measurements.

$\mathrm{T}_{\mathrm{Inter:}}$ This is the minimum time that is available for inter frequency measurements , during the period $\mathrm{T}_{\mathrm{Measurement\_Period\ inter}}$ 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.

$\mathrm{T}_{\mathrm{basic\_identify\_FDD,inter}}$ = 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.

$\mathrm{T}_{\mathrm{basic\_measurement\_FDD\ inter}}$ = 50 ms. This is the time period used in the equation for defining the measurement period for inter frequency CPICH measurements.

$\mathrm{N}_{\mathrm{Freq}}$: Number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $\mathrm{T}_{\mathrm{identify\ inter}}$ defined in Clause 8.1.2.3.1 of 25.133 When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{identify\_inter}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\_Period\ Inter}$ provided the timing to that cell has not changed more than +/-32 chips while transmission gap has not been available and the L3 filter has not been used.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.1.

8.6.2.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.2.1.4 Method of test

8.6.2.1.4.1 Initial conditions

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

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

The initial test parameters are given in table 8.6.2.1.1

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

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	T0	T0
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	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/Io	dB	-13	-Inf	-Inf
Propagation Condition	AWGN			

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables 8.6.2.1.2 and 8.6.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

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

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Compressed mode		C.5.2 set 1	As specified in C.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	Measurement control information is sent before the compressed mode pattern starts.
T1	S	10	
T2	S	5	

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

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-17		N/A		N/A	
OCNS		-1.049		–0.941		–0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	5.42~~4.39~~	-Infinity	3.92~~2.39~~	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	dB	-13	-13	-Infinity	-14.5~~-15~~	-14	-14
Propagation Condition		AWGN					

3GPP TSG-T1 Meeting #20 | ***Tdoc ⌘T1-031110***
Munich, Germany, July 28th – August 1st 2003

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**279**	⌘**rev**	**-**	⌘	Current version:	**5.0.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	CR to 34.121 Rel-5; Correction to CPICH Ec/Io in correct reporting of neighbours in AWGN propagation condition test case
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	16/06/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	There is no margin taken into account for this testcase for period T2. The CPICH Ec/Io in Cell 1 period T2 is set to –13 dB and the CPICH Ec/Io 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/Io 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:	⌘	Changed the CPICH Ec/Io 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			
		Y	**N**		
Other specs affected:	⌘			Other core specifications	⌘
				Test specifications	
				O&M Specifications	
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

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

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

When transmission gaps are scheduled for FDD inter frequency measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.1 and 9.1.2 of 25.133 with measurement period given by

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

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 $T_{\text{Measurement\_ Inter.}}$

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

$T_{\text{Measurement\_Period Inter}}$ = 480 ms. The period used for calculating the measurement period $T_{\text{measurement\_inter}}$ for inter frequency CPICH measurements.

$T_{\text{Inter:}}$ This is the minimum time that is available for inter frequency measurements , during the period $T_{\text{Measurement\_Period inter}}$ 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.

$T_{\text{basic\_identify\_FDD,inter}}$ = 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 ms. This is the time period used in the equation for defining the measurement period for inter frequency CPICH measurements.

N_{Freq}: Number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify inter}}$ defined in Clause 8.1.2.3.1 of 25.133 When L3 filtering is used an additional delay can be expected.

If a cell has been detectable at least for the time period $T_{identify\_inter}$ and then enters or leaves the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\_Period\ Inter}$ provided the timing to that cell has not changed more than +/-32 chips while transmission gap has not been available and the L3 filter has not been used.

The normative reference for these requirements is TS 25.133 [2] clauses 8.1.2.3 and A.8.2.1.

8.6.2.1.3 Test purpose

To verify that the UE meets the minimum requirements.

8.6.2.1.4 Method of test

8.6.2.1.4.1 Initial conditions

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

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

The initial test parameters are given in table 8.6.2.1.1

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

Parameter	Unit	Cell 1	Cell 2	Cell3
		T0	**T0**	**T0**
CPICH_Ec/Ior	dB	-10	-10	-10
PCCPCH_Ec/Ior	dB	-12	-12	-12
SCH_Ec/Ior	dB	-12	-12	-12
PICH_Ec/Ior	dB	-15	-15	-15
DPCH_Ec/Ior	dB	-17	N/A	N/A
OCNS_Ec/Ior	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/Io	dB	-13	-Inf	-Inf
Propagation Condition	AWGN			

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables 8.6.2.1.2 and 8.6.2.1.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

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

Parameter	Unit	Value	Comment
DCH parameters		DL and UL Reference Measurement Channel 12.2 kbps	As specified in C.3.1 and C.2.1
Power Control		On	
Compressed mode		C.5.2 set 1	As specified in C.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	Measurement control information is sent before the compressed mode pattern starts.
T1	S	10	
T2	S	5	

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

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-17		N/A		N/A	
OCNS		-1.049		–0.941		–0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	5.42~~4.39~~	-Infinity	3.92~~2.39~~	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	dB	-13	-13	-Infinity	-14.5~~-15~~	-14	-14
Propagation Condition		AWGN					

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CHANGE REQUEST

⌘	**34.121**	**CR**	**280**	⌘ **rev**	**-**	⌘	Current version:	**3.13.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘		ME	X	Radio Access Network		Core Network	

Title:	⌘	Test Requirements for RRM CPICH Ec/Io Intra Frequency Measurement
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	14/07/2003
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Test Requirements are missing.
Summary of change:	⌘	Test Requirements are included
Consequences if not approved:	⌘	Test could fail "good UEs" because Test Requirements differ from the Minimum Requirements

Clauses affected:	⌘	8.7.2.1			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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

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

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

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

8.7.2 CPICH Ec/Io

8.7.2.1 Intra frequency measurements accuracy

8.7.2.1.1 Absolute accuracy requirement

8.7.2.1.1.1 Definition and applicability

The absolute accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the actual CPICH_Ec/Io power ratio from same cell.

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

8.7.2.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.1.1 are valid under the following conditions:

- CPICH_RSCP1$|_{dBm}$ ≥ -114 dBm.
- $\left.\frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \le 20dB$.

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

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	±1,5 for -14 ≤ CPICH Ec/Io ±2 for -16 ≤ CPICH Ec/Io < -14 ±3 for -20 ≤ CPICH Ec/Io < -16	±3	-94...-50

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/Io Intra frequency parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-6	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94	.2.56	-0.94
Ioc	dBm/ 3.84 MHz	-56.98		-89.07		-94.98	
Îor/Ioc	dB	3.0	3.0	-2.9	-2.9	-9.0	-9.0
CPICH Ec/Io, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	dBm/3.84 MHz	-50		-86		-94	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io 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) 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.

~~1~~2) SS shall transmit MEASUREMENT CONTROL message.

~~2~~3) UE shall transmit periodically MEASUREMENT REPORT messages.

~~3~~4) SS shall check CPICH_Ec/No value in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1, which is compared to the actual CPICH Ec/Io power ratio from the same cell for each MEASUREMENT REPORT message.

~~4~~5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.~~2~~5 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step ~~3~~4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.~~2~~5 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step ~~3~~4) above is repeated.

~~5~~6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~6~~7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Table 8.7.2.1.1.3: CPICH Ec/Io measurement report mapping

Reported value	Measured quantity value	Unit
CPICH_Ec/No _00	CPICH Ec/Io < -24	dB
CPICH_Ec/No _01	-24 ≤ CPICH Ec/Io < -23.5	dB
CPICH_Ec/No _02	-23.5 ≤ CPICH Ec/Io < -23	dB
…	…	…
CPICH_Ec/No _47	-1 ≤ CPICH Ec/Io < -0.5	dB
CPICH_Ec/No _48	-0.5 ≤ CPICH Ec/Io < 0	dB
CPICH_Ec/No _49	0 ≤ CPICH Ec/Io	dB

Specific Message Contents

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

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

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Intra-frequency measurement - Intra-frequency measurement objects list -Intra-frequency measurement quantity -Filter coefficient -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity -Reporting quantities for active set cells -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for monitored set cells -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for detected set cells -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -CHOICE *report criteria* -Amount of reporting -Reporting interval	 1 Modify Acknowledged mode RLC Periodical reporting Not Present Intra-frequency measurement Not Present 0 FDD CPICH RSCP No report TRUE TRUE FDD TRUE TRUE TRUE No report FALSE FALSE FDD FALSE FALSE FALSE Not Present Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Periodical reporting criteria Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.2.1.1.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in subclause 8.7.2.1.1.2 as shown in table 8.7.2.1.1.4.

Table 8.7.2.1.1.4: CPICH_Ec/Io Intra frequency absolute accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	-3.1~~2.7~~…1.9~~1.5~~ for -14 ≤ CPICH Ec/Io –3.~~2~~6…2.4 for -16 ≤ CPICH Ec/Io < -14 –4.~~2~~6…3.4 for -20 ≤ CPICH Ec/Io < -16	-4.~~2~~6…3.4	-94...-87
		± 1.95 for -14 ≤ CPICH Ec/Io ± 2.4 for -16 ≤ CPICH Ec/Io < -14 ± 3.4 for -20 ≤ CPICH Ec/Io < -16	± 3.4	-87...-50

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/Io Intra frequency tests parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.7		-9.8		-9.9	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-6	-
OCNS_Ec/Ior	dB	-1.15	-0.98	-1.13	-0.97	2.57	-0.95
Ioc	dBm/ 3.84 MHz	-58.5		-89.07		-93.98	
Îor/Ioc	dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7
CPICH Ec/Io, Note 1	dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6
Io, Note 1	dBm	-51.3		-85.85		-92.9	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io 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:

- $CPICH\_RSCP1,2|_{dBm} \geq -114$ dBm.

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

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

Table 8.7.2.1.2.1: CPICH_Ec/Io Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	±1,5 for -14 ≤ CPICH Ec/Io ±2 for -16 ≤ CPICH Ec/Io < -14 ±3 for -20 ≤ CPICH Ec/Io < -16	±3	-94...-50

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.

~~1~~2) SS shall transmit MEASUREMENT CONTROL message.

~~2~~3) UE shall transmit periodically MEASUREMENT REPORT messages.

~~3~~4) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio value measured from Cell 1 is compared to CPICH_Ec/Io power ratio value measured from Cell 2 for each MEASUREMENT REPORT message.

~~4~~5) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

~~5~~6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.~~2~~3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~3~~4) and ~~4~~5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.~~2~~3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for

additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~3~~4) and ~~4~~5) above are repeated.

~~6~~7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~7~~8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.2.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.2.1.2.5 Test requirements

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

Table 8.7.2.1.2.2: CPICH_Ec/Io Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
CPICH_Ec/Io	dB	±2.3 for -14 ≤ CPICH Ec/Io ±2.8 for -16 ≤ CPICH Ec/Io < -14 ±3.8 for -20 ≤ CPICH Ec/Io < -16	±3.8	-94...-50

Table 8.7.2.1.2.3: CPICH_Ec/Io Intra frequency tests parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.7		-9.8		-9.9	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-6	-
OCNS_Ec/Ior	dB	-1.15	-0.98	-1.13	-0.97	2.57	-0.95
Ioc	dBm/ 3.84 MHz	-58.5		-89.07		-93.98	
Îor/Ioc	dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7
CPICH Ec/Io, Note 1	dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6
Io, Note 1	dBm	-51,3		-85.85		-92.9	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io 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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Munich, Germany, 28 July – 01 August 2003

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CHANGE REQUEST						
⌘	**34.121**	**CR 281**	⌘**rev**	**-** ⌘	Current version:	**4.0.0** ⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Test Requirements for RRM CPICH Ec/Io Intra Frequency Measurement	
Source:	⌘	T1	
Work item code:	⌘		***Date:*** ⌘ 14/07/2003
Category:	⌘	**A**	***Release:*** ⌘ Rel-4
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Test Requirements are missing.
Summary of change:	⌘	Test Requirements are included
Consequences if not approved:	⌘	Test could fail "good UEs" because Test Requirements differ from the Minimum Requirements

Clauses affected:	⌘	8.7.2.1			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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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 CPICH Ec/Io

8.7.2.1 Intra frequency measurements accuracy

8.7.2.1.1 Absolute accuracy requirement

8.7.2.1.1.1 Definition and applicability

The absolute accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the actual CPICH_Ec/Io power ratio from same cell.

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

8.7.2.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.1.1 are valid under the following conditions:

- CPICH_RSCP1$|_{dBm}$ ≥ -114 dBm.
- $\left.\frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$.

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

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	±1,5 for -14 ≤ CPICH Ec/Io ±2 for -16 ≤ CPICH Ec/Io < -14 ±3 for -20 ≤ CPICH Ec/Io < -16	±3	-94...-50

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/Io Intra frequency parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-6	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94	.2.56	-0.94
Ioc	dBm/ 3.84 MHz	-56.98		-89.07		-94.98	
Îor/Ioc	dB	3.0	3.0	-2.9	-2.9	-9.0	-9.0
CPICH Ec/Io, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	dBm/3.84 MHz	-50		-86		-94	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io 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) 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.

~~1~~2) SS shall transmit MEASUREMENT CONTROL message.

~~2~~3) UE shall transmit periodically MEASUREMENT REPORT messages.

~~3~~4) SS shall check CPICH_Ec/No value in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1, which is compared to the actual CPICH Ec/Io power ratio from the same cell for each MEASUREMENT REPORT message.

~~4~~5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.~~2~~5 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step ~~3~~4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.~~2~~5 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step ~~3~~4) above is repeated.

~~5~~6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~6~~7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Table 8.7.2.1.1.3: CPICH Ec/Io measurement report mapping

Reported value	Measured quantity value	Unit
CPICH_Ec/No _00	CPICH Ec/Io < -24	dB
CPICH_Ec/No _01	-24 ≤ CPICH Ec/Io < -23.5	dB
CPICH_Ec/No _02	-23.5 ≤ CPICH Ec/Io < -23	dB
…	…	…
CPICH_Ec/No _47	-1 ≤ CPICH Ec/Io < -0.5	dB
CPICH_Ec/No _48	-0.5 ≤ CPICH Ec/Io < 0	dB
CPICH_Ec/No _49	0 ≤ CPICH Ec/Io	dB

Specific Message Contents

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

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

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present

Measurement Information elements
-Measurement Identity
-Measurement Command
-Measurement Reporting Mode
 - Measurement Report Transfer Mode
 - Periodical Reporting / Event Trigger Reporting Mode
-Additional measurement list
-CHOICE Measurement Type
 -Intra-frequency measurement
  - Intra-frequency measurement objects list
  -Intra-frequency measurement quantity
   -Filter coefficient
   -CHOICE mode
    -Measurement quantity
  -Intra-frequency reporting quantity
   -Reporting quantities for active set cells
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
   -Reporting quantities for monitored set cells
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
   -Reporting quantities for detected set cells
  -Reporting cell status
   -CHOICE reported cell
 	
    -Maximum number of reported cells
  -Measurement validity
  -CHOICE *report criteria*
   -Amount of reporting
   -Reporting interval
	
	1
	Modify
	Acknowledged mode RLC
	Periodical reporting
	Not Present
	Intra-frequency measurement
	
	Not Present
	
	0
	FDD
	CPICH RSCP
	
	No report
	TRUE
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	
	No report
	FALSE
	FALSE
	FDD
	FALSE
	FALSE
	FALSE
	Not Present
	
	Report all active set cells + cells within monitored set on used frequency
	Virtual/active set cells + 2
	Not Present
	Periodical reporting criteria
	Infinity
	250 ms

Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.2.1.1.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in subclause 8.7.2.1.1.2 as shown in table 8.7.2.1.1.4.

Table 8.7.2.1.1.4: CPICH_Ec/Io Intra frequency absolute accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	-3.1~~2.7~~…1.9~~1.5~~ for -14 ≤ CPICH Ec/Io –3.~~2~~6…2.4 for -16 ≤ CPICH Ec/Io < -14 –4.~~2~~6…3.4 for -20 ≤ CPICH Ec/Io < -16	-4.~~2~~6…3.4	-94...-87
		± 1.95 for -14 ≤ CPICH Ec/Io ± 2.4 for -16 ≤ CPICH Ec/Io < -14 ± 3.4 for -20 ≤ CPICH Ec/Io < -16	± 3.4	-87...-50

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/Io Intra frequency tests parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.7		-9.8		-9.9	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-6	-
OCNS_Ec/Ior	dB	-1.15	-0.98	-1.13	-0.97	2.57	-0.95
Ioc	dBm/ 3.84 MHz	-58.5		-89.07		-93.98	
Îor/Ioc	dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7
CPICH Ec/Io, Note 1	dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6
Io, Note 1	dBm	-51.3		-85.85		-92.9	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io 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$|_{dBm}$ ≥ -114 dBm.

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

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

Table 8.7.2.1.2.1: CPICH_Ec/Io Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	±1,5 for -14 ≤ CPICH Ec/Io ±2 for -16 ≤ CPICH Ec/Io < -14 ±3 for -20 ≤ CPICH Ec/Io < -16	±3	-94...-50

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.

~~1~~2) SS shall transmit MEASUREMENT CONTROL message.

~~2~~3) UE shall transmit periodically MEASUREMENT REPORT messages.

~~3~~4) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio value measured from Cell 1 is compared to CPICH_Ec/Io power ratio value measured from Cell 2 for each MEASUREMENT REPORT message.

~~4~~5) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

~~5~~6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.~~2~~3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~3~~4) and ~~4~~5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.~~2~~3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for

additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~3~~4) and ~~4~~5) above are repeated.

~~6~~7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~7~~8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.2.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.2.1.2.5 Test requirements

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

Table 8.7.2.1.2.2: CPICH_Ec/Io Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
CPICH_Ec/Io	dB	±2.3 for -14 ≤ CPICH Ec/Io ±2.8 for -16 ≤ CPICH Ec/Io < -14 ±3.8 for -20 ≤ CPICH Ec/Io < -16	±3.8	-94...-50

Table 8.7.2.1.2.3: CPICH_Ec/Io Intra frequency tests parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.7		-9.8		-9.9	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-6	-
OCNS_Ec/Ior	dB	-1.15	-0.98	-1.13	-0.97	2.57	-0.95
Ioc	dBm/ 3.84 MHz	-58.5		-89.07		-93.98	
Îor/Ioc	dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7
CPICH Ec/Io, Note 1	dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6
Io, Note 1	dBm	-51,3		-85.85		-92.9	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io 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

Tdoc ⌘T1-031184

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	282	⌘ rev	-	⌘	Current version:	5.0.0	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Test Requirements for RRM CPICH Ec/Io Intra Frequency Measurement
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	14/07/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Test Requirements are missing.
Summary of change:	⌘	Test Requirements are included
Consequences if not approved:	⌘	Test could fail "good UEs" because Test Requirements differ from the Minimum Requirements

Clauses affected:	⌘	8.7.2.1

Other specs affected: ⌘

Y	N		
	X	Other core specifications	⌘
	X	Test specifications	
	X	O&M Specifications	

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.

8.7.2 CPICH Ec/Io

8.7.2.1 Intra frequency measurements accuracy

8.7.2.1.1 Absolute accuracy requirement

8.7.2.1.1.1 Definition and applicability

The absolute accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the actual CPICH_Ec/Io power ratio from same cell.

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

8.7.2.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.1.1 are valid under the following conditions:

- CPICH_RSCP1$|_{dBm}$ ≥ -114 dBm.
- $\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \le 20dB$.

