

TSG RAN Meeting #17
 Biarritz, France, 3 - 6 September, 2002

RP-020481

Title CRs (Rel-4 and Rel-5 Category A) to TS 25.133
Source TSG RAN WG4
Agenda Item 7.4.4

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-021200	25.133	464		F	Rel-4	4.5.0	Removal of AMR speech codec requirement	TEI4
R4-021340	25.133	468		A	Rel-5	5.3.0	Removal of AMR speech codec requirement	TEI4
R4-021232	25.133	466		F	Rel-4	4.5.0	Completion of FDD-1.28 Mcps TDD	LCRTDD-RF
R4-021233	25.133	467		A	Rel-5	5.3.0	Completion of FDD-1.28 Mcps TDD	LCRTDD-RF

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST⌘ **25.133 CR 464** ⌘ rev ⌘ Current version: **4.5.0** ⌘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:	⌘ Removal of AMR speech codec requirement		
Source:	⌘ RAN WG4		
Work item code:	⌘ TEI4	Date:	⌘ 21/08/2002
Category:	⌘ F	Release:	⌘ Rel-4
Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:	
F (correction)		2 (GSM Phase 2)	
A (corresponds to a correction in an earlier release)		R96 (Release 1996)	
B (addition of feature),		R97 (Release 1997)	
C (functional modification of feature)		R98 (Release 1998)	
D (editorial modification)		R99 (Release 1999)	
Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)	
		Rel-5 (Release 5)	
		Rel-6 (Release 6)	

Reason for change:	⌘ The current version of TS 25.133 is not aligned with TS 26.103. According to TS 26.103, UMTS AMR2 is the default Codec Type in all terminals of Rel-4 and onwards. There is no need anymore to have UMTS AMR requirement included.
Summary of change:	⌘ 1- the requirement related to the UMTS AMR codec is removed from the table 6.1 2- reference TS 26.103 is added
Consequences if not approved:	⌘ The TS 25.133 will remain inconsistent with TS 26.103.

Clauses affected:	⌘ 2 – 6.4.2										
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘ <input type="text"/>
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
		Test specifications									
		O&M Specifications									
Other comments:	⌘ - Equivalent CRs in other Releases: CR468 cat. A to 25.133 v5.3.0										

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*.

- [1] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".
- [2] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".
- [3] 3GPP TS 25.101: "UE Radio transmission and reception (FDD)".
- [4] 3GPP TS 25.104: "BTS Radio transmission and reception (FDD)".
- [5] 3GPP TS 25.102: "UE Radio transmission and reception (TDD)".
- [6] 3GPP TS 25.105: "BTS Radio transmission and reception (TDD)".
- [7] 3GPP TS 25.212: "Multiplexing and channel coding (FDD)".
- [8] 3GPP TS 25.141: "Base station conformance testing (FDD)".
- [9] 3GPP TS 25.142: "Base station conformance testing (TDD)".
- [10] 3GPP TS 25.113: "Base station EMC".
- [11] 3GPP TR 25.942: "RF System scenarios".
- [12] 3GPP TR 25.922: "RRM Strategies".
- [13] 3GPP TS 25.215: "Physical Layer Measurements (FDD)".
- [14] 3GPP TS 25.225: "Physical Layer Measurements (TDD)".
- [15] 3GPP TS 25.302: "Services provided by Physical Layer".
- [16] 3GPP TS 25.331: "RRC Protocol Specification".
- [17] ETSI ETR 273-1-2: "Electromagnetic compatibility and Radio spectrum Matters (ERM); 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"
- [18] 3GPP TS 25.214: "Physical layer procedures (FDD)"
- [19] 3GPP TS 25.321: "MAC protocol specification"
- [20] 3GPP TS 25.303: "Interlayer Procedures in Connected Mode"
- [21] 3GPP TS 45.008: "Digital cellular telecommunications system (Phase 2+); Radio subsystem link control"
- [22] 3GPP TS 45.005: "Digital cellular telecommunications system (Phase 2+); Radio transmission and reception"

[23] 3GPP TS 26.103: "Speech Codec List for GSM and UMTS"

...