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

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	±1,5 for -14 ≤ CPICH Ec/Io ±2 for -16 ≤ CPICH Ec/Io < -14 ±3 for -20 ≤ CPICH Ec/Io < -16	±3	-94...-50

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/Io Intra frequency parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-6	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-1.11	-0.94	.2.56	-0.94
Ioc	dBm/ 3.84 MHz	-56.98		-89.07		-94.98	
Îor/Ioc	dB	3.0	3.0	-2.9	-2.9	-9.0	-9.0
CPICH Ec/Io, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
Io, Note 1	dBm/3.84 MHz	-50		-86		-94	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io 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) 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.

~~1~~2) SS shall transmit MEASUREMENT CONTROL message.

~~2~~3) UE shall transmit periodically MEASUREMENT REPORT messages.

~~3~~4) SS shall check CPICH_Ec/No value in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1, which is compared to the actual CPICH Ec/Io power ratio from the same cell for each MEASUREMENT REPORT message.

~~4~~5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.~~2~~5 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step ~~3~~4) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.~~2~~5 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step ~~3~~4) above is repeated.

~~5~~6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~6~~7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Table 8.7.2.1.1.3: CPICH Ec/Io measurement report mapping

Reported value	Measured quantity value	Unit
CPICH_Ec/No _00	CPICH Ec/Io < -24	dB
CPICH_Ec/No _01	-24 ≤ CPICH Ec/Io < -23.5	dB
CPICH_Ec/No _02	-23.5 ≤ CPICH Ec/Io < -23	dB
…	…	…
CPICH_Ec/No _47	-1 ≤ CPICH Ec/Io < -0.5	dB
CPICH_Ec/No _48	-0.5 ≤ CPICH Ec/Io < 0	dB
CPICH_Ec/No _49	0 ≤ CPICH Ec/Io	dB

Specific Message Contents

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

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

Information Element	Value/Remark
Message Type	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present

Measurement Information elements
-Measurement Identity
-Measurement Command
-Measurement Reporting Mode
 - Measurement Report Transfer Mode
 - Periodical Reporting / Event Trigger Reporting Mode
-Additional measurement list
-CHOICE Measurement Type
 -Intra-frequency measurement
  - Intra-frequency measurement objects list
  -Intra-frequency measurement quantity
   -Filter coefficient
   -CHOICE mode
    -Measurement quantity
  -Intra-frequency reporting quantity
   -Reporting quantities for active set cells
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
   -Reporting quantities for monitored set cells
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
   -Reporting quantities for detected set cells
  -Reporting cell status
   -CHOICE reported cell
    -Maximum number of reported cells
  -Measurement validity
  -CHOICE *report criteria*
   -Amount of reporting
   -Reporting interval
	
	1
	Modify
	Acknowledged mode RLC
	Periodical reporting
	Not Present
	Intra-frequency measurement
	
	Not Present
	
	0
	FDD
	CPICH RSCP
	
	No report
	TRUE
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	
	No report
	FALSE
	FALSE
	FDD
	FALSE
	FALSE
	FALSE
	Not Present
	
	Report all active set cells + cells within monitored set on used frequency
	Virtual/active set cells + 2
	Not Present
	Periodical reporting criteria
	Infinity
	250 ms

Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.2.1.1.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in subclause 8.7.2.1.1.2 as shown in table 8.7.2.1.1.4.

Table 8.7.2.1.1.4: CPICH_Ec/Io Intra frequency absolute accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	-3.1~~2.7~~…1.9~~1.5~~ for -14 ≤ CPICH Ec/Io –3.~~2~~6…2.4 for -16 ≤ CPICH Ec/Io < -14 –4.~~2~~6…3.4 for -20 ≤ CPICH Ec/Io < -16	-4.~~2~~6…3.4	-94...-87
		± 1.95 for -14 ≤ CPICH Ec/Io ± 2.4 for -16 ≤ CPICH Ec/Io < -14 ± 3.4 for -20 ≤ CPICH Ec/Io < -16	± 3.4	-87...-50

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/Io Intra frequency tests parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.7		-9.8		-9.9	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-6	-
OCNS_Ec/Ior	dB	-1.15	-0.98	-1.13	-0.97	2.57	-0.95
Ioc	dBm/ 3.84 MHz	-58.5		-89.07		-93.98	
Îor/Ioc	dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7
CPICH Ec/Io, Note 1	dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6
Io, Note 1	dBm	-51.3		-85.85		-92.9	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io 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:

- $CPICH\_RSCP1,2|_{dBm} \geq -114$ dBm.

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

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

Table 8.7.2.1.2.1: CPICH_Ec/Io Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	±1,5 for -14 ≤ CPICH Ec/Io ±2 for -16 ≤ CPICH Ec/Io < -14 ±3 for -20 ≤ CPICH Ec/Io < -16	±3	-94...-50

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.

~~1~~2) SS shall transmit MEASUREMENT CONTROL message.

~~2~~3) UE shall transmit periodically MEASUREMENT REPORT messages.

~~3~~4) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio value measured from Cell 1 is compared to CPICH_Ec/Io power ratio value measured from Cell 2 for each MEASUREMENT REPORT message.

~~4~~5) The result of step 3) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

~~5~~6) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.~~2~~3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~3~~4) and ~~4~~5) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.~~2~~3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for

additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~3~~4) and ~~4~~5) above are repeated.

~~6~~7) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~7~~8) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.2.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.2.1.2.5 Test requirements

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

Table 8.7.2.1.2.2: CPICH_Ec/Io Intra frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
CPICH_Ec/Io	dB	±2.3 for -14 ≤ CPICH Ec/Io ±2.8 for -16 ≤ CPICH Ec/Io < -14 ±3.8 for -20 ≤ CPICH Ec/Io < -16	±3.8	-94...-50

Table 8.7.2.1.2.3: CPICH_Ec/Io Intra frequency tests parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
CPICH_Ec/Ior	dB	-9.7		-9.8		-9.9	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-15	-	-6	-
OCNS_Ec/Ior	dB	-1.15	-0.98	-1.13	-0.97	2.57	-0.95
Ioc	dBm/ 3.84 MHz	-58.5		-89.07		-93.98	
Îor/Ioc	dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7
CPICH Ec/Io, Note 1	dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6
Io, Note 1	dBm	-51,3		-85.85		-92.9	
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io 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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CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**283**	⌘ **rev**	**-**	⌘	Current version:	**3.13.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Test Requirements for RRM CPICH Ec/Io Inter Frequency Measurement		
Source:	⌘	T1		
Work item code:	⌘		***Date:*** ⌘	14/07/2003
Category:	⌘	F	***Release:*** ⌘	R99
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Test Requirements are missing.
Summary of change:	⌘	Test Requirements are included
Consequences if not approved:	⌘	Test could fail “good UEs” because Test Requirements differ from the Minimum Requirements

Clauses affected:	⌘	8.7.2.2				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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

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$|_{dBm}$ ≥ -114 dBm.
- $\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \leq 20dB$.
- | Channel 1_Io$|_{dBm/3.84\ MHz}$ -Channel 2_Io$|_{dBm/3.84\ MHz}$ | ≤ 20 dB.
- $\left.\frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 20dB$.

Table 8.7.2.2.2.1: CPICH_Ec/Io Inter frequency relative accuracy, minimum requirements

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	±1.5 for -14 ≤ CPICH Ec/Io ±2 for -16 ≤ CPICH Ec/Io < -14 ±3 for -20 ≤ CPICH Ec/Io < -16	±3	-94...-50

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.

Table 8.7.2.2.2.2: CPICH Ec/Io Inter frequency ~~tests~~ parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
Ioc	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
Îor/Ioc	dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/Io, 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	
NOTE 1: CPICH Ec/Io and Io 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 8.7.2.2.2.2.~~

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.

~~1~~2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

~~2~~3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

~~3~~4) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.

~~4~~5) UE shall transmit periodically MEASUREMENT REPORT messages.

~~5~~6) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio measured from Cell 1 is compared to CPICH_Ec/Io power value measured from Cell 2 for each MEASUREMENT REPORT message.

~~6~~7) The result of step ~~5~~6) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

~~7~~8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.~~2~~4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~5~~6) and ~~6~~7) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.~~2~~4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~5~~6) and ~~6~~7) above are repeated.

~~8~~9) After 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~9~~10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

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

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 Not Present Not Present Not Present Not Present Not Present Not Present CELL_DCH 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 - CHOICE *channel requirement*	 Not Present Not Present
Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links -Downlink DPCH info common for all RL -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI -TGPS Status Flag -TGCFN -Transmission gap pattern sequence configuration parameters -TGMP -TGPRC -TGSN -TGL1 -TGL2 -TGD -TGPL1 -TGPL2 -RPP -ITP -CHOICE UL/DL mode -Downlink compressed mode method -Uplink compressed mode method -Downlink frame type -DeltaSIR1 -DeltaSIRafter1 -DeltaSIR2 -DeltaSIRafter2 -N Identify abort -T Reconfirm abort -TX Diversity Mode -SSDT information -Default DPCH Offset Value -Downlink information per radio link list -Downlink information for each radio link -Choice mode -Primary CPICH info -Primary scrambling code	 FDD Not Present Not Present FDD 1 Activate (Current CFN + (256 – TTI/10msec))mod 256 FDD measurement Infinity 4 7 Not Present 0 3 Not Present Mode 0 Mode 0 UL and DL SF/2 SF/2 B 3.0 3.0 Not Present Not Present Not Present Not Present Not Present Not Present Not Present FDD 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 -Integrity check info	 0 Not Present

Measurement Information elements
-Measurement Identity
-Measurement Command
-Measurement Reporting Mode
 - Measurement Report Transfer Mode
 - Periodical Reporting / Event Trigger Reporting Mode
-Additional measurement list
-CHOICE Measurement Type
 -Intra-frequency measurement
  - Intra-freqquency measurement objects list
   -Intra-frequency cell info list
  -Intra-frequency measurement quantity
   -Filter coefficient
   -CHOICE mode
    -Measurement quantity
  -Intra-frequency reporting quantity
   -Reporting quantities for active set cells
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
   -Reporting quantities for monitored set cells
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
   -Reporting quantities for detected set cells
  -Reporting cell status
   -CHOICE reported cell
    -Maximum number of reported cells
  -Measurement validity
  -CHOICE *report criteria*
   -Amount of reporting
   -Reporting interval
	
	1
	Modify
	
	Acknowledged mode RLC
	Periodical reporting
	Not Present
	Intra-frequency measurement
	
	Not Present
	
	0
	FDD
	CPICH RSCP
	
	No report
	TRUE
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	
	No report
	FALSE
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	Not Present
	
	Report all active set cells + cells within monitored set on used frequency
	Virtual/active set cells + 2
	Not Present
	Periodical reporting criteria
	Infinity
	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 -Integrity check info	 0 Not Present

Measurement Information elements
-Measurement Identity
-Measurement Command
-Measurement Reporting Mode
 - Measurement Report Transfer Mode
 - Periodical Reporting / Event Trigger Reporting Mode
-Additional measurement list
-CHOICE Measurement Type
 -Inter-frequency measurement
  -Inter-frequency cell info list
   -CHOICE Inter-frequency cell removal
   -New inter-frequency cells
   -Cell for measurement
  -Inter-frequency measurement quantity
   -CHOICE reporting criteria
    -Filter coefficient
    -CHOICE mode
     -Measurement quantity for frequency quality estimate
  -Inter-frequency reporting quantity
   -UTRA Carrier RSSI
   -Frequency quality estimate
   -Non frequency related cell reporting quantities
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
  -Reporting cell status
   -CHOICE reported cell
 	
    -Maximum number of reported cells
  -Measurement validity
  -Inter-frequency set update
  -CHOICE report criteria
   -Amount of reporting
   -Reporting interval
	
	2
	Setup
	
	Acknowledged mode RLC
	Periodical reporting
	
	Not Present
	Inter-frequency measurement
	
	Not Present
	Cell 2 information is included
	Not Present
	
	Inter-frequency reporting criteria
	0
	FDD
	CPICH RSCP
	
	TRUE
	TRUE
	
	No report
	
	TRUE
	
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	
	Report all active set cells + cells within monitored set on used frequency
	Virtual/active set cells + 2
	Not Present
	Not Present
	Periodical reporting criteria
	Infinity
	500 ms

Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.2.2.2.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.2.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in clause 8.7.2.2.2.2 as shown in table 8.7.2.2.2.3.

Table 8.7.2.2.2.3: CPICH_Ec/Io Inter frequency relative accuracy, test requirements

Parameter	Unit	Accuracy [dB] Normal condition	Accuracy [dB] Extreme condition	Conditions Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	-3.5~~2.7~~…2.3~~1.5~~ for -14 ≤ CPICH Ec/Io –4.0~~3.2~~…2.8 for -16 ≤ CPICH Ec/Io < -14 –5.0~~4.2~~…3.8 for -20 ≤ CPICH Ec/Io < -16	-5.0~~4.2~~…3.8	-94...-87
		~~±~~ ±2.3~~1.5~~ for -14 ≤ CPICH Ec/Io ± 2.8 for -16 ≤ CPICH Ec/Io < -14 ± 3.8 for -20 ≤ CPICH Ec/Io < -16	± 3.8	-87...-50

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/Io Inter frequency tests parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior	dB	-1.12	-0.95	-2.55	-0.94	-2.55	-0.94
Ioc	dBm/ 3.84 MHz	-53.5	-53.5	-86.27	-86.27	-93.46	-93.46
Îor/Ioc	dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/Io, Note 1	dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
Io, Note 1	dBm	-51.15	-51.15	-84.9	-84.9	-93	-93
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io 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 **_Tdoc ⌘T1-031189_**
Munich, Germany, 28 July – 01 August 2003

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**284**	⌘ **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 ⌘ symbols.*

Proposed change affects:	UICC apps⌘		ME	**X**	Radio Access Network		Core Network	

Title:	⌘	Test Requirements for RRM CPICH Ec/Io Inter Frequency Measurement		
Source:	⌘	T1		
Work item code:	⌘		***Date:*** ⌘	14/07/2003
Category:	⌘	**A**	***Release:*** ⌘	Rel-4
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Test Requirements are missing.
Summary of change:	⌘	Test Requirements are included
Consequences if not approved:	⌘	Test could fail "good UEs" because Test Requirements differ from the Minimum Requirements

Clauses affected:	⌘	8.7.2.2				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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

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$|_{dBm}$ ≥ -114 dBm.
- $\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB$.
- | Channel 1_Io$|_{dBm/3.84\ MHz}$ -Channel 2_Io$|_{dBm/3.84\ MHz}$ | ≤ 20 dB.
- $\left.\frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \le 20dB$.

Table 8.7.2.2.2.1: CPICH_Ec/Io Inter frequency relative accuracy, minimum requirements

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	±1.5 for -14 ≤ CPICH Ec/Io ±2 for -16 ≤ CPICH Ec/Io < -14 ±3 for -20 ≤ CPICH Ec/Io < -16	±3	-94...-50

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.

Table 8.7.2.2.2.2: CPICH Ec/Io Inter frequency ~~tests~~ parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
Ioc	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
Îor/Ioc	dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/Io, 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	
NOTE 1: CPICH Ec/Io and Io 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 8.7.2.2.2.2.~~

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.

~~1~~2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

~~2~~3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

~~3~~4) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.

~~4~~5) UE shall transmit periodically MEASUREMENT REPORT messages.

~~5~~6) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio measured from Cell 1 is compared to CPICH_Ec/Io power value measured from Cell 2 for each MEASUREMENT REPORT message.

~~6~~7) The result of step ~~5~~6) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

~~7~~8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.~~2~~4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~5~~6) and ~~6~~7) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.~~2~~4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~5~~6) and ~~6~~7) above are repeated.

~~8~~9) After 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~9~~10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

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

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	Not Present
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
PhyCH information elements	
-Frequency info	Not Present
Uplink radio resources	
-Maximum allowed UL TX power	Not Present
- CHOICE *channel requirement*	Not Present
Downlink radio resources	
-CHOICE mode	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links	
-Downlink DPCH info common for all RL	Not Present
-CHOICE mode	FDD
-DPCH compressed mode info	
-Transmission gap pattern sequence	
-TGPSI	1
-TGPS Status Flag	Activate
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256
-Transmission gap pattern sequence configuration parameters	
-TGMP	FDD measurement
-TGPRC	Infinity
-TGSN	4
-TGL1	7
-TGL2	Not Present
-TGD	0
-TGPL1	3
-TGPL2	Not Present
-RPP	Mode 0
-ITP	Mode 0
-CHOICE UL/DL mode	UL and DL
-Downlink compressed mode method	SF/2
-Uplink compressed mode method	SF/2
-Downlink frame type	B
-DeltaSIR1	3.0
-DeltaSIRafter1	3.0
-DeltaSIR2	Not Present
-DeltaSIRafter2	Not Present
-N Identify abort	Not Present
-T Reconfirm abort	Not Present
-TX Diversity Mode	Not Present
-SSDT information	Not Present
-Default DPCH Offset Value	Not Present
-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 -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command -Measurement Reporting Mode - Measurement Report Transfer Mode - Periodical Reporting / Event Trigger Reporting Mode -Additional measurement list -CHOICE Measurement Type -Intra-frequency measurement - Intra-freqquency measurement objects list -Intra-frequency cell info list -Intra-frequency measurement quantity -Filter coefficient -CHOICE mode -Measurement quantity -Intra-frequency reporting quantity -Reporting quantities for active set cells -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for monitored set cells -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE mode -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator -Reporting quantities for detected set cells -Reporting cell status -CHOICE reported cell -Maximum number of reported cells -Measurement validity -CHOICE *report criteria* -Amount of reporting -Reporting interval	 1 Modify Acknowledged mode RLC Periodical reporting Not Present Intra-frequency measurement Not Present 0 FDD CPICH RSCP No report TRUE TRUE FDD TRUE TRUE TRUE No report FALSE TRUE FDD TRUE TRUE TRUE Not Present Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Periodical reporting criteria Infinity 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 -Integrity check info	 0 Not Present

Measurement Information elements
-Measurement Identity
-Measurement Command
-Measurement Reporting Mode
 - Measurement Report Transfer Mode
 - Periodical Reporting / Event Trigger Reporting Mode
-Additional measurement list
-CHOICE Measurement Type
 -Inter-frequency measurement
  -Inter-frequency cell info list
   -CHOICE Inter-frequency cell removal
   -New inter-frequency cells
   -Cell for measurement
  -Inter-frequency measurement quantity
   -CHOICE reporting criteria
    -Filter coefficient
    -CHOICE mode
     -Measurement quantity for frequency quality estimate
  -Inter-frequency reporting quantity
   -UTRA Carrier RSSI
   -Frequency quality estimate
   -Non frequency related cell reporting quantities
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
  -Reporting cell status
   -CHOICE reported cell
 	
    -Maximum number of reported cells
  -Measurement validity
  -Inter-frequency set update
  -CHOICE report criteria
   -Amount of reporting
   -Reporting interval
	
	2
	Setup
	
	Acknowledged mode RLC
	Periodical reporting
	
	Not Present
	Inter-frequency measurement
	
	Not Present
	Cell 2 information is included
	Not Present
	
	Inter-frequency reporting criteria
	0
	FDD
	CPICH RSCP
	
	TRUE
	TRUE
	
	No report
	
	TRUE
	
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	
	Report all active set cells + cells within monitored set on used frequency
	Virtual/active set cells + 2
	Not Present
	Not Present
	Periodical reporting criteria
	Infinity
	500 ms

Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.2.2.2.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.2.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in clause 8.7.2.2.2.2 as shown in table 8.7.2.2.2.3.

Table 8.7.2.2.2.3: CPICH_Ec/Io Inter frequency relative accuracy, test requirements

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	-3.5~~2.7~~…2.3~~1.5~~ for -14 ≤ CPICH Ec/Io –4.0~~3.2~~…2.8 for -16 ≤ CPICH Ec/Io < -14 –5.0~~4.2~~…3.8 for -20 ≤ CPICH Ec/Io < -16	-5.0~~4.2~~…3.8	-94...-87
		~~±~~ ±2.3~~1.5~~ for -14 ≤ CPICH Ec/Io ± 2.8 for -16 ≤ CPICH Ec/Io < -14 ± 3.8 for -20 ≤ CPICH Ec/Io < -16	± 3.8	-87...-50

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/Io Inter frequency tests parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior	dB	-1.12	-0.95	-2.55	-0.94	-2.55	-0.94
Ioc	dBm/ 3.84 MHz	-53.5	-53.5	-86.27	-86.27	-93.46	-93.46
Îor/Ioc	dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/Io, Note 1	dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
Io, Note 1	dBm	-51.15	-51.15	-84.9	-84.9	-93	-93
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io 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

Tdoc ⌘T1-031190

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**285**	⌘**rev**	**-**	⌘ Current version:	**5.0.0** ⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Test Requirements for RRM CPICH Ec/Io Inter Frequency Measurement
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	14/07/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Test Requirements are missing.
Summary of change:	⌘	Test Requirements are included
Consequences if not approved:	⌘	Test could fail “good UEs” because Test Requirements differ from the Minimum Requirements

Clauses affected:	⌘	8.7.2.2			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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

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

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

8.7.2.2 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$|_{dBm}$ ≥ -114 dBm.
- $\left| CPICH\_RSCP1|_{in\ dBm} - CPICH\_RSCP2|_{in\ dBm} \right| \le 20dB$.
- | Channel 1_Io$|_{dBm/3.84\ MHz}$ -Channel 2_Io$|_{dBm/3.84\ MHz}$ | ≤ 20 dB.
- $\left.\frac{I_o}{(\hat{I}_{or})}\right|_{in\ dB} - \left.\left(\frac{CPICH\_E_c}{I_{or}}\right)\right|_{in\ dB} \le 20dB$.

Table 8.7.2.2.2.1: CPICH_Ec/Io Inter frequency relative accuracy, minimum requirements

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	±1.5 for -14 ≤ CPICH Ec/Io ±2 for -16 ≤ CPICH Ec/Io < -14 ±3 for -20 ≤ CPICH Ec/Io < -16	±3	-94...-50

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.

Table 8.7.2.2.2.2: CPICH Ec/Io Inter frequency ~~tests~~ parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
Ioc	dBm/ 3.84 MHz	-52.22	-52.22	-87.27	-87.27	-94.46	-94.46
Îor/Ioc	dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/Io, 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	
NOTE 1: CPICH Ec/Io and Io 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 8.7.2.2.2.2.~~

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.

~~1~~2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

~~2~~3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

~~3~~4) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.

~~4~~5) UE shall transmit periodically MEASUREMENT REPORT messages.

~~5~~6) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio measured from Cell 1 is compared to CPICH_Ec/Io power value measured from Cell 2 for each MEASUREMENT REPORT message.

~~6~~7) The result of step ~~5~~6) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.

~~7~~8) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.~~2~~4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~5~~6) and ~~6~~7) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.2.2.~~2~~4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~5~~6) and ~~6~~7) above are repeated.

~~8~~9) After 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~9~~10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

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

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

Information Element	Value/Remark
Message Type	
UE Information Elements -RRC transaction identifier -Integrity check info -Integrity protection mode info -Ciphering mode info -Activation time -New U-RNTI -New C-RNTI -RRC State Indicator -UTRAN DRX cycle length coefficient	 0 Not Present Not Present Not Present Not Present Not Present Not Present CELL_DCH 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 - CHOICE *channel requirement*	 Not Present Not Present
Downlink radio resources -CHOICE mode -Downlink PDSCH information -Downlink information common for all radio links -Downlink DPCH info common for all RL -CHOICE mode -DPCH compressed mode info -Transmission gap pattern sequence -TGPSI -TGPS Status Flag -TGCFN -Transmission gap pattern sequence configuration parameters -TGMP -TGPRC -TGSN -TGL1 -TGL2 -TGD -TGPL1 -TGPL2 -RPP -ITP -CHOICE UL/DL mode -Downlink compressed mode method -Uplink compressed mode method -Downlink frame type -DeltaSIR1 -DeltaSIRafter1 -DeltaSIR2 -DeltaSIRafter2 -N Identify abort -T Reconfirm abort -TX Diversity Mode -SSDT information -Default DPCH Offset Value -Downlink information per radio link list -Downlink information for each radio link -Choice mode -Primary CPICH info -Primary scrambling code	 FDD Not Present Not Present FDD 1 Activate (Current CFN + (256 – TTI/10msec))mod 256 FDD measurement Infinity 4 7 Not Present 0 3 Not Present Mode 0 Mode 0 UL and DL SF/2 SF/2 B 3.0 3.0 Not Present Not Present Not Present Not Present Not Present Not Present Not Present FDD 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 -Integrity check info	 0 Not Present

Measurement Information elements
-Measurement Identity
-Measurement Command
-Measurement Reporting Mode
 - Measurement Report Transfer Mode
 - Periodical Reporting / Event Trigger Reporting Mode
-Additional measurement list
-CHOICE Measurement Type
 -Intra-frequency measurement
  - Intra-freqquency measurement objects list
   -Intra-frequency cell info list
  -Intra-frequency measurement quantity
   -Filter coefficient
   -CHOICE mode
    -Measurement quantity
  -Intra-frequency reporting quantity
   -Reporting quantities for active set cells
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
   -Reporting quantities for monitored set cells
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
   -Reporting quantities for detected set cells
  -Reporting cell status
   -CHOICE reported cell
 	
    -Maximum number of reported cells
  -Measurement validity
  -CHOICE *report criteria*
   -Amount of reporting
   -Reporting interval
	
	1
	Modify
	
	Acknowledged mode RLC
	Periodical reporting
	
	Not Present
	Intra-frequency measurement
	
	Not Present
	
	0
	FDD
	CPICH RSCP
	
	No report
	
	TRUE
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	
	No report
	
	FALSE
	
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	Not Present
	
	Report all active set cells + cells within monitored set on used frequency
	Virtual/active set cells + 2
	Not Present
	Periodical reporting criteria
	Infinity
	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 -Integrity check info	 0 Not Present

Measurement Information elements
-Measurement Identity
-Measurement Command
-Measurement Reporting Mode
 - Measurement Report Transfer Mode
 - Periodical Reporting / Event Trigger Reporting Mode
-Additional measurement list
-CHOICE Measurement Type
 -Inter-frequency measurement
  -Inter-frequency cell info list
   -CHOICE Inter-frequency cell removal
   -New inter-frequency cells
   -Cell for measurement
  -Inter-frequency measurement quantity
   -CHOICE reporting criteria
    -Filter coefficient
    -CHOICE mode
     -Measurement quantity for frequency quality estimate
  -Inter-frequency reporting quantity
   -UTRA Carrier RSSI
   -Frequency quality estimate
   -Non frequency related cell reporting quantities
    -SFN-SFN observed time difference reporting indicator
    -Cell synchronisation information reporting indicator
    -Cell Identity reporting indicator
    -CHOICE mode
     -CPICH Ec/N0 reporting indicator
     -CPICH RSCP reporting indicator
     -Pathloss reporting indicator
  -Reporting cell status
   -CHOICE reported cell
 	
    -Maximum number of reported cells
  -Measurement validity
  -Inter-frequency set update
  -CHOICE report criteria
   -Amount of reporting
   -Reporting interval
	
	2
	Setup
	
	Acknowledged mode RLC
	Periodical reporting
	
	Not Present
	Inter-frequency measurement
	
	Not Present
	Cell 2 information is included
	Not Present
	
	Inter-frequency reporting criteria
	0
	FDD
	CPICH RSCP
	
	TRUE
	TRUE
	
	No report
	
	TRUE
	
	TRUE
	FDD
	TRUE
	TRUE
	TRUE
	
	Report all active set cells + cells within monitored set on used frequency
	Virtual/active set cells + 2
	Not Present
	Not Present
	Periodical reporting criteria
	Infinity
	500 ms

Physical channel information elements -DPCH compressed mode status info	 Not Present

MEASUREMENT REPORT message for Intra frequency test cases

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

8.7.2.2.2.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.2.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in clause 8.7.2.2.2.2 as shown in table 8.7.2.2.2.3.

Table 8.7.2.2.2.3: CPICH_Ec/Io Inter frequency relative accuracy, test requirements

Parameter	Unit	Accuracy [dB] Normal condition	Accuracy [dB] Extreme condition	Conditions Io [dBm/3.84 MHz]
CPICH_Ec/Io	dB	-3.5~~2.7~~…2.3~~1.5~~ for -14 ≤ CPICH Ec/Io –4.0~~3.2~~…2.8 for -16 ≤ CPICH Ec/Io < -14 –5.0~~4.2~~…3.8 for -20 ≤ CPICH Ec/Io < -16	-5.0~~4.2~~…3.8	-94...-87
		~~±~~ ±2.3~~1.5~~ for -14 ≤ CPICH Ec/Io ± 2.8 for -16 ≤ CPICH Ec/Io < -14 ± 3.8 for -20 ≤ CPICH Ec/Io < -16	± 3.8	-87...-50

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/Io Inter frequency tests parameters

Parameter	Unit	Test 1 Cell 1	Test 1 Cell 2	Test 2 Cell 1	Test 2 Cell 2	Test 3 Cell 1	Test 3 Cell 2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	-10		-10		-10	
PCCPCH_Ec/Ior	dB	-12		-12		-12	
SCH_Ec/Ior	dB	-12		-12		-12	
PICH_Ec/Ior	dB	-15		-15		-15	
DPCH_Ec/Ior	dB	-15	-	-6	-	-6	-
OCNS_Ec/Ior	dB	-1.12	-0.95	-2.55	-0.94	-2.55	-0.94
Ioc	dBm/ 3.84 MHz	-53.5	-53.5	-86.27	-86.27	-93.46	-93.46
Îor/Ioc	dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH Ec/Io, Note 1	dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
Io, Note 1	dBm	-51.15	-51.15	-84.9	-84.9	-93	-93
Propagation condition	-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/Io and Io 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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CR-Form-v7

CHANGE REQUEST

⌘ 34.121	CR 286	⌘ rev -	⌘	Current version: 3.13.0	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Test requirements for RRM Random Access tests
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	04/07/2003
Category:	⌘	F
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Test tolerances for the Random Access tests are not defined
Summary of change:	⌘	Test tolerances are added.
Consequences if not approved:	⌘	Test tolerances remain unspecified and test results are ambiguous.

Clauses affected:	⌘	8.4.2				
		Y	**N**			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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

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 ± 9dB in the case of normal condition or ±12dB in the case of extreme condition.

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

NOTE: In order to calculate the power difference between 10th preamble PRACH and message part by using Power offset $P_{p\text{-}m}$ in the table 8.4.2.1.2, the gain factors of PRACH message part are needed. The gain factor β_d is set to15. 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.

Table 8.4.2.1.1: RF Parameters for Random Access test

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

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

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

Table 8.4.2.1.2: UE parameters for Random Access test

Parameter	Unit	Value
Access Service Class (ASC#0) *- Persistence value*	0..1	1
Maximum number of preamble ramping cycles (M_{max}).		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	0

Table 8.4.2.1.3: SS parameters for Random Access test

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

8.4.2.1.4.2 Procedure

1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an ACK on the AICH shall be transmitted after 10 preambles have been received by the SS

~~1~~2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.~~1~~4.

~~2~~3) Measure the first PRACH preamble output power, the each power difference for preamble ramping and the power difference between 10^{th} preamble PRACH and message part of the UE according to annex B.

~~3~~4) 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 ±3 dB	3dB ±3 dB

NOTE: In order to calculate the power difference between 10th preamble PRACH and message part by using Power offset $P_{p\text{-}m}$ in the table 8.4.2.1.2, the gain factors of PRACH message part are needed. The gain factor β_d is set to15. The temporary gain factor β_c is set to 15.

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

Table 8.4.2.1.5: RF Parameters for Random Access test

Parameter	Unit	Cell 1
UTRA RF Channel Number		Channel 1
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
Number of other transmitted Acquisition Indicators	-	0
AICH_Ec/Ior	dB	-10
PICH_Ec/Ior	dB	-15
OCNS_Ec/Ior when an AI is not transmitted	dB	-0,941
OCNS_Ec/Ior when an AI is transmitted	dB	-1,516
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN

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

~~1)~~2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.4~~1~~.

~~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.

Table 8.4.2.1.6: UE parameters for correct behaviour at Time-out test

Parameter	Unit	Value
Access Service Class (ASC#0) *- Persistence value*	0..1	1
Maximum number of preamble ramping cycles (M_{max}).		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 P_0)	dB	3
Power offset between the last transmitted preamble and the control part of the message (Power offset $P_{p\text{-}m}$)	dB	0
Maximum allowed UL TX power	dBm	21

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.

~~1)~~2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.1.

~~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

1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no AICH.

~~1~~2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.~~1~~4.

~~2~~3) Measure the all PRACH preamble output power of the UE according to annex B.

8.4.2.4.5 Test requirements

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

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

Table 8.4.2.4:
Test requirement for maximum preamble power

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

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

3GPP TSG-T1 Meeting #20 **Tdoc ⌘T1-031192**
Munich, Germany, 28 July – 01 August 2003

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	287	⌘ 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 ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Test requirements for RRM Random Access tests
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	04/07/2003
Category:	⌘	A
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Test tolerances for the Random Access tests are not defined
Summary of change:	⌘	Test tolerances are added.
Consequences if not approved:	⌘	Test tolerances remain unspecified and test results are ambiguous.

Clauses affected:	⌘	8.4.2			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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

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

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

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

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 ± 9dB in the case of normal condition or ±12dB in the case of extreme condition.

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

NOTE: In order to calculate the power difference between 10th preamble PRACH and message part by using Power offset $P_{p\text{-}m}$ in the table 8.4.2.1.2, the gain factors of PRACH message part are needed. The gain factor β_d is set to15. 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.

Table 8.4.2.1.1: RF Parameters for Random Access test

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

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

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

Table 8.4.2.1.2: UE parameters for Random Access test

Parameter	Unit	Value
Access Service Class (ASC#0) *- Persistence value*	0..1	1
Maximum number of preamble ramping cycles (M_{max}).		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	0

Table 8.4.2.1.3: SS parameters for Random Access test

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

8.4.2.1.4.2 Procedure

1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an ACK on the AICH shall be transmitted after 10 preambles have been received by the SS

~~1~~2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.~~1~~4.

~~2~~3) Measure the first PRACH preamble output power, the each power difference for preamble ramping and the power difference between 10^{th} preamble PRACH and message part of the UE according to annex B.

~~3~~4) 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 ±3 dB	3dB ±3 dB

NOTE: In order to calculate the power difference between 10th preamble PRACH and message part by using Power offset P_{p-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 to15. The temporary gain factor β_c is set to 15.

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

Table 8.4.2.1.5: RF Parameters for Random Access test

Parameter	Unit	Cell 1
UTRA RF Channel Number		Channel 1
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
Number of other transmitted Acquisition Indicators	-	0
AICH_Ec/Ior	dB	-10
PICH_Ec/Ior	dB	-15
OCNS_Ec/Ior when an AI is not transmitted	dB	-0,941
OCNS_Ec/Ior when an AI is transmitted	dB	-1,516
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN

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

~~1)~~2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.4~~1~~.

~~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.

Table 8.4.2.1.6: UE parameters for correct behaviour at Time-out test

Parameter	Unit	Value
Access Service Class (ASC#0) *- Persistence value*	0..1	1
Maximum number of preamble ramping cycles (M_{max}).		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

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.

~~1)~~2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.1.

~~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

1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no AICH.

~~1~~2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.~~1~~4.

~~2~~3) Measure the all PRACH preamble output power of the UE according to annex B.

8.4.2.4.5 Test requirements

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

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

Table 8.4.2.4:
Test requirement for maximum preamble power

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

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

3GPP TSG-T1 Meeting #20 **Tdoc ⌘T1-031193**
Munich, Germany, 28 July – 01 August 2003

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	288	⌘ rev	-	⌘	Current version:	5.0.0	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Test requirements for RRM Random Access tests
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	04/07/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
*   **F** (correction)
*   **A** (corresponds to a correction in an earlier release)
*   **B** (addition of feature),
*   **C** (functional modification of feature)
*   **D** (editorial modification)

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Test tolerances for the Random Access tests are not defined
Summary of change:	⌘	Test tolerances are added.
Consequences if not approved:	⌘	Test tolerances remain unspecified and test results are ambiguous.

Clauses affected:	⌘	8.4.2

		Y	N			
Other specs affected:	⌘		X	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

How to create CRs using this form:

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

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

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

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

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 ± 9dB in the case of normal condition or ±12dB in the case of extreme condition.

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

NOTE: In order to calculate the power difference between 10th preamble PRACH and message part by using Power offset $P_{p\text{-}m}$ in the table 8.4.2.1.2, the gain factors of PRACH message part are needed. The gain factor β_d is set to15. 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.

Table 8.4.2.1.1: RF Parameters for Random Access test

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

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

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

Table 8.4.2.1.2: UE parameters for Random Access test

Parameter	Unit	Value
Access Service Class (ASC#0) *- Persistence value*	0..1	1
Maximum number of preamble ramping cycles (M_{max}).		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	0

Table 8.4.2.1.3: SS parameters for Random Access test

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

8.4.2.1.4.2 Procedure

1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that an ACK on the AICH shall be transmitted after 10 preambles have been received by the SS

~~1~~2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.~~1~~4.

~~2~~3) Measure the first PRACH preamble output power, the each power difference for preamble ramping and the power difference between 10^{th} preamble PRACH and message part of the UE according to annex B.

~~3~~4) 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 ±3 dB	3dB ±3 dB

NOTE: In order to calculate the power difference between 10th preamble PRACH and message part by using Power offset P_{p-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 to15. The temporary gain factor β_c is set to 15.

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

Table 8.4.2.1.5: RF Parameters for Random Access test

Parameter	Unit	Cell 1
UTRA RF Channel Number		Channel 1
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
Number of other transmitted Acquisition Indicators	-	0
AICH_Ec/Ior	dB	-10
PICH_Ec/Ior	dB	-15
OCNS_Ec/Ior when an AI is not transmitted	dB	-0,941
OCNS_Ec/Ior when an AI is transmitted	dB	-1,516
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN

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

~~1)~~2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.4~~1~~.

~~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.

Table 8.4.2.1.6: UE parameters for correct behaviour at Time-out test

Parameter	Unit	Value
Access Service Class (ASC#0) *- Persistence value*	0..1	1
Maximum number of preamble ramping cycles (M_{max}).		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

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.

~~1)~~2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.1.

~~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

1) A call is set up according to the Generic call setup procedure. The test parameters are set up according to table 8.4.2.1.1, table 8.4.2.1.2 and table 8.4.2.1.3. The PRACH procedure within the call setup is used for the test. It is necessary that SS shall transmit no AICH.

~~1~~2) Set the TX output level of the SS to obtain $\hat{I}_{or}$ at the UE antenna connector. $\hat{I}_{or}$ shall be according to table 8.4.2.1.~~1~~4.

~~2~~3) Measure the all PRACH preamble output power of the UE according to annex B.

8.4.2.4.5 Test requirements

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

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

Table 8.4.2.4:
Test requirement for maximum preamble power

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

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

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

Tdoc ⌘T1-031229

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**289**	⌘ **rev**	**-**	⌘	Current version:	**3.13.0**	⌘

For ***HELP*** *on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects:	UICC apps⌘		ME	**X**	Radio Access Network		Core Network	

Title:	⌘	Completionof annex F		
Source:	⌘	T1		
Work item code:	⌘		***Date:*** ⌘	28/07/2003
Category:	⌘	**F**	***Release:*** ⌘	R99
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	Follow up for Annex F due to newly developped test requirements
Summary of change:	⌘	Update of uncertainties and test tolerances
Consequences if not approved:	⌘	Annex F incomplete

Clauses affected:	⌘	Annex F				
		Y	**N**			
Other specs affected:	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

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

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

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

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 ±1,0 %.
- AC Voltage ±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

Table F.1.2: Maximum Test System Uncertainty for transmitter tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.2 Maximum Output Power	±0,7 dB	
5.3 Frequency Error	±10 Hz	
5.4.1 Open loop power control in uplink	±1,0 dB	The uncertainty of this test is a combination of the downlink level setting error and the uplink power measurement that are uncorrelated. Formula = SQRT(source_level_error^2 + power_meas_error^2)
5.4.2 Inner loop power control in the uplink - One step	±0,1 dB relative over a 1,5 dB range (1 dB and 0 dB step) ±0,15 dB relative over a 3,0 dB range (2 dB step) ±0,2 dB relative over a 4.5 dB range (3 dB 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	±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: $\frac{DPCCH\_E_c}{I_{or}}$	±0,4 dB	0.1 dB uncertainty in DPCCH ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the DPCCH_Ec/Ior ratio. The absolute error of the AWGN Ioc 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 = ±3*RBW. Assume 30 kHz bandwidth.
5.9 Spectrum emission mask	±1,5 dB	

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	± 2,0 dB for UE and coexistence bands for results > -60 dBm ± 3,0 dB for results < -60 dBm Outside above: f≤2.2GHz: ± 1.5 dB 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB f > 4 GHz: ±4.0 dB	
5.12 Transmit Intermodulation	± 2.2 dB	CW Interferer error is 0.7 dB for the UE power RSS with 0.7 dB for CW setting = 1.0 dB Measurement error of intermod product is 0.7 dB for UE power RSS with 0.7 dB for relative = 1.0 dB Interferer has an effect of 2 times on the intermod product so overall test uncertainty is 2*1.0 RSS with 1.0 = 2.2 dB. Apply half any excess test system uncertainty to increase the interferer level
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	
5.13.2 Transmit modulation: peak code domain error	±1.0dB	

F.1.3 Measurement of receiver

Table F.1.3: Maximum Test System Uncertainty for receiver tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
6.2 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/Ior ratio. 0.7 dB absolute error due to signal measurement DPCH_Ec/Ior 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: ± 1.4 dB f >= 15 MHz offset and f_b ≤ 2.2 GHz: ± [1.0] dB 2.2 GHz < f ≤ 4 GHz: ±[1.7] dB f > 4 GHz: ±[3.1] dB	Using ± 0.7 dB for signal and interferer as currently defined and 68 dB ACLR @ 10 MHz.
6.6 Spurious Response	f ≤ 2.2 GHz: ± 1.0 dB 2.2 GHz < f ≤ 4 GHz: ±1.7 dB f > 4 GHz: ±3.1 dB	

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 = $\sqrt{(2 \cdot CW\_level\_error)^2 + (\mathrm{mod}\_level\_error)^2}$ (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	± 3.0 dB for UE receive band (-78 dBm) Outside above: f≤2.2GHz: ± 2.0 dB (-57 dBm) 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB (-47 dBm) f > 4 GHz: ±4.0 dB (-47 dBm)	

F.1.4 Performance requirement

Table F.1.4: Maximum Test System Uncertainty for Performance Requirements

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.2 Demodulation in Static Propagation Condition	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the DPCH_Ec/Ior ratio but is not RSS for simplicity. The absolute error of the AWGN Ioc is not important for any tests in clause 7 but is specified as 1.0 dB.
7.3 Demodulation of DCH in multipath Fading Propagation conditions	$\hat{I}_{or}/I_{oc}$ ±0.56 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Worst case gain uncertainty due to the fader from the calibrated static profile is ±0.5 dB In addition the same ±0.3 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 $(0.5^2 + 0.3^2)^{0.5}$ = 0.6 dB
7.4 Demodulation of DCH in Moving Propagation conditions	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.5 Demodulation of DCH in Birth-Death Propagation conditions	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.6.1 Demodulation of DCH in open loop Transmit diversity mode	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Worst case gain uncertainty due to the fader from the calibrated static profile is ±0.5 dB per output In addition the same ±0.3 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. Round up to 0.8 dB

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.7.1 Demodulation in inter-cell soft Handover	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.7.2 Combining of TPC commands Test 1	Ior1,Ior2 ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Test is looking for changes in power – need to allow for relaxation in criteria for power step of probably 0.1 dB to 0.4 dB
7.7.2 Combining of TPC commands Test 2	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.8.1 Power control in downlink constant BLER target	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.8.2, Power control in downlink initial convergence	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.8.3, Power control in downlink: wind up effects	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.9 Downlink compressed mode	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.10 Blind transport format detection Tests 1, 2, 3	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.2
7.10 Blind transport format detection Tests 4, 5, 6	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3

F.1.5 Requirements for support of RRM

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

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2 Idle Mode Tasks		
8.2.2 Cell Re-Selection		
8.2.2.1 Scenario 1: Single carrier case	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 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 I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc1/Ioc2 based on power meter measurement after the combiner Overall error for the CPICH_Ec/Io is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the CPICH_Ec/Ior 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 level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.3.2 Scenario 2: Only UTRA level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.3.1
8.2.4 FDD/TDD cell re-selection	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.3 UTRAN Connected Mode Mobility		
8.3.1 FDD/FDD Soft Handover		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 neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.5.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.3.6 Cell Re-selection in CELL_PCH		
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1	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 neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control	TBD	
8.4.1 RRC Re-establishment delay		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.4.2 Random Access	Settings. $\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{AICH\_E_c}{I_{or}}$ ±0.1 dB Measurements: Power difference. ± 1dB Maximum Power: same as 5.5.2	0.1 dB uncertainty in AICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the AICH_Ec/Ior ratio. The absolute error of the AWGN is specified as 1.0 dB Power difference: Assume symmetric meas error ±1.0 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error. Maximum Power: Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit
8.5 Timing and Signalling Characteristics		
8.5.1 UE Transmit Timing	I_{or} ±1.0 dB I_{or1}/I_{or2} ±0.3 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio 0.3 dB uncertainty in Ior1/Ior2 based on power meter measurement after the combiner The absolute error of the Ior 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 AWGN propagation conditions	TBD	
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD	
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD	
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD	
8.6.2 FDD inter frequency measurements		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD	
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD	
8.6.3 TDD measurements	TBD	

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		
8.7.1.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.1.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.2 CPICH Ec/Io		
8.7.2~~1~~.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.2~~1~~.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.3A UTRA Carrier RSSI	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc1/Ioc2 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 System Uncertainty	Derivation of Test System Uncertainty
8.7.6 UE Rx-Tx time difference	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Rx-Tx Timing Accuracy [±0.5 chip]	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB.
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

Table F.2.1: Test Tolerances for transmitter tests.

Clause	Test Tolerance
5.2 Maximum Output Power	0.7 dB
5.3 Frequency error	10 Hz
5.4.1 Open loop power control in uplink	1.0 dB
5.4.2 Inner loop power control in the uplink - One step	0.1 dB (1 dB and 0 dB step) 0.15 dB (2 dB step) 0.2 dB (3 dB step)
5.4.2 Inner loop power control in the uplink - seven and ten steps	0.3 dB
5.4.3 Minimum Output Power	1.0 dB
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	0.4 dB
5.4.4 Out-of-synchronisation handling of output power: transmit ON/OFF time	0 ms
5.5.1 Transmit OFF power	1.0 dB
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0.7 dB / -1.0 dB Off power TT [ ] dB
5.6 Change of TFC: power control step size	0.3 dB
5.7 Power setting in uplink compressed mode:- UE output power	See subset of 5.4.2
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 domain error	1.0 dB

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

Table F.2.3: Test Tolerances for Performance Requirements.

Clause	Test Tolerance
7.2 Demodulation in Static Propagation Condition	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.3 Demodulation of DCH in multipath Fading Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.4 Demodulation of DCH in Moving Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.5 Demodulation of DCH in Birth-Death Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.1 Demodulation of DCH in open loop Transmit diversity mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.7.1 Demodulation in inter-cell soft Handover conditions	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.7.2 Combining of TPC commands Test 1	0 dB for Ior1, Ior2 0.1 dB for DPCH_Ec/Ior
7.7.2 Combining of TPC commands Test 2	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.1 Power control in downlink constant BLER target	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.2, Power control in downlink initial convergence	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.3, Power control in downlink: wind up effects	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.9 Downlink compressed mode	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.10 Blind transport format detection Tests 1, 2, 3	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.10 Blind transport format detection Tests 4, 5, 6	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior

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 $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.2.2.2 Scenario 2: Multi carrier case	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.2.3 UTRAN to GSM Cell Re-Selection	
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2
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
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.5.2 Two frequencies present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.6 Cell Re-selection in CELL_PCH	
8.3.6.1 One frequency present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.6.2 Two frequencies present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.7 Cell Re-selection in URA_PCH	
8.3.7.1 One frequency present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.7.2 Two frequencies present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
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 $\hat{I}_{or}/I_{oc}$ 0.1 dB for AICH_Ec/Ior Measurements: Power difference: ± 1dB Maximum Power: -1dB / +0.7dB
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD intra frequency measurements	
8.6.1.1 Event triggered reporting in AWGN propagation conditions	TBD
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD
8.6.2 FDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD
8.6.3 TDD measurements	
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD
8.7 Measurements Performance Requirements	TBD
8.7.1 CPICH RSCP	
8.7.1.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 1.0 dB for Ioc
8.7.1.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2 1.0 dB for Ioc
8.7.2 CPICH Ec/Io	
8.7.2~~1~~.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.2~~1~~.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.3A UTRA Carrier RSSI	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc
8.7.3B Transport channel BLER	TBD
8.7.3C UE Transmitted power	0.7 dB for mean power measurement by test system
8.7.4 SFN-CFN observed time difference	
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 Ioc [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.

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

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = +1/-3 dB Power class 2 (27 dBm) Tolerance = +1/-3 dB Power class 3 (24 dBm) Tolerance = +1/-3 dB Power class 4 (21 dBm) Tolerance = ±2 dB	0.7 dB	Formula: Upper Tolerance limit + TT 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 = ±(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

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 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 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.4 dB for $\frac{DPCCH\_E}{I_{or}}$ 0 ms for timing measurement	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 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB $\frac{DPCCH\_E_c}{I_{or}}$ 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

<table>
<tr><th>Test</th><th colspan="2">Minimum Requirement in TS 25.101</th><th>Test Tolerance (TT)</th><th colspan="2">Test Requirement in TS 34.121</th></tr>
<tr><td>5.6 Change of TFC: power control step size</td><td colspan="2">TFC step size = +5 to +9 dB</td><td>0.3 dB</td><td colspan="2">Formula: Upper Tolerance limit + TT
Lower Tolerance limit – TT

Upper limit = -4.7 dB
Lower limit = -9.3 dB</td></tr>
<tr><td>5.7 Power setting in uplink compressed mode</td><td colspan="2">Various</td><td>TBD (Subset of 5.4.2)</td><td colspan="2">TBD</td></tr>
<tr><td>5.8 Occupied Bandwidth</td><td colspan="2">The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps.</td><td>0 kHz</td><td colspan="2">Formula: occupied channel bandwidth: + TT

occupied channel bandwidth = 5.0 MHz</td></tr>
<tr><td>5.9 Spectrum emission mask</td><td colspan="2">Minimum requirement defined in TS25.101 Table 6.10.
The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher.</td><td>1.5 dB</td><td colspan="2">Formula: Minimum requirement + TT
Lower limit + TT
Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10.
Zero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements.
The lower limit shall be –48.5 dBm / 3.84 MHz or which ever is higher.</td></tr>
<tr><td rowspan="2">5.10 Adjacent Channel Leakage Power Ratio (ACLR)</td><td colspan="2">If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below.</td><td>0.0 dB</td><td colspan="2">Formula: Absolute power threshold + TT</td></tr>
<tr><td colspan="2">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</td><td>0.8 dB</td><td colspan="2">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</td></tr>
<tr><td rowspan="10">5.11 Spurious Emissions</td><td colspan="2"></td><td></td><td colspan="2">Formula: Minimum Requirement+ TT
Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.</td></tr>
<tr><td>Frequency Band</td><td>Minimum Requirement</td><td></td><td>Frequency Band</td><td>Minimum Requirement</td></tr>
<tr><td>9 kHz ≤ f < 150 kHz</td><td>–36dBm /1kHz</td><td>0 dB</td><td>9kHz ≤ f < 1GHz</td><td>–36dBm /1kHz</td></tr>
<tr><td>150 kHz ≤ f < 30 MHz</td><td>–36dBm /10kHz</td><td>0 dB</td><td>150 kHz ≤ f < 30 MHz</td><td>–36dBm /10kHz</td></tr>
<tr><td>30 MHz ≤ f < 1000 MHz</td><td>–36dBm /100kHz</td><td>0 dB</td><td>30 MHz ≤ f < 1000 MHz</td><td>–36dBm /100kHz</td></tr>
<tr><td rowspan="3">1 GHz ≤ f < 12.75 GHz</td><td rowspan="3">–30dBm /1MHz</td><td>0 dB</td><td>1 GHz ≤ f < 2.2 GHz</td><td>–30dBm /1MHz</td></tr>
<tr><td>0 dB</td><td>2.2 GHz ≤ f < 4 GHz</td><td>–30dBm /1MHz</td></tr>
<tr><td>0 dB</td><td>4 GHz ≤ f < 12.75 GHz</td><td>–30dBm /1MHz</td></tr>
<tr><td>1893.5 MHz < f < 1919.6 MHz</td><td>–41dBm /300kHz</td><td>0 dB</td><td>1893.5 MHz < f < 1919.6 MHz</td><td>–41dBm /300kHz</td></tr>
<tr><td>925 MHz ≤ f ≤ 935 MHz</td><td>–67dBm /100kHz</td><td>0 dB</td><td>925 MHz ≤ f ≤ 935 MHz</td><td>–67dBm /100kHz</td></tr>
</table>

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 level – TT/2 Intermod Products limits remain unchanged. CW interferer level = -40 dBc	
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	

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	
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 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 Ior -19 dBc DPCH_Ec/Ior		0.7 dB	Formula: Ior-TT Ior = -25.7 dBm	
6.4 Adjacent Channel Selectivity	Îor = -92.7 dBm / 3.84 MHz DPCH_Ec = –103 dBm / 3.84 MHz Ioac (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	Iouw1 (CW) -46 dBm Iouw2 (modulated) –46 dBm / 3.84 MHz Fuw1 (offset) 10 MHz Fuw2 (offset) 20 MHz Ior = -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 unchanged Iouw2 level unchanged BER limit unchanged. Ior = -114 dBm BER limit. = 0.001	
6.8 Spurious Emissions				Formula: Maximum level + TT Add zero to all the values of Maximum Level in table 6.8.1.	
	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

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
			0 dB	2.2GHz < f ≤ 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.4.3: Derivation of Test Requirements (Performance tests)

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 to -16.6 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 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 to -15.0 I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ + ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -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 to -7.7 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -3.1 to -7.6 dB:

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 to -11.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -4.3 to –11.7 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 13-16	$\frac{DPCH\_E_c}{I_{or}}$ -2.2 to -15.0 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: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 $\frac{DPCH\_E_c}{I_{or}}$ -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 to -8.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -1.3 to -8.7 dB:
7.4 Demodulation of DPCH in moving propagation conditions	$\frac{DPCH\_E_c}{I_{or}}$ -10.9 to -14.5 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -10.8 to –14.4 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 to -12.6 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -18.6 to -12.5 dB:
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH\_E_c}{I_{or}}$ -16.8 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -16.7 dB:
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH\_E_c}{I_{or}}$ -18 to -18.3 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -17.9 to -18.2 dB:
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH\_E_c}{I_{or}}$ -7.5 to -9.2 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 to -2.2 dB $\frac{DPCH\_E_c}{I_{or}}$ -7.4 to -9.1 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 to –15.2 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = Ior2/Ioc = 6 to 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.8 to 0.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -5.4 to –15.4 dB:
7.7.2 Combining of TPC commands Test 1	$\frac{DPCH\_E_c}{I_{or}}$ -12 dB Ior1 and Ior2 -60dBm	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0dB for Ior1 and Ior2	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\frac{DPCH\_E_c}{I_{or}}$ = -11,9 dB: Ior1 = –60dBm Ior2 = –60dBm 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 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 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 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 to -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 to –18.9 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -8.0 to -18.8 dB:
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH\_E_c}{I_{or}}$ -13.3 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 5 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 5.6 dB $\frac{DPCH\_E_c}{I_{or}}$ -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: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 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 to -18.4 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 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 to -13.8 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -12.9 to -13.7 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
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 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT I_{oc} unchanged Ior/Ioc = 7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.2.2.2 Scenario 2: Multi carrier case	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = -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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 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 Ior/Ioc	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 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 dB Ior/Ioc = 0 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = - 5 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -5.3 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 20 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 20.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 20 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 20.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 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		
8.3.5 Cell Re-selection 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 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT I_{oc} unchanged Ior/Ioc = 7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.5.2 Two frequencies present in the neighbour list	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = -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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 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 Ior/Ioc	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 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 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT I_{oc} unchanged Ior/Ioc = 7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 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 dB I_{oc} = - 70 dBm Ior/Ioc = -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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 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 Ior/Ioc	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 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 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT I_{oc} unchanged Ior/Ioc = 7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.7.2 Two frequencies present in the neighbour list	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = -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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 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 Ior/Ioc	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 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
8.4.2 Random Access	~~TBD~~ RACH power difference nominal 3dB ± 2dB UE setting uncertainty	Measurement TT: Power difference ± 1dB Maximum Power -1dB / +0.7dB	Test parameter settings unchanged. Power measurement: Upper limit +TT Lower limit -TT
8.5 Timing and Signalling Characteristics	TBD		
8.5.1 UE Transmit Timing	TBD		
8.6 UE Measurements Procedures	TBD		
8.6.1 FDD intra frequency measurements	TBD		
8.6.1.1 Event triggered reporting in AWGN propagation conditions	TBD		
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD		
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD		
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD		
8.6.2 FDD inter frequency measurements	TBD		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD		
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD		
8.6.3 TDD measurements	TBD		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD		
8.7 Measurements Performance Requirements	TBD		
8.7.1 CPICH RSCP	~~TBD~~		

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 8.7.1.1.1.1 and table 8.7.1.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for….. _Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1 (absolute and relative): Io shall not go below -69dBm Test 2(absolute and relative): Io shall not go above -50 dBm Test 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute ±1.0 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 1.4dB Relative ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.2 Inter frequency measurement accuracy	~~TBD~~ see table 8.7.1.2.1.1 and table 8.7.1.2.1.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB for ….. Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -94 dBm Ior/Ioc + TT TT 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) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 1.1 dB
8.7.2 CPICH Ec/Io	~~TBD~~		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.21.1 Intra frequency measurements accuracy	~~TBD~~ table 8.7.2.1.1.1 and table 8.7.2.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for ….. _Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1(absolute and relative): Io shall not go above -50 dBm Test 2 (absolute and relative): Io shall not go below -87dBm Test 3 (absolute and relative): Io shall not go below -94 dBm CPICH Ec/Io shall stay in the UE accuracy ranges Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute ±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 0.4dB Relative Ioc1=Ioc2 ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.~~1~~2.2 Inter frequency measurement accuracy	~~TBD~~ table 8.7.2.2.2.1 and table 8.7.2.2.2.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB for ….. Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -87 dBm Test 3: Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Ioc1=Ioc2. ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8 dB
8.7.3A UTRA Carrier RSSI	TBD		
8.7.3B Transport channel BLER	TBD		
8.7.3C UE Transmitted power	Accuracy upper limit Accuracy lower limit Depends on PUEMAX see table 8.7.3C.2.1	0.7 dB	Formula: Upper accuracy limit + TT Lower accuracy limit – TT Add and subtract TT to all the values in table 8.7.3C.2.1.
8.7.4 SFN-CFN observed time difference	TBD		
8.7.5 SFN-SFN observed time difference	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	*Io –10.9 dB = Ioc,* Test 1: Io = -94 dBm Test2 : Io = -72dBm Test3 : Io = -50dBm Timing Accuracy ± 1.5 chip	1 dB for Ioc 0.3 dB for Ior/Ioc [0.5 chip for timing accuracy]	Test 1: Io = -92.7 dBm, Ioc = -103.6 dBm Formula: $Ioc*(1-TT_{Ioc}+ (Ior/Ioc-TT_{Ior/Ioc})) \geq -94$ Test 2: unchanged (no critical RF parameters) Test 3: Io = -51.3 dBm, Ioc = -62.2 dBm Formula: $Ioc*(1+TT_{Ioc}+ (Ior/Ioc+TT_{Ior/Ioc})) \leq -50$ 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

Table F.5.1: Equipment accuracy for transmitter measurements

Test	Equipment accuracy	Test conditions
5.2 Maximum Output Power	Not critical	19 to 25 dBm
5.3 Frequency error	± 10 Hz	0 to 500 Hz.
5.4.1 Open loop power control in uplink	Not critical	-43.7 dBm to 25 dBm
5.4.2 Inner loop power control in the uplink – single step	±0.1 dB relative over a 1.5 dB range ±0.15 dB relative over a 3.0 range ±0.2 dB relative over a 4.5 dB range	+25 dBm to –50 dBm
5.4.2 Inner loop power control in the uplink – seven and ten steps	±0.3 dB relative over a 26 dB range	+25 dBm to –50 dBm
5.4.3 Minimum Output Power	Not critical	
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	±0.1 dB uncertainty in DPCCH_Ec/Ior ratio	Ratio from –16.6 dB to –28 dB
5.5.1 Transmit ON/OFF Power: UE transmit OFF power	Not critical	-56 dBm (static power)
5.5.2 Transmit ON/OFF Power: transmit ON/OFF time mask	TBD	-56 dBm (dynamic power over approx. 70 dB range)
5.6 Change of TFC: power control step size	±0.3 dB relative over a 9 dB range	+25 dBm to –50 dBm
5.7 Power setting in uplink compressed mode:- UE output power	Subset of 5.4.2	+25 dBm to –50 dBm
5.8 Occupied Bandwidth	±100 kHz	For results between 4 and 6 MHz?
5.9 Spectrum emission mask	Not critical	P_Max Accuracy applies ± 5 dB either side of UE requirements
5.10 ACLR	5 MHz offset ± 0.8 dB 10 MHz offset ± 0.8 dB	19 to 25 dBm at 5 MHz offset for results between 40 dB and 50 dB. 25 dBm at 10 MHz offset for results between 45 dB and 55 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 % (for single code)	25 dBm to –21 dBm
5.13.2 Transmit modulation: peak code domain error	±1.0dB	For readings between -10 dB to –20 dB.

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 ~~G~~F.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 Requirements for support of RRM

Table F.5.4: Equipment accuracy for RRM

Clause	Equipment accuracy	Test conditions
8.2.2 to 8.7.8	any_Ec/Ior ±0.1 dB Ior//Ioc ±0.3 dB Ioc1/Ioc2 ±0.3 dB Ioc ±1 dB	

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CR-Form-v7

CHANGE REQUEST

⌘ **34.121**	**CR 290**	⌘ **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 ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Completionof annex F
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	28/07/2003
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
- *2 (GSM Phase 2)*
- *R96 (Release 1996)*
- *R97 (Release 1997)*
- *R98 (Release 1998)*
- *R99 (Release 1999)*
- *Rel-4 (Release 4)*
- *Rel-5 (Release 5)*
- *Rel-6 (Release 6)*

Reason for change:	⌘	Follow up for Annex F due to newly developped test requirements
Summary of change:	⌘	Update of uncertainties and test tolerances
Consequences if not approved:	⌘	Annex F incomplete

Clauses affected:	⌘	Annex F			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP

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

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

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 ±1,0 %.
- AC Voltage ±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

Table F.1.2: Maximum Test System Uncertainty for transmitter tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.2 Maximum Output Power	±0,7 dB	
5.3 Frequency Error	±10 Hz	
5.4.1 Open loop power control in uplink	±1,0 dB	The uncertainty of this test is a combination of the downlink level setting error and the uplink power measurement that are uncorrelated. Formula = SQRT(source_level_error^2 + power_meas_error^2)
5.4.2 Inner loop power control in the uplink - One step	±0,1 dB relative over a 1,5 dB range (1 dB and 0 dB step) ±0,15 dB relative over a 3,0 dB range (2 dB step) ±0,2 dB relative over a 4.5 dB range (3 dB 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	±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: $\frac{DPCCH\_E_c}{I_{or}}$	±0,4 dB	0.1 dB uncertainty in DPCCH ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the DPCCH_Ec/Ior ratio. The absolute error of the AWGN Ioc 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 = ±3*RBW. Assume 30 kHz bandwidth.
5.9 Spectrum emission mask	±1,5 dB	

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	± 2,0 dB for UE and coexistence bands for results > -60 dBm ± 3,0 dB for results < -60 dBm Outside above: f≤2.2GHz: ± 1.5 dB 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB f > 4 GHz: ±4.0 dB	
5.12 Transmit Intermodulation	± 2.2 dB	CW Interferer error is 0.7 dB for the UE power RSS with 0.7 dB for CW setting = 1.0 dB Measurement error of intermod product is 0.7 dB for UE power RSS with 0.7 dB for relative = 1.0 dB Interferer has an effect of 2 times on the intermod product so overall test uncertainty is 2*1.0 RSS with 1.0 = 2.2 dB. Apply half any excess test system uncertainty to increase the interferer level
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	
5.13.2 Transmit modulation: peak code domain error	±1.0dB	

F.1.3 Measurement of receiver

Table F.1.3: Maximum Test System Uncertainty for receiver tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
6.2 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/Ior ratio. 0.7 dB absolute error due to signal measurement DPCH_Ec/Ior 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: ± 1.4 dB f >= 15 MHz offset and f_b ≤ 2.2 GHz: ± [1.0] dB 2.2 GHz < f ≤ 4 GHz: ±[1.7] dB f > 4 GHz: ±[3.1] dB	Using ± 0.7 dB for signal and interferer as currently defined and 68 dB ACLR @ 10 MHz.
6.6 Spurious Response	f ≤ 2.2 GHz: ± 1.0 dB 2.2 GHz < f ≤ 4 GHz: ±1.7 dB f > 4 GHz: ±3.1 dB	

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 = $\sqrt{(2 \cdot CW\_level\_error)^2 + (\mathrm{mod}\_level\_error)^2}$ (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	± 3.0 dB for UE receive band (-78 dBm) Outside above: f≤2.2GHz: ± 2.0 dB (-57 dBm) 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB (-47 dBm) f > 4 GHz: ±4.0 dB (-47 dBm)	

F.1.4 Performance requirement

Table F.1.4: Maximum Test System Uncertainty for Performance Requirements

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.2 Demodulation in Static Propagation Condition	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the DPCH_Ec/Ior ratio but is not RSS for simplicity. The absolute error of the AWGN Ioc is not important for any tests in clause 7 but is specified as 1.0 dB.
7.3 Demodulation of DCH in multipath Fading Propagation conditions	$\hat{I}_{or}/I_{oc}$ ±0.56 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Worst case gain uncertainty due to the fader from the calibrated static profile is ±0.5 dB In addition the same ±0.3 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 $(0.5^2 + 0.3^2)^{0.5}$ = 0.6 dB
7.4 Demodulation of DCH in Moving Propagation conditions	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.5 Demodulation of DCH in Birth-Death Propagation conditions	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.6.1 Demodulation of DCH in open loop Transmit diversity mode	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Worst case gain uncertainty due to the fader from the calibrated static profile is ±0.5 dB per output In addition the same ±0.3 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. Round up to 0.8 dB

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.7.1 Demodulation in inter-cell soft Handover	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.7.2 Combining of TPC commands Test 1	Ior1,Ior2 ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Test is looking for changes in power – need to allow for relaxation in criteria for power step of probably 0.1 dB to 0.4 dB
7.7.2 Combining of TPC commands Test 2	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.8.1 Power control in downlink constant BLER target	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.8.2, Power control in downlink initial convergence	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.8.3, Power control in downlink: wind up effects	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.9 Downlink compressed mode	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.10 Blind transport format detection Tests 1, 2, 3	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.2
7.10 Blind transport format detection Tests 4, 5, 6	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3

F.1.5 Requirements for support of RRM

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

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2 Idle Mode Tasks		
8.2.2 Cell Re-Selection		
8.2.2.1 Scenario 1: Single carrier case	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 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 I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc1/Ioc2 based on power meter measurement after the combiner Overall error for the CPICH_Ec/Io is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the CPICH_Ec/Ior 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 level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.3.2 Scenario 2: Only UTRA level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.3.1
8.2.4 FDD/TDD cell re-selection	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.3 UTRAN Connected Mode Mobility		
8.3.1 FDD/FDD Soft Handover		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 neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.5.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.3.6 Cell Re-selection in CELL_PCH		
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1	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 neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control	TBD	
8.4.1 RRC Re-establishment delay		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.4.2 Random Access	Settings. $\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{AICH\_E_c}{I_{or}}$ ±0.1 dB Measurements: Power difference. ± 1dB Maximum Power: same as 5.5.2	0.1 dB uncertainty in AICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the AICH_Ec/Ior ratio. The absolute error of the AWGN is specified as 1.0 dB Power difference: Assume symmetric meas error ±1.0 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error. Maximum Power: Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit
8.5 Timing and Signalling Characteristics		
8.5.1 UE Transmit Timing	I_{or} ±1.0 dB I_{or1}/I_{or2} ±0.3 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio 0.3 dB uncertainty in Ior1/Ior2 based on power meter measurement after the combiner The absolute error of the Ior 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 AWGN propagation conditions	TBD	
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD	
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD	
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD	
8.6.2 FDD inter frequency measurements		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD	
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD	
8.6.3 TDD measurements	TBD	

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		
8.7.1.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.1.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.2 CPICH Ec/Io		
8.7.2~~1~~.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.2~~1~~.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.3A UTRA Carrier RSSI	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc1/Ioc2 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 System Uncertainty	Derivation of Test System Uncertainty
8.7.6 UE Rx-Tx time difference	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Rx-Tx Timing Accuracy [±0.5 chip]	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB.
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

Table F.2.1: Test Tolerances for transmitter tests.

Clause	Test Tolerance
5.2 Maximum Output Power	0.7 dB
5.3 Frequency error	10 Hz
5.4.1 Open loop power control in uplink	1.0 dB
5.4.2 Inner loop power control in the uplink - One step	0.1 dB (1 dB and 0 dB step) 0.15 dB (2 dB step) 0.2 dB (3 dB step)
5.4.2 Inner loop power control in the uplink - seven and ten steps	0.3 dB
5.4.3 Minimum Output Power	1.0 dB
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	0.4 dB
5.4.4 Out-of-synchronisation handling of output power: transmit ON/OFF time	0 ms
5.5.1 Transmit OFF power	1.0 dB
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0.7 dB / -1.0 dB Off power TT [ ] dB
5.6 Change of TFC: power control step size	0.3 dB
5.7 Power setting in uplink compressed mode:- UE output power	See subset of 5.4.2
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 domain error	1.0 dB

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

Table F.2.3: Test Tolerances for Performance Requirements.

Clause	Test Tolerance
7.2 Demodulation in Static Propagation Condition	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.3 Demodulation of DCH in multipath Fading Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.4 Demodulation of DCH in Moving Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.5 Demodulation of DCH in Birth-Death Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.1 Demodulation of DCH in open loop Transmit diversity mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.7.1 Demodulation in inter-cell soft Handover conditions	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.7.2 Combining of TPC commands Test 1	0 dB for Ior1, Ior2 0.1 dB for DPCH_Ec/Ior
7.7.2 Combining of TPC commands Test 2	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.1 Power control in downlink constant BLER target	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.2, Power control in downlink initial convergence	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.3, Power control in downlink: wind up effects	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.9 Downlink compressed mode	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.10 Blind transport format detection Tests 1, 2, 3	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.10 Blind transport format detection Tests 4, 5, 6	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior

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 $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.2.2.2 Scenario 2: Multi carrier case	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.2.3 UTRAN to GSM Cell Re-Selection	
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2
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
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.5.2 Two frequencies present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.6 Cell Re-selection in CELL_PCH	
8.3.6.1 One frequency present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.6.2 Two frequencies present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.7 Cell Re-selection in URA_PCH	
8.3.7.1 One frequency present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.7.2 Two frequencies present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
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 $\hat{I}_{or}/I_{oc}$ 0.1 dB for AICH_Ec/Ior Measurements: Power difference: ± 1dB Maximum Power: -1dB / +0.7dB
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD intra frequency measurements	
8.6.1.1 Event triggered reporting in AWGN propagation conditions	TBD
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD
8.6.2 FDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD
8.6.3 TDD measurements	
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD
8.7 Measurements Performance Requirements	TBD
8.7.1 CPICH RSCP	
8.7.1.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 1.0 dB for Ioc
8.7.1.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2 1.0 dB for Ioc
8.7.2 CPICH Ec/Io	
8.7.2~~1~~.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.2~~1~~.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.3A UTRA Carrier RSSI	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc
8.7.3B Transport channel BLER	TBD
8.7.3C UE Transmitted power	0.7 dB for mean power measurement by test system
8.7.4 SFN-CFN observed time difference	
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 Ioc [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.

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

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = +1/-3 dB Power class 2 (27 dBm) Tolerance = +1/-3 dB Power class 3 (24 dBm) Tolerance = +1/-3 dB Power class 4 (21 dBm) Tolerance = ±2 dB	0.7 dB	Formula: Upper Tolerance limit + TT 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 = ±(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

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 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 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.4 dB for $\frac{DPCCH\_E}{I_{or}}$ 0 ms for timing measurement	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 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB $\frac{DPCCH\_E_c}{I_{or}}$ 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

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
5.6 Change of TFC: power control step size	TFC step size = +5 to +9 dB		0.3 dB	Formula: Upper Tolerance limit + TT Lower Tolerance limit – TT Upper limit = -4.7 dB Lower limit = -9.3 dB	
5.7 Power setting in uplink compressed mode	Various		TBD (Subset of 5.4.2)	TBD	
5.8 Occupied Bandwidth	The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps.		0 kHz	Formula: occupied channel bandwidth: + TT occupied channel bandwidth = 5.0 MHz	
5.9 Spectrum emission mask	Minimum requirement defined in TS25.101 Table 6.10. The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher.		1.5 dB	Formula: Minimum requirement + TT Lower limit + TT Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10. Zero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements. The lower limit shall be –48.5 dBm / 3.84 MHz or which ever is higher.	
5.10 Adjacent Channel Leakage Power Ratio (ACLR)	If the adjacent 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: 32.2 dB UE channel +10 MHz or -10 MHz, ACLR limit: 42.2 dB	
5.11 Spurious Emissions				Formula: Minimum Requirement+ TT Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.	
	Frequency Band	Minimum Requirement		Frequency Band	Minimum Requirement
	9 kHz ≤ f < 150 kHz	–36dBm /1kHz	0 dB	9kHz ≤ f < 1GHz	–36dBm /1kHz
	150 kHz ≤ f < 30 MHz	–36dBm /10kHz	0 dB	150 kHz ≤ f < 30 MHz	–36dBm /10kHz
	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz	0 dB	30 MHz ≤ f < 1000 MHz	–36dBm /100kHz
	1 GHz ≤ f < 12.75 GHz	–30dBm /1MHz	0 dB	1 GHz ≤ f < 2.2 GHz	–30dBm /1MHz
			0 dB	2.2 GHz ≤ f < 4 GHz	–30dBm /1MHz
			0 dB	4 GHz ≤ f < 12.75 GHz	–30dBm /1MHz
	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz	0 dB	1893.5 MHz < f < 1919.6 MHz	–41dBm /300kHz
	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz	0 dB	925 MHz ≤ f ≤ 935 MHz	–67dBm /100kHz

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 level – TT/2 Intermod Products limits remain unchanged. CW interferer level = -40 dBc	
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	

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

<table>
<tr><th>Test</th><th colspan="2">Minimum Requirement in TS 25.101</th><th>Test Tolerance (TT)</th><th colspan="2">Test Requirement in TS 34.121</th></tr>
<tr><td>6.2 Reference sensitivity level</td><td colspan="2">Îor = -106.7 dBm / 3.84 MHz
DPCH_Ec = –117 dBm / 3.84 MHz
BER limit = 0.001</td><td>0.7 dB</td><td colspan="2">Formula: Îor+ TT
DPCH_Ec + TT
BER limit unchanged

Îor = -106 dBm / 3.84 MHz
DPCH_Ec = -116.3 dBm / 3.84 MHz</td></tr>
<tr><td>6.3 Maximum input level</td><td colspan="2">-25 dBm Ior
-19 dBc DPCH_Ec/Ior</td><td>0.7 dB</td><td colspan="2">Formula: Ior-TT

Ior = -25.7 dBm</td></tr>
<tr><td>6.4 Adjacent Channel Selectivity</td><td colspan="2">Îor = -92.7 dBm / 3.84 MHz
DPCH_Ec = –103 dBm / 3.84 MHz
Ioac (modulated) = -52 dBm/3.84 MHz
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: Îor unchanged
DPCH_Ec unchanged
Ioac – TT
BER limit unchanged

Ioac = -52 dBm/3.84 MHz</td></tr>
<tr><td>6.5 Blocking Characteristics</td><td colspan="2">See Table 6.5.3 and 6.5.4. in TS34.121
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula:
$I_{blocking}$ (modulated) - TT (dBm/3.84MHz)
$I_{blocking}$ (CW) - TT (dBm)
BER limit unchanged</td></tr>
<tr><td>6.6 Spurious Response</td><td colspan="2">Iblocking(CW) –44 dBm
Fuw:
Spurious response frequencies
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: $I_{blocking}$ (CW) - TT (dBm)
Fuw unchanged
BER limit unchanged

$I_{blocking}$(CW) = -44 dBm</td></tr>
<tr><td>6.7 Intermodulation Characteristics</td><td colspan="2">Iouw1 (CW) -46 dBm
Iouw2 (modulated) –46 dBm / 3.84 MHz
Fuw1 (offset) 10 MHz
Fuw2 (offset) 20 MHz
Ior = -103.7 dBm/3.84 MHz
DPCH_Ec = -114 dBm/3.84

BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: Ior + TT
DPCH_Ec + TT
Iouw1 level unchanged
Iouw2 level unchanged
BER limit unchanged.

Ior = -114 dBm

BER limit. = 0.001</td></tr>
<tr><td rowspan="4">6.8 Spurious Emissions</td><td colspan="2"></td><td></td><td colspan="2">Formula: Maximum level + TT
Add zero to all the values of Maximum Level in table 6.8.1.</td></tr>
<tr><td>Frequency Band</td><td>Maximum level</td><td></td><td>Frequency Band</td><td>Maximum level</td></tr>
<tr><td>9kHz ≤ f < 1GHz</td><td>-57dBm /100kHz</td><td>0 dB</td><td>9kHz ≤ f < 1GHz</td><td>-57dBm /100kHz</td></tr>
<tr><td>1GHz ≤ f ≤ 12.75GHz</td><td>-47dBm /1MHz</td><td>0 dB</td><td>1GHz ≤ f ≤ 2.2GHz</td><td>-47dBm /1MHz</td></tr>
</table>

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
			0 dB	2.2GHz < f ≤ 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.4.3: Derivation of Test Requirements (Performance tests)

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 to -16.6 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 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 to -15.0 I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ + ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -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 to -7.7 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -3.1 to -7.6 dB:

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 to -11.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -4.3 to –11.7 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 13-16	$\frac{DPCH\_E_c}{I_{or}}$ -2.2 to -15.0 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: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 $\frac{DPCH\_E_c}{I_{or}}$ -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 to -8.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -1.3 to -8.7 dB:
7.4 Demodulation of DPCH in moving propagation conditions	$\frac{DPCH\_E_c}{I_{or}}$ -10.9 to -14.5 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -10.8 to –14.4 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 to -12.6 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -18.6 to -12.5 dB:
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH\_E_c}{I_{or}}$ -16.8 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -16.7 dB:
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH\_E_c}{I_{or}}$ -18 to -18.3 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -17.9 to -18.2 dB:
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH\_E_c}{I_{or}}$ -7.5 to -9.2 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 to -2.2 dB $\frac{DPCH\_E_c}{I_{or}}$ -7.4 to -9.1 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 to –15.2 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = Ior2/Ioc = 6 to 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.8 to 0.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -5.4 to –15.4 dB:
7.7.2 Combining of TPC commands Test 1	$\frac{DPCH\_E_c}{I_{or}}$ -12 dB Ior1 and Ior2 -60dBm	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0dB for Ior1 and Ior2	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\frac{DPCH\_E_c}{I_{or}}$ = -11,9 dB: Ior1 = –60dBm Ior2 = –60dBm 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 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 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 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 to -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 to –18.9 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -8.0 to -18.8 dB:
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH\_E_c}{I_{or}}$ -13.3 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 5 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 5.6 dB $\frac{DPCH\_E_c}{I_{or}}$ -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: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 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 to -18.4 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 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 to -13.8 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -12.9 to -13.7 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
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 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT I_{oc} unchanged Ior/Ioc = 7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.2.2.2 Scenario 2: Multi carrier case	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = -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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 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 Ior/Ioc	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 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 dB Ior/Ioc = 0 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = - 5 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -5.3 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 20 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 20.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 20 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 20.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 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		
8.3.5 Cell Re-selection 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 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT I_{oc} unchanged Ior/Ioc = 7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.5.2 Two frequencies present in the neighbour list	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = -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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 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 Ior/Ioc	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 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 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT I_{oc} unchanged Ior/Ioc = 7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 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 dB I_{oc} = - 70 dBm Ior/Ioc = -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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 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 Ior/Ioc	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 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 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT I_{oc} unchanged Ior/Ioc = 7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.7.2 Two frequencies present in the neighbour list	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = -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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 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 Ior/Ioc	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 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
8.4.2 Random Access	~~TBD~~ RACH power difference nominal 3dB ± 2dB UE setting uncertainty	Measurement TT: Power difference ± 1dB Maximum Power -1dB / +0.7dB	Test parameter settings unchanged. Power measurement: Upper limit +TT Lower limit -TT
8.5 Timing and Signalling Characteristics	TBD		
8.5.1 UE Transmit Timing	TBD		
8.6 UE Measurements Procedures	TBD		
8.6.1 FDD intra frequency measurements	TBD		
8.6.1.1 Event triggered reporting in AWGN propagation conditions	TBD		
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD		
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD		
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD		
8.6.2 FDD inter frequency measurements	TBD		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD		
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD		
8.6.3 TDD measurements	TBD		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD		
8.7 Measurements Performance Requirements	TBD		
8.7.1 CPICH RSCP	~~TBD~~		

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 8.7.1.1.1.1 and table 8.7.1.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for….. _Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1 (absolute and relative): Io shall not go below -69dBm Test 2(absolute and relative): Io shall not go above -50 dBm Test 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute ±1.0 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 1.4dB Relative ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.2 Inter frequency measurement accuracy	~~TBD~~ see table 8.7.1.2.1.1 and table 8.7.1.2.1.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB for ….. Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -94 dBm Ior/Ioc + TT TT 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) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 1.1 dB
8.7.2 CPICH Ec/Io	~~TBD~~		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2~~1~~.1 Intra frequency measurements accuracy	~~TBD~~ table 8.7.2.1.1.1 and table 8.7.2.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for ….. _Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1(absolute and relative): Io shall not go above -50 dBm Test 2 (absolute and relative): Io shall not go below -87dBm Test 3 (absolute and relative): Io shall not go below -94 dBm CPICH Ec/Io shall stay in the UE accuracy ranges Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute ±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 0.4dB Relative Ioc1=Ioc2 ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2~~1~~.2 Inter frequency measurement accuracy	~~TBD~~ table 8.7.2.2.2.1 and table 8.7.2.2.2.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB for ….. Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -87 dBm Test 3: Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Ioc1=Ioc2. ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8 dB
8.7.3A UTRA Carrier RSSI	TBD		
8.7.3B Transport channel BLER	TBD		
8.7.3C UE Transmitted power	Accuracy upper limit Accuracy lower limit Depends on PUEMAX see table 8.7.3C.2.1	0.7 dB	Formula: Upper accuracy limit + TT Lower accuracy limit – TT Add and subtract TT to all the values in table 8.7.3C.2.1.
8.7.4 SFN-CFN observed time difference	TBD		
8.7.5 SFN-SFN observed time difference	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	*Io –10.9 dB = Ioc,* Test 1: Io = -94 dBm Test2 : Io = -72dBm Test3 : Io = -50dBm Timing Accuracy ± 1.5 chip	1 dB for Ioc 0.3 dB for Ior/Ioc [0.5 chip for timing accuracy]	Test 1: Io = -92.7 dBm, Ioc = -103.6 dBm Formula: $Ioc*(1-TT_{Ioc}+ (Ior/Ioc-TT_{Ior/Ioc})) \geq -94$ Test 2: unchanged (no critical RF parameters) Test 3: Io = -51.3 dBm, Ioc = -62.2 dBm Formula: $Ioc*(1+TT_{Ioc}+ (Ior/Ioc+TT_{Ior/Ioc})) \leq -50$ 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

Table F.5.1: Equipment accuracy for transmitter measurements

Test	Equipment accuracy	Test conditions
5.2 Maximum Output Power	Not critical	19 to 25 dBm
5.3 Frequency error	± 10 Hz	0 to 500 Hz.
5.4.1 Open loop power control in uplink	Not critical	-43.7 dBm to 25 dBm
5.4.2 Inner loop power control in the uplink – single step	±0.1 dB relative over a 1.5 dB range ±0.15 dB relative over a 3.0 range ±0.2 dB relative over a 4.5 dB range	+25 dBm to –50 dBm
5.4.2 Inner loop power control in the uplink – seven and ten steps	±0.3 dB relative over a 26 dB range	+25 dBm to –50 dBm
5.4.3 Minimum Output Power	Not critical	
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	±0.1 dB uncertainty in DPCCH_Ec/Ior ratio	Ratio from –16.6 dB to –28 dB
5.5.1 Transmit ON/OFF Power: UE transmit OFF power	Not critical	-56 dBm (static power)
5.5.2 Transmit ON/OFF Power: transmit ON/OFF time mask	TBD	-56 dBm (dynamic power over approx. 70 dB range)
5.6 Change of TFC: power control step size	±0.3 dB relative over a 9 dB range	+25 dBm to –50 dBm
5.7 Power setting in uplink compressed mode:- UE output power	Subset of 5.4.2	+25 dBm to –50 dBm
5.8 Occupied Bandwidth	±100 kHz	For results between 4 and 6 MHz?
5.9 Spectrum emission mask	Not critical	P_Max Accuracy applies ± 5 dB either side of UE requirements
5.10 ACLR	5 MHz offset ± 0.8 dB 10 MHz offset ± 0.8 dB	19 to 25 dBm at 5 MHz offset for results between 40 dB and 50 dB. 25 dBm at 10 MHz offset for results between 45 dB and 55 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 % (for single code)	25 dBm to –21 dBm
5.13.2 Transmit modulation: peak code domain error	±1.0dB	For readings between -10 dB to –20 dB.

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 ~~G~~F.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 Requirements for support of RRM

Table F.5.4: Equipment accuracy for RRM

Clause	Equipment accuracy	Test conditions
8.2.2 to 8.7.8	any_Ec/Ior ±0.1 dB Ior//Ioc ±0.3 dB Ioc1/Ioc2 ±0.3 dB Ioc ±1 dB	

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CHANGE REQUEST

⌘	**34.121**	**CR**	**291**	⌘ **rev**	**-**	⌘	Current version:	**5.0.0**	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Completionof annex F
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	28/07/2003
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Follow up for Annex F due to newly developped test requirements
Summary of change:	⌘	Update of uncertainties and test tolerances
Consequences if not approved:	⌘	Annex F incomplete

Clauses affected:	⌘	Annex F			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP

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

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

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 ±1,0 %.
- AC Voltage ±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

Table F.1.2: Maximum Test System Uncertainty for transmitter tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
5.2 Maximum Output Power	±0,7 dB	
5.3 Frequency Error	±10 Hz	
5.4.1 Open loop power control in uplink	±1,0 dB	The uncertainty of this test is a combination of the downlink level setting error and the uplink power measurement that are uncorrelated. Formula = SQRT(source_level_error^2 + power_meas_error^2)
5.4.2 Inner loop power control in the uplink - One step	±0,1 dB relative over a 1,5 dB range (1 dB and 0 dB step) ±0,15 dB relative over a 3,0 dB range (2 dB step) ±0,2 dB relative over a 4.5 dB range (3 dB 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	±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: $\frac{DPCCH\_E_c}{I_{or}}$	±0,4 dB	0.1 dB uncertainty in DPCCH ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the DPCCH_Ec/Ior ratio. The absolute error of the AWGN Ioc 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 = ±3*RBW. Assume 30 kHz bandwidth.
5.9 Spectrum emission mask	±1,5 dB	

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	± 2,0 dB for UE and coexistence bands for results > -60 dBm ± 3,0 dB for results < -60 dBm Outside above: f≤2.2GHz: ± 1.5 dB 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB f > 4 GHz: ±4.0 dB	
5.12 Transmit Intermodulation	± 2.2 dB	CW Interferer error is 0.7 dB for the UE power RSS with 0.7 dB for CW setting = 1.0 dB Measurement error of intermod product is 0.7 dB for UE power RSS with 0.7 dB for relative = 1.0 dB Interferer has an effect of 2 times on the intermod product so overall test uncertainty is 2*1.0 RSS with 1.0 = 2.2 dB. Apply half any excess test system uncertainty to increase the interferer level
5.13.1 Transmit modulation: EVM	±2.5 % (for single code)	
5.13.2 Transmit modulation: peak code domain error	±1.0dB	

F.1.3 Measurement of receiver

Table F.1.3: Maximum Test System Uncertainty for receiver tests

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
6.2 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/Ior ratio. 0.7 dB absolute error due to signal measurement DPCH_Ec/Ior 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: ± 1.4 dB f >= 15 MHz offset and f_b ≤ 2.2 GHz: ± [1.0] dB 2.2 GHz < f ≤ 4 GHz: ±[1.7] dB f > 4 GHz: ±[3.1] dB	Using ± 0.7 dB for signal and interferer as currently defined and 68 dB ACLR @ 10 MHz.
6.6 Spurious Response	f ≤ 2.2 GHz: ± 1.0 dB 2.2 GHz < f ≤ 4 GHz: ±1.7 dB f > 4 GHz: ±3.1 dB	

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 = $\sqrt{(2 \cdot CW\_level\_error)^2 + (\mathrm{mod}\_level\_error)^2}$ (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	± 3.0 dB for UE receive band (-78 dBm) Outside above: f≤2.2GHz: ± 2.0 dB (-57 dBm) 2.2 GHz < f ≤ 4 GHz: ± 2.0 dB (-47 dBm) f > 4 GHz: ±4.0 dB (-47 dBm)	

F.1.4 Performance requirement

Table F.1.4: Maximum Test System Uncertainty for Performance Requirements

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.2 Demodulation in Static Propagation Condition	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the DPCH_Ec/Ior ratio but is not RSS for simplicity. The absolute error of the AWGN Ioc is not important for any tests in clause 7 but is specified as 1.0 dB.
7.3 Demodulation of DCH in multipath Fading Propagation conditions	$\hat{I}_{or}/I_{oc}$ ±0.56 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Worst case gain uncertainty due to the fader from the calibrated static profile is ±0.5 dB In addition the same ±0.3 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 $(0.5^2 + 0.3^2)^{0.5}$ = 0.6 dB
7.4 Demodulation of DCH in Moving Propagation conditions	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.5 Demodulation of DCH in Birth-Death Propagation conditions	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.6.1 Demodulation of DCH in open loop Transmit diversity mode	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Worst case gain uncertainty due to the fader from the calibrated static profile is ±0.5 dB per output In addition the same ±0.3 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. Round up to 0.8 dB

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.7.1 Demodulation in inter-cell soft Handover	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.7.2 Combining of TPC commands Test 1	Ior1,Ior2 ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Test is looking for changes in power – need to allow for relaxation in criteria for power step of probably 0.1 dB to 0.4 dB
7.7.2 Combining of TPC commands Test 2	$\hat{I}_{or}/I_{oc}$ ±0.8 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.6.1
7.8.1 Power control in downlink constant BLER target	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.8.2, Power control in downlink initial convergence	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.8.3, Power control in downlink: wind up effects	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3
7.9 Downlink compressed mode	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
7.10 Blind transport format detection Tests 1, 2, 3	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.2
7.10 Blind transport format detection Tests 4, 5, 6	$\hat{I}_{or}/I_{oc}$ ±0.6 dB I_{oc} ±1.0 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	Same as 7.3

F.1.5 Requirements for support of RRM

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

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2 Idle Mode Tasks		
8.2.2 Cell Re-Selection		
8.2.2.1 Scenario 1: Single carrier case	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 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 I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc1/Ioc2 based on power meter measurement after the combiner Overall error for the CPICH_Ec/Io is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the CPICH_Ec/Ior 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 level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in CPICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc/RXLEV based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB. The absolute error of the RXLEV is specified as 1.0 dB.

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.2.3.2 Scenario 2: Only UTRA level changed	$\hat{I}_{or}/I_{oc}$ ±0.3 dB $I_{oc}/RXLEV$ ±0.3 dB I_{oc} ±1.0 dB RXLEV ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.3.1
8.2.4 FDD/TDD cell re-selection	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.3 UTRAN Connected Mode Mobility		
8.3.1 FDD/FDD Soft Handover		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 neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.5.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.3.6 Cell Re-selection in CELL_PCH		
8.3.6.1 One frequency present in the neighbour list	Same as 8.2.2.1	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 neighbour list	Same as 8.2.2.1	Same as 8.2.2.1
8.3.7.2 Two frequencies present in the neighbour list	Same as 8.2.2.2	Same as 8.2.2.2
8.4 RRC Connection Control	TBD	
8.4.1 RRC Re-establishment delay		

Clause	Maximum Test System Uncertainty	Derivation of Test System Uncertainty
8.4.2 Random Access	Settings. $\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{AICH\_E_c}{I_{or}}$ ±0.1 dB Measurements: Power difference. ± 1dB Maximum Power: same as 5.5.2	0.1 dB uncertainty in AICH_Ec ratio 0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner Overall error is the sum of the $\hat{I}_{or}/I_{oc}$ ratio error and the AICH_Ec/Ior ratio. The absolute error of the AWGN is specified as 1.0 dB Power difference: Assume symmetric meas error ±1.0 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error. Maximum Power: Assume asymmetric meas error -1.0 dB / 0.7 dB comprising RSS of: -0.7 dB downlink error plus -0.7 dB meas error, and +0.7 dB for upper limit
8.5 Timing and Signalling Characteristics		
8.5.1 UE Transmit Timing	I_{or} ±1.0 dB I_{or1}/I_{or2} ±0.3 dB $\frac{DPCH\_E_c}{I_{or}}$ ±0.1 dB	0.1 dB uncertainty in DPCH_Ec ratio 0.3 dB uncertainty in Ior1/Ior2 based on power meter measurement after the combiner The absolute error of the Ior 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 AWGN propagation conditions	TBD	
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD	
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD	
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD	
8.6.2 FDD inter frequency measurements		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD	
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD	
8.6.3 TDD measurements	TBD	

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		
8.7.1.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.1.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.2 CPICH Ec/Io		
8.7.2~~1~~.1 Intra frequency measurements accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.1
8.7.2~~1~~.2 Inter frequency measurement accuracy	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ ±0.1 dB	Same as 8.2.2.2
8.7.3A UTRA Carrier RSSI	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB I_{oc1}/I_{oc2} ±0.3 dB	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner 0.3 dB uncertainty in Ioc1/Ioc2 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 System Uncertainty	Derivation of Test System Uncertainty
8.7.6 UE Rx-Tx time difference	$\hat{I}_{or}/I_{oc}$ ±0.3 dB I_{oc} ±1.0 dB Rx-Tx Timing Accuracy [±0.5 chip]	0.3 dB uncertainty in $\hat{I}_{or}/I_{oc}$ based on power meter measurement after the combiner The absolute error of the AWGN is specified as 1.0 dB.
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

Table F.2.1: Test Tolerances for transmitter tests.

Clause	Test Tolerance
5.2 Maximum Output Power	0.7 dB
5.3 Frequency error	10 Hz
5.4.1 Open loop power control in uplink	1.0 dB
5.4.2 Inner loop power control in the uplink - One step	0.1 dB (1 dB and 0 dB step) 0.15 dB (2 dB step) 0.2 dB (3 dB step)
5.4.2 Inner loop power control in the uplink - seven and ten steps	0.3 dB
5.4.3 Minimum Output Power	1.0 dB
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	0.4 dB
5.4.4 Out-of-synchronisation handling of output power: transmit ON/OFF time	0 ms
5.5.1 Transmit OFF power	1.0 dB
5.5.2 Transmit ON/OFF time mask (dynamic case)	On power +0.7 dB / -1.0 dB Off power TT [ ] dB
5.6 Change of TFC: power control step size	0.3 dB
5.7 Power setting in uplink compressed mode:- UE output power	See subset of 5.4.2
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 domain error	1.0 dB

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

Table F.2.3: Test Tolerances for Performance Requirements.

Clause	Test Tolerance
7.2 Demodulation in Static Propagation Condition	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.3 Demodulation of DCH in multipath Fading Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.4 Demodulation of DCH in Moving Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.5 Demodulation of DCH in Birth-Death Propagation conditions	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.1 Demodulation of DCH in open loop Transmit diversity mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.7.1 Demodulation in inter-cell soft Handover conditions	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.7.2 Combining of TPC commands Test 1	0 dB for Ior1, Ior2 0.1 dB for DPCH_Ec/Ior
7.7.2 Combining of TPC commands Test 2	0.8 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.1 Power control in downlink constant BLER target	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.2, Power control in downlink initial convergence	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.8.3, Power control in downlink: wind up effects	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.9 Downlink compressed mode	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.10 Blind transport format detection Tests 1, 2, 3	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior
7.10 Blind transport format detection Tests 4, 5, 6	0.6 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for DPCH_Ec/Ior

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 $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.2.2.2 Scenario 2: Multi carrier case	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.2.3 UTRAN to GSM Cell Re-Selection	
8.2.3.1 Scenario 1: Both UTRA and GSM level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.3.2 Scenario 2: Only UTRA level changed	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc/RXLEV
8.2.4 FDD/TDD cell re-selection	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2
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
8.3.4 Inter-system Handover form UTRAN FDD to GSM	TBD
8.3.5 Cell Re-selection in CELL_FACH	
8.3.5.1 One frequency present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.5.2 Two frequencies present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.6 Cell Re-selection in CELL_PCH	
8.3.6.1 One frequency present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.6.2 Two frequencies present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.7 Cell Re-selection in URA_PCH	
8.3.7.1 One frequency present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.3.7.2 Two frequencies present in the neighbour list	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
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 $\hat{I}_{or}/I_{oc}$ 0.1 dB for AICH_Ec/Ior Measurements: Power difference: ± 1dB Maximum Power: -1dB / +0.7dB
8.5 Timing and Signalling Characteristics	
8.5.1 UE Transmit Timing	TBD
8.6 UE Measurements Procedures	
8.6.1 FDD intra frequency measurements	
8.6.1.1 Event triggered reporting in AWGN propagation conditions	TBD
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD
8.6.2 FDD inter frequency measurements	
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD
8.6.3 TDD measurements	
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD
8.7 Measurements Performance Requirements	TBD
8.7.1 CPICH RSCP	
8.7.1.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 1.0 dB for Ioc
8.7.1.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior 0.3 dB for Ioc1/Ioc2 1.0 dB for Ioc
8.7.2 CPICH Ec/Io	
8.7.2~~1~~.1 Intra frequency measurements accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.2~~1~~.2 Inter frequency measurement accuracy	0.3 dB for $\hat{I}_{or}/I_{oc}$ 0.1 dB for CPICH_Ec/Ior
8.7.3A UTRA Carrier RSSI	0.3 dB for $\hat{I}_{or}/I_{oc}$ 1.0 dB for Ioc
8.7.3B Transport channel BLER	TBD
8.7.3C UE Transmitted power	0.7 dB for mean power measurement by test system
8.7.4 SFN-CFN observed time difference	
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 Ioc [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.

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

Test	Minimum Requirement in TS 25.101	Test Tolerance (TT)	Test Requirement in TS 34.121
5.2 Maximum Output Power	Power class 1 (33 dBm) Tolerance = +1/-3 dB Power class 2 (27 dBm) Tolerance = +1/-3 dB Power class 3 (24 dBm) Tolerance = +1/-3 dB Power class 4 (21 dBm) Tolerance = ±2 dB	0.7 dB	Formula: Upper Tolerance limit + TT 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 = ±(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

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 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 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.4 dB for $\frac{DPCCH\_E}{I_{or}}$ 0 ms for timing measurement	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 dB I_{oc} - 60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB $\frac{DPCCH\_E_c}{I_{or}}$ 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

<table>
<tr><th>Test</th><th colspan="2">Minimum Requirement in TS 25.101</th><th>Test Tolerance (TT)</th><th colspan="2">Test Requirement in TS 34.121</th></tr>
<tr><td>5.6 Change of TFC: power control step size</td><td colspan="2">TFC step size = +5 to +9 dB</td><td>0.3 dB</td><td colspan="2">Formula: Upper Tolerance limit + TT
Lower Tolerance limit – TT

Upper limit = -4.7 dB
Lower limit = -9.3 dB</td></tr>
<tr><td>5.7 Power setting in uplink compressed mode</td><td colspan="2">Various</td><td>TBD (Subset of 5.4.2)</td><td colspan="2">TBD</td></tr>
<tr><td>5.8 Occupied Bandwidth</td><td colspan="2">The occupied channel bandwidth shall be less than 5 MHz based on a chip rate of 3.84 Mcps.</td><td>0 kHz</td><td colspan="2">Formula: occupied channel bandwidth: + TT

occupied channel bandwidth = 5.0 MHz</td></tr>
<tr><td>5.9 Spectrum emission mask</td><td colspan="2">Minimum requirement defined in TS25.101 Table 6.10.
The lower limit shall be –50 dBm / 3.84 MHz or which ever is higher.</td><td>1.5 dB</td><td colspan="2">Formula: Minimum requirement + TT
Lower limit + TT
Add 1.5 to Minimum requirement entries in TS25.101 Table 6.10.
Zero test tolerance is applied for Additional requirements for Band II due to FCC regulatory requirements.
The lower limit shall be –48.5 dBm / 3.84 MHz or which ever is higher.</td></tr>
<tr><td rowspan="2">5.10 Adjacent Channel Leakage Power Ratio (ACLR)</td><td colspan="2">If the adjacent channel power is greater than –50 dBm then the ACLR shall be higher than the values specified below.</td><td>0.0 dB</td><td colspan="2">Formula: Absolute power threshold + TT</td></tr>
<tr><td colspan="2">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</td><td>0.8 dB</td><td colspan="2">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</td></tr>
<tr><td rowspan="10">5.11 Spurious Emissions</td><td colspan="2"></td><td></td><td colspan="2">Formula: Minimum Requirement+ TT
Add zero to all the values of Minimum Requirements in table 5.11.1a and 5.11.1b.</td></tr>
<tr><td>Frequency Band</td><td>Minimum Requirement</td><td></td><td>Frequency Band</td><td>Minimum Requirement</td></tr>
<tr><td>9 kHz ≤ f < 150 kHz</td><td>–36dBm /1kHz</td><td>0 dB</td><td>9kHz ≤ f < 1GHz</td><td>–36dBm /1kHz</td></tr>
<tr><td>150 kHz ≤ f < 30 MHz</td><td>–36dBm /10kHz</td><td>0 dB</td><td>150 kHz ≤ f < 30 MHz</td><td>–36dBm /10kHz</td></tr>
<tr><td>30 MHz ≤ f < 1000 MHz</td><td>–36dBm /100kHz</td><td>0 dB</td><td>30 MHz ≤ f < 1000 MHz</td><td>–36dBm /100kHz</td></tr>
<tr><td rowspan="3">1 GHz ≤ f < 12.75 GHz</td><td rowspan="3">–30dBm /1MHz</td><td>0 dB</td><td>1 GHz ≤ f < 2.2 GHz</td><td>–30dBm /1MHz</td></tr>
<tr><td>0 dB</td><td>2.2 GHz ≤ f < 4 GHz</td><td>–30dBm /1MHz</td></tr>
<tr><td>0 dB</td><td>4 GHz ≤ f < 12.75 GHz</td><td>–30dBm /1MHz</td></tr>
<tr><td>1893.5 MHz < f < 1919.6 MHz</td><td>–41dBm /300kHz</td><td>0 dB</td><td>1893.5 MHz < f < 1919.6 MHz</td><td>–41dBm /300kHz</td></tr>
<tr><td>925 MHz ≤ f ≤ 935 MHz</td><td>–67dBm /100kHz</td><td>0 dB</td><td>925 MHz ≤ f ≤ 935 MHz</td><td>–67dBm /100kHz</td></tr>
</table>

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 level – TT/2 Intermod Products limits remain unchanged. CW interferer level = -40 dBc	
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	

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

<table>
<tr><th>Test</th><th colspan="2">Minimum Requirement in TS 25.101</th><th>Test Tolerance (TT)</th><th colspan="2">Test Requirement in TS 34.121</th></tr>
<tr><td>6.2 Reference sensitivity level</td><td colspan="2">Îor = -106.7 dBm / 3.84 MHz
DPCH_Ec = –117 dBm / 3.84 MHz
BER limit = 0.001</td><td>0.7 dB</td><td colspan="2">Formula: Îor+ TT
DPCH_Ec + TT
BER limit unchanged

Îor = -106 dBm / 3.84 MHz
DPCH_Ec = -116.3 dBm / 3.84 MHz</td></tr>
<tr><td>6.3 Maximum input level</td><td colspan="2">-25 dBm Ior
-19 dBc DPCH_Ec/Ior</td><td>0.7 dB</td><td colspan="2">Formula: Ior-TT

Ior = -25.7 dBm</td></tr>
<tr><td>6.4 Adjacent Channel Selectivity</td><td colspan="2">Îor = -92.7 dBm / 3.84 MHz
DPCH_Ec = –103 dBm / 3.84 MHz
Ioac (modulated) = -52 dBm/3.84 MHz
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: Îor unchanged
DPCH_Ec unchanged
Ioac – TT
BER limit unchanged

Ioac = -52 dBm/3.84 MHz</td></tr>
<tr><td>6.5 Blocking Characteristics</td><td colspan="2">See Table 6.5.3 and 6.5.4. in TS34.121
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula:
$I_{blocking}$ (modulated) - TT (dBm/3.84MHz)
$I_{blocking}$ (CW) - TT (dBm)
BER limit unchanged</td></tr>
<tr><td>6.6 Spurious Response</td><td colspan="2">Iblocking(CW) –44 dBm
Fuw:
Spurious response frequencies
BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: $I_{blocking}$ (CW) - TT (dBm)
Fuw unchanged
BER limit unchanged

$I_{blocking}$(CW) = -44 dBm</td></tr>
<tr><td>6.7 Intermodulation Characteristics</td><td colspan="2">Iouw1 (CW) -46 dBm
Iouw2 (modulated) –46 dBm / 3.84 MHz
Fuw1 (offset) 10 MHz
Fuw2 (offset) 20 MHz
Ior = -103.7 dBm/3.84 MHz
DPCH_Ec = -114 dBm/3.84

BER limit = 0.001</td><td>0 dB</td><td colspan="2">Formula: Ior + TT
DPCH_Ec + TT
Iouw1 level unchanged
Iouw2 level unchanged
BER limit unchanged.

Ior = -114 dBm

BER limit. = 0.001</td></tr>
<tr><td rowspan="4">6.8 Spurious Emissions</td><td colspan="2"></td><td></td><td colspan="2">Formula: Maximum level + TT
Add zero to all the values of Maximum Level in table 6.8.1.</td></tr>
<tr><td>Frequency Band</td><td>Maximum level</td><td></td><td>Frequency Band</td><td>Maximum level</td></tr>
<tr><td>9kHz ≤ f < 1GHz</td><td>-57dBm /100kHz</td><td>0 dB</td><td>9kHz ≤ f < 1GHz</td><td>-57dBm /100kHz</td></tr>
<tr><td>1GHz ≤ f ≤ 12.75GHz</td><td>-47dBm /1MHz</td><td>0 dB</td><td>1GHz ≤ f ≤ 2.2GHz</td><td>-47dBm /1MHz</td></tr>
</table>

Test	Minimum Requirement in TS 25.101		Test Tolerance (TT)	Test Requirement in TS 34.121	
			0 dB	2.2GHz < f ≤ 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.4.3: Derivation of Test Requirements (Performance tests)

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 to -16.6 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = - 1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 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 to -15.0 I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ + ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -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 to -7.7 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -3.1 to -7.6 dB:

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 to -11.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 dB to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -4.3 to –11.7 dB:
7.3 Demodulation of DPCH in multi-path fading propagation conditions Tests 13-16	$\frac{DPCH\_E_c}{I_{or}}$ -2.2 to -15.0 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: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 $\frac{DPCH\_E_c}{I_{or}}$ -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 to -8.8 dB I_{oc} = -60 dBm $\hat{I}_{or}/I_{oc}$ = 6 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.6 to –2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -1.3 to -8.7 dB:
7.4 Demodulation of DPCH in moving propagation conditions	$\frac{DPCH\_E_c}{I_{or}}$ -10.9 to -14.5 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -10.8 to –14.4 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 to -12.6 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -18.6 to -12.5 dB:
7.6.1 Demodulation of DPCH in transmit diversity propagation conditions	$\frac{DPCH\_E_c}{I_{or}}$ -16.8 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -16.7 dB:
7.6.2 Demodulation of DCH in closed loop Transmit diversity mode	$\frac{DPCH\_E_c}{I_{or}}$ -18 to -18.3 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -17.9 to -18.2 dB:
7.6.3, Demodulation of DCH in site selection diversity Transmission power control mode	$\frac{DPCH\_E_c}{I_{or}}$ -7.5 to -9.2 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 to -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 to -2.2 dB $\frac{DPCH\_E_c}{I_{or}}$ -7.4 to -9.1 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 to –15.2 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = Ior2/Ioc = 6 to 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 6.8 to 0.8 dB $\frac{DPCH\_E_c}{I_{or}}$ -5.4 to –15.4 dB:
7.7.2 Combining of TPC commands Test 1	$\frac{DPCH\_E_c}{I_{or}}$ -12 dB Ior1 and Ior2 -60dBm	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0dB for Ior1 and Ior2	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\frac{DPCH\_E_c}{I_{or}}$ = -11,9 dB: Ior1 = –60dBm Ior2 = –60dBm 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 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 0 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.8 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 0.8 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 I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 9 to -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT 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 to –18.9 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -8.0 to -18.8 dB:
7.8.3, Power control in downlink: wind up effects	$\frac{DPCH\_E_c}{I_{or}}$ -13.3 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = 5 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 5.6 dB $\frac{DPCH\_E_c}{I_{or}}$ -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: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = 9.6 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 to -18.4 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -1 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.3 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -0.7 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 to -13.8 dB I_{oc} = - 60 dBm $\hat{I}_{or}/I_{oc}$ = -3 dB	0.1 dB for $\frac{DPCH\_E_c}{I_{or}}$ 0.6 dB for $\hat{I}_{or}/I_{oc}$	Formulas: $\frac{DPCH\_E_c}{I_{or}}$ = ratio + TT $\hat{I}_{or}/I_{oc}$ = ratio + TT I_{oc} unchanged $\hat{I}_{or}/I_{oc}$ = -2.4 dB $\frac{DPCH\_E_c}{I_{or}}$ -12.9 to -13.7 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
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 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT I_{oc} unchanged Ior/Ioc = 7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.2.2.2 Scenario 2: Multi carrier case	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = -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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 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 Ior/Ioc	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 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 dB Ior/Ioc = 0 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 0.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = - 5 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ - TT Ior/Ioc = -5.3 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.2.3.2 Scenario 2: Only UTRA level changed	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 20 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 20.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB Ior/Ioc = 20 dB	0.1 dB for $\frac{CPICH\_E_c}{I_{or}}$ 0.3 dB for Ior/Ioc 0.3 dB for Ioc/RXLEV	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT $(Ioc/Rxlev)_{test\ requirement}$ = $(Ioc/Rxlev)_{minimum\ requirement}$ + TT Ior/Ioc = 20.3 dB $\frac{CPICH\_E_c}{I_{or}}$ = -9.9 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		
8.3.5 Cell Re-selection 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 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT I_{oc} unchanged Ior/Ioc = 7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.5.2 Two frequencies present in the neighbour list	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = -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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 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 Ior/Ioc	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 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 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT I_{oc} unchanged Ior/Ioc = 7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 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 dB I_{oc} = - 70 dBm Ior/Ioc = -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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 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 Ior/Ioc	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 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 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT I_{oc} unchanged Ior/Ioc = 7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio + TT Ior/Ioc = ratio + TT Ioc unchanged Ior/Ioc = 10.57 dB $\frac{CPICH\_E_c}{I_{or}}$ -9.9 dB:
8.3.7.2 Two frequencies present in the neighbour list	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = -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 Ior/Ioc	Formulas: $\frac{CPICH\_E_c}{I_{or}}$ = ratio - TT Ior/Ioc = ratio - TT Ioc unchanged Ioc ratio unchanged Ior/Ioc = -3.7 dB $\frac{CPICH\_E_c}{I_{or}}$ -10.1 dB:
	$\frac{CPICH\_E_c}{I_{or}}$ = -10 dB I_{oc} = - 70 dBm Ior/Ioc = 2.2 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 Ior/Ioc	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 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
8.4.2 Random Access	~~TBD~~ RACH power difference nominal 3dB ± 2dB UE setting uncertainty	Measurement TT: Power difference ± 1dB Maximum Power -1dB / +0.7dB	Test parameter settings unchanged. Power measurement: Upper limit +TT Lower limit -TT
8.5 Timing and Signalling Characteristics	TBD		
8.5.1 UE Transmit Timing	TBD		
8.6 UE Measurements Procedures	TBD		
8.6.1 FDD intra frequency measurements	TBD		
8.6.1.1 Event triggered reporting in AWGN propagation conditions	TBD		
8.6.1.2 Event triggered reporting of multiple neighbours in AWGN propagation condition	TBD		
8.6.1.3 Event triggered reporting of two detectable neighbours in AWGN propagation condition	TBD		
8.6.1.4 Correct reporting of neighbours in fading propagation condition	TBD		
8.6.2 FDD inter frequency measurements	TBD		
8.6.2.1 Correct reporting of neighbours in AWGN propagation condition	TBD		
8.6.2.2 Correct reporting of neighbours in Fading propagation condition	TBD		
8.6.3 TDD measurements	TBD		
8.6.3.1Correct reporting of TDD neighbours in AWGN propagation condition	TBD		
8.7 Measurements Performance Requirements	TBD		
8.7.1 CPICH RSCP	~~TBD~~		

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 8.7.1.1.1.1 and table 8.7.1.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for….._Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1 (absolute and relative): Io shall not go below -69dBm Test 2(absolute and relative): Io shall not go above -50 dBm Test 3 (absolute and relative): Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute ±1.0 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 1.4dB Relative ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.1.2 Inter frequency measurement accuracy	~~TBD~~ see table 8.7.1.2.1.1 and table 8.7.1.2.1.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB for ….. Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -94 dBm Ior/Ioc + TT TT 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) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 1.1 dB
8.7.2 CPICH Ec/Io	~~TBD~~		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.2~~1~~.1 Intra frequency measurements accuracy	~~TBD~~ table 8.7.2.1.1.1 and table 8.7.2.1.1.2	±1 dB for Ioc ±0.3 dB for Ior/Ioc ±0.1dB for ….. _Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1(absolute and relative): Io shall not go above -50 dBm Test 2 (absolute and relative): Io shall not go below -87dBm Test 3 (absolute and relative): Io shall not go below -94 dBm CPICH Ec/Io shall stay in the UE accuracy ranges Ior/Ioc + TT TT on top of UE measurement accuracy: Absolute ±0.3 dB for Ior/Ioc ±0.1dB for CPICH_Ec/Ior ∑ 0.4dB Relative Ioc1=Ioc2 ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8dB

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.~~1~~2.2 Inter frequency measurement accuracy	~~TBD~~ table 8.7.2.2.2.1 and table 8.7.2.2.2.2	±1 dB for Ioc ±0.3 dB for Ioc1/Ioc2 ±0.3 dB for Ior/Ioc ±0.1dB for ….. Ec/Ior	Any TT applied to the nominal setting shall fulfil: Test 1: Io shall not go above -50 dBm Test 2: Io shall not go below -87 dBm Test 3: Io shall not go below -94 dBm Ior/Ioc + TT TT on top of UE measurement accuracy: Ioc1=Ioc2. ±0.3 dB for Ior/Ioc (cell1) ±0.3 dB for Ior/Ioc (cell2) ±0.1dB for CPICH_Ec/Ior (cell1) ±0.1dB for CPICH_Ec/Ior (cell2) ∑ 0.8 dB
8.7.3A UTRA Carrier RSSI	TBD		
8.7.3B Transport channel BLER	TBD		
8.7.3C UE Transmitted power	Accuracy upper limit Accuracy lower limit Depends on PUEMAX see table 8.7.3C.2.1	0.7 dB	Formula: Upper accuracy limit + TT Lower accuracy limit – TT Add and subtract TT to all the values in table 8.7.3C.2.1.
8.7.4 SFN-CFN observed time difference	TBD		
8.7.5 SFN-SFN observed time difference	TBD		

Test	Test Parameters in TS 25.133	Test Tolerance (TT)	Test Requirement in TS 34.121
8.7.6 UE Rx-Tx time difference	*Io –10.9 dB = Ioc,* Test 1: Io = -94 dBm Test2 : Io = -72dBm Test3 : Io = -50dBm Timing Accuracy ± 1.5 chip	1 dB for Ioc 0.3 dB for Ior/Ioc [0.5 chip for timing accuracy]	Test 1: Io = -92.7 dBm, Ioc = -103.6 dBm Formula: $Ioc*(1-TT_{Ioc}+ (Ior/Ioc-TT_{Ior/Ioc})) \geq -94$ Test 2: unchanged (no critical RF parameters) Test 3: Io = -51.3 dBm, Ioc = -62.2 dBm Formula: $Ioc*(1+TT_{Ioc}+ (Ior/Ioc+TT_{Ior/Ioc})) \leq -50$ 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

Table F.5.1: Equipment accuracy for transmitter measurements

Test	Equipment accuracy	Test conditions
5.2 Maximum Output Power	Not critical	19 to 25 dBm
5.3 Frequency error	± 10 Hz	0 to 500 Hz.
5.4.1 Open loop power control in uplink	Not critical	-43.7 dBm to 25 dBm
5.4.2 Inner loop power control in the uplink – single step	±0.1 dB relative over a 1.5 dB range ±0.15 dB relative over a 3.0 range ±0.2 dB relative over a 4.5 dB range	+25 dBm to –50 dBm
5.4.2 Inner loop power control in the uplink – seven and ten steps	±0.3 dB relative over a 26 dB range	+25 dBm to –50 dBm
5.4.3 Minimum Output Power	Not critical	
5.4.4 Out-of-synchronisation handling of output power: $\frac{DPCCH\_E_c}{I_{or}}$	±0.1 dB uncertainty in DPCCH_Ec/Ior ratio	Ratio from –16.6 dB to –28 dB
5.5.1 Transmit ON/OFF Power: UE transmit OFF power	Not critical	-56 dBm (static power)
5.5.2 Transmit ON/OFF Power: transmit ON/OFF time mask	TBD	-56 dBm (dynamic power over approx. 70 dB range)
5.6 Change of TFC: power control step size	±0.3 dB relative over a 9 dB range	+25 dBm to –50 dBm
5.7 Power setting in uplink compressed mode:- UE output power	Subset of 5.4.2	+25 dBm to –50 dBm
5.8 Occupied Bandwidth	±100 kHz	For results between 4 and 6 MHz?
5.9 Spectrum emission mask	Not critical	P_Max Accuracy applies ± 5 dB either side of UE requirements
5.10 ACLR	5 MHz offset ± 0.8 dB 10 MHz offset ± 0.8 dB	19 to 25 dBm at 5 MHz offset for results between 40 dB and 50 dB. 25 dBm at 10 MHz offset for results between 45 dB and 55 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 % (for single code)	25 dBm to –21 dBm
5.13.2 Transmit modulation: peak code domain error	±1.0dB	For readings between -10 dB to –20 dB.

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 ~~G~~F.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 Requirements for support of RRM

Table F.5.4: Equipment accuracy for RRM

Clause	Equipment accuracy	Test conditions
8.2.2 to 8.7.8	any_Ec/Ior ±0.1 dB Ior//Ioc ±0.3 dB Ioc1/Ioc2 ±0.3 dB Ioc ±1 dB	

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Munich, Germany, July 28th – August 1st 2003

CR-Form-v7

CHANGE REQUEST

⌘	**34.121**	**CR**	**292**	⌘**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 ⌘ symbols.*

Proposed change affects:	UICC apps⌘	[ ]	ME	[X]	Radio Access Network	[ ]	Core Network [ ]

Title:	⌘	CR to 34.121 Rel-4; Correction to CRC bit for reference measurement channel using RLc-TM for DTCH, transport channel parameters		
Source:	⌘	T1		
Work item code:	⌘		***Date:*** ⌘	16/06/2003
Category:	⌘	A	***Release:*** ⌘	Rel-4
		Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use one of the following releases:* *2 (GSM Phase 2)* *R96 (Release 1996)* *R97 (Release 1997)* *R98 (Release 1998)* *R99 (Release 1999)* *Rel-4 (Release 4)* *Rel-5 (Release 5)* *Rel-6 (Release 6)*

Reason for change:	⌘	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:	⌘	The size of CRC was changed to 12 bits.
Consequences if not approved:	⌘	The test case would be incorrect.

Clauses affected:	⌘	.4.2				
		Y	**N**			
Other specs affected:	⌘			Other core specifications	⌘	
				Test specifications		
				O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

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

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

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.

Table C.4.2.1: DL reference measurement channel physical parameters for BTFD

Parameter	Rate 1	Rate 2	Rate 3	Unit
Information bit rate	12,2	7,95	1,95	kbps
DPCH		30		ksps
Slot Format #i		8		-
TFCI		Off		-
Power offsets PO1, PO2 and PO3		0		dB
DTX position		Fixed		-

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

Higher Layer	RAB/Signalling RB		SRB
RLC	Logical channel type		DCCH
	RLC mode		UM/AM
	Payload sizes, bit		88/80
	Max data rate, bps		2200/2000
	PDU header, bit		8/16
	TrD PDU header, bit		N/A
MAC	MAC header, bit		4
	MAC multiplexing		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 type		Convolution Coding
	Coding Rate		1/3
	CRC, bit		12
	Max number of bits/TTI after channel coding		360
	Uplink: Max number of bits/radio frame before rate matching		90
	RM attribute		256

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

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

	PDU header, bit		N/A
	TrD PDU header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	Transport Channel Identity		1
	TB sizes, bit		244, 204, 159, 148, 134, 118, 103, 95, 39,0
	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 Rate		1/3
	CRC, bit		~~0~~12
	RM attribute		256

3GPP TSG-T1 Meeting #20 | ***Tdoc ⌘T1-030872***
Munich, Germany, July 28th – August 1st 2003

CR-Form-v7

CHANGE REQUEST

⌘ **34.121 CR 293** ⌘**rev** **-** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	CR to 34.121 Rel-5; Correction to CRC bit for reference measurement channel using RLc-TM for DTCH, transport channel parameters
Source:	⌘	T1
Work item code:	⌘	
Date:	⌘	16/06/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
- *2 (GSM Phase 2)*
- *R96 (Release 1996)*
- *R97 (Release 1997)*
- *R98 (Release 1998)*
- *R99 (Release 1999)*
- *Rel-4 (Release 4)*
- *Rel-5 (Release 5)*
- *Rel-6 (Release 6)*

Reason for change:	⌘	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:	⌘	The size of CRC was changed to 12 bits.
Consequences if not approved:	⌘	The test case would be incorrect.

Clauses affected:	⌘	C.4.2				
		Y	**N**			
Other specs affected:	⌘			Other core specifications	⌘	
				Test specifications		
				O&M Specifications		
Other comments:	⌘					

How to create CRs using this form:

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

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

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

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.

Table C.4.2.1: DL reference measurement channel physical parameters for BTFD

Parameter	Rate 1	Rate 2	Rate 3	Unit
Information bit rate	12,2	7,95	1,95	kbps
DPCH	30			ksps
Slot Format #i	8			-
TFCI	Off			-
Power offsets PO1, PO2 and PO3	0			dB
DTX position	Fixed			-

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

Higher Layer	RAB/Signalling RB		SRB
RLC	Logical channel type		DCCH
	RLC mode		UM/AM
	Payload sizes, bit		88/80
	Max data rate, bps		2200/2000
	PDU header, bit		8/16
	TrD PDU header, bit		N/A
MAC	MAC header, bit		4
	MAC multiplexing		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 type		Convolution Coding
	Coding Rate		1/3
	CRC, bit		12
	Max number of bits/TTI after channel coding		360
	Uplink: Max number of bits/radio frame before rate matching		90
	RM attribute		256

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

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

	PDU header, bit		N/A
	TrD PDU header, bit		0
MAC	MAC header, bit		0
	MAC multiplexing		N/A
Layer 1	TrCH type		DCH
	Transport Channel Identity		1
	TB sizes, bit		244, 204, 159, 148, 134, 118, 103, 95, 39,0
	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 Rate		1/3
	CRC, bit		~~0~~12
	RM attribute		256

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

Tdoc ⌘T1-031277

CR-Form-v7

CHANGE REQUEST

⌘	34.121	CR	296	⌘ rev	-	⌘	Current version:	5.0.0	⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Introduction of the phase discontinuity test
Source:	⌘	T1
Work item code:	⌘	TEI5
Date:	⌘	3/09/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Introduction of the phase discontinuity test
Summary of change:	⌘	
Consequences if not approved:	⌘	UE with phase discontinuity error exceeding the minimum requirements will not be testable and may harm the network.

Clauses affected:	⌘	5.13.3			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This test is introduced for release 5 and later releases			

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

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

5.13.3 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.

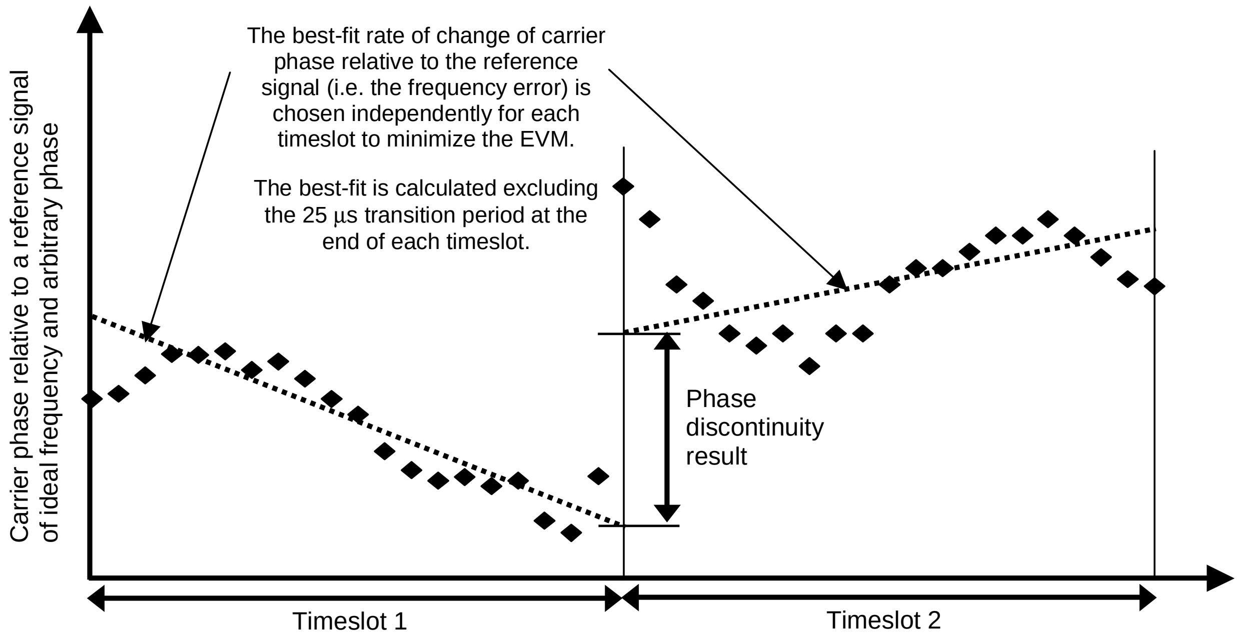

Figure 5.13.3.1 Graphical description of phase discontinuity

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	1

Table 5.13.2: Phase discontinuity minimum requirement

Phase discontinuity Δθ in degrees	**Maximum allowed rate of occurrence in Hz**
$\Delta\theta \leq 30$	1500
$30 < \Delta\theta \leq 60$	300
$\Delta\theta > 60$	0

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

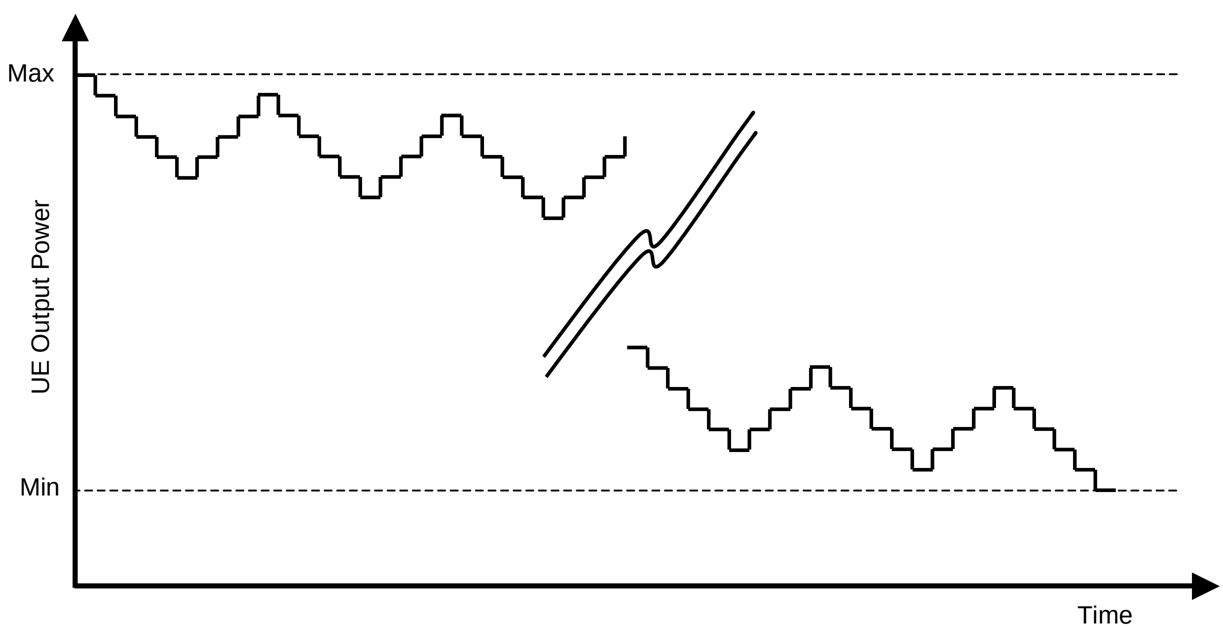

Figure 5.13.3.4 Five down four up hysteresis test pattern

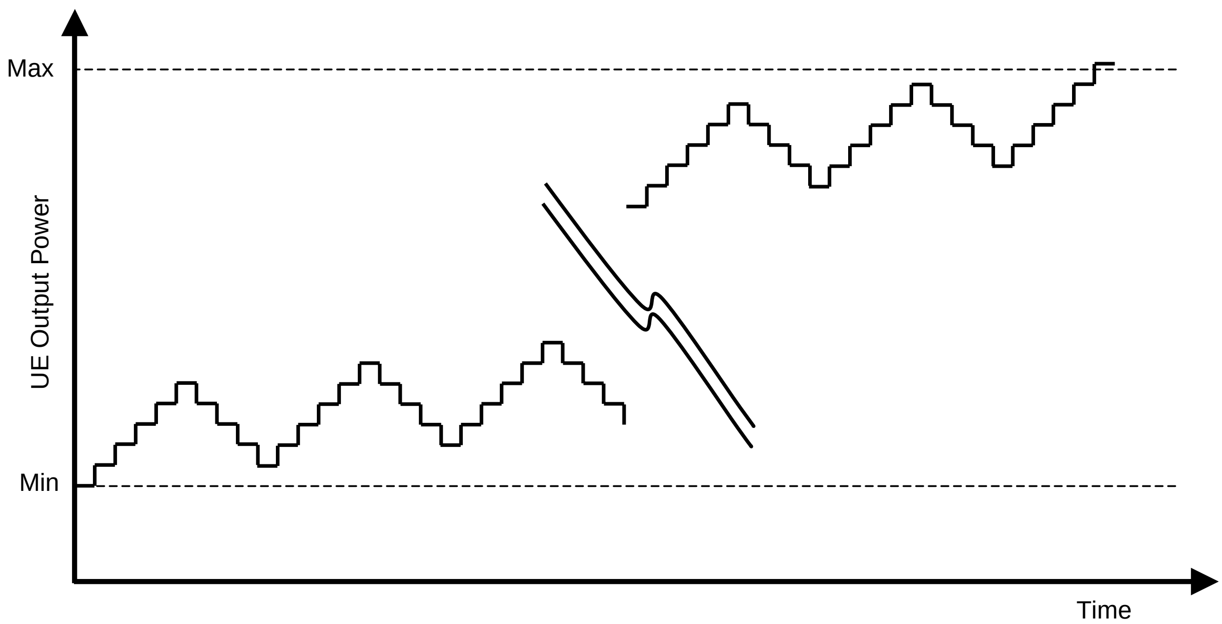

Figure 5.13.3.5 Five up four down hysteresis test pattern

1) Set the power of the UE to max power using continuous up TPC commands.

2) Transmit a sequence of five down four up TPC commands as shown in figure 5.13.3.4 until the UE has reached the minimum power defined in 5.4.3.

3) During step 2 starting with the slot before the first down power step, measure the EVM of each slot and the phase discontinuity to the next slot.

4) Transmit a sequence of five up four down TPC commands as shown in figure 5.13.3.5 until the UE has reached its maximum power.

5) During step 4 starting with the slot before the first up power step, measure the EVM of each slot and the phase discontinuity to the next slot.

NOTE: In order to make it practical to measure the entire power control dynamic range (between min power threshold and max power threshold with suitable margins), it is permissible to segment the power control sequences into smaller subsequences. Except when within 5 dB of the upper or lower thresholds, segmentation will require sufficient overlap such that every power step in one direction is followed by four steps in the other direction.

5.13.3.5 Test requirements

a) During 5.13.3.4.2 step 3, and step 5, the EVM of every measured slot which is above –20 dBm shall not exceed 17.5%

b) During 5.13.3.4.2 step 3, and step 5, the Frequency error of every measured slot shall not exceed 0.1 PPM.

c) During 5.13.3.4.2 step 3, and step 5; the phase discontinuity measurements made between any two adjacent slots shall be less than or equal to 30 degrees. If a phase discontinuity measurement is greater than 30 degrees and less than or equal to 60 degrees then the next four measurements shall be less than or equal to 30 degrees. No measurement shall exceed 60 degrees.

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.