6.4.2 Requirements

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

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

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

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

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

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

The definitions of the parameters X,Y and Z which shall be used when evaluating the *Elimination* and the *Recovery* criteria when no compressed mode patterns are activated are given in Table 6.0.

Table 6.0: X, Y, Z parameters for TFC selection

X	Y	Z
15	30	30

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

$$(T_{\text{notify}} + T_{\text{modify}} + T_{\text{L1_proc}})$$

where:

T_{notify} equals 15 ms, and

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

$T_{\text{L1_proc}}$ equals 15 ms, and

$T_{\text{adapt_max}}$ equals $\text{MAX}(T_{\text{adapt_1}}, T_{\text{adapt_2}}, \dots, T_{\text{adapt_N}})$, and

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

$T_{\text{adapt_n}}$ equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. Table 6.1 defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms.

Table 6.1: T_{adapt}

Service	T_{adapt} [ms]
UMTS_AMR	40
UMTS_AMR2	60

Table 6.1: T_{adapt}

Service	T_{adapt} [ms]
UMTS_AMR2	60

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

The Maximum UE transmitter power is defined as follows

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

where

Maximum allowed UL TX Power is set by UTRAN and defined in [16], and

UE maximum transmit power is defined by the UE power class, and specified in [3].

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST⌘ **25.133 CR 466** ⌘ rev **4.5.0** ⌘ Current version: **4.5.0** ⌘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:	⌘ Completion of FDD-1.28 Mcps TDD		
Source:	⌘ RAN WG4		
Work item code:	⌘ LCRTDD-RF	Date:	⌘ 21/08/2002
Category:	⌘ F	Release:	⌘ Rel-4
Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:	
F (correction)		2 (GSM Phase 2)	
A (corresponds to a correction in an earlier release)		R96 (Release 1996)	
B (addition of feature),		R97 (Release 1997)	
C (functional modification of feature)		R98 (Release 1998)	
D (editorial modification)		R99 (Release 1999)	
Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)	
		Rel-5 (Release 5)	
		Rel-6 (Release 6)	

Reason for change: ⌘ Test Ceases in Annex A do not reflect 1.28Mcps TDD Option Parameters.**Summary of change:** ⌘ Addition of missing side condition to and inclusion of missing parameters to 1.28 Mcps TDD Option requirements and test cases applicable to terminals supporting this capability:

- UE procedures for TDD measurements: inclusion of side condition definitions appropriate to 1.28 Mcps TDD cells with same compressed mode patterns and requirements on Identification of a new cell, P-CCPCH RSCP measurement period and RRC reporting for requirements in CELL_DCH and CELL_FACH State. The Side Conditions for UEs, which support 1.28Mcps TDD are chosen in line with 25.123 requirements.
- For the Absolute accuracy requirements on P-CCPCH RSCP measurement are splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct the I_o units for [dBm/1.28MHz] and the side conditions for 1.28Mcps TDD Option to

$$P\text{-CCPCH } E_c/I_o \geq -8 \text{ dB}$$

$$DwPCH_E_c/I_o \geq -5 \text{ dB}$$
 Measurement report mapping remains the same for both TDD Options.
- FDD/TDD Cell Re-selection test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for DwPCH instead of SCH parameters and for I_o units to be [dBm/1.28MHz] in LCR case.
- FDD/TDD Handover test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for DwPCH instead of SCH parameters and for I_o units to be [dBm/1.28MHz] in LCR case.
- UE procedures TDD measurements test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for the TDD cell for DwPCH

		instead of SCH parameters and for Io units to be [dBm/1.28MHz] in LCR case.
		- P-CCPCH RSCP Measurements test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for the TDD cell for DwPCH instead of SCH parameters and for Io units to be [dBm/1.28MHz] in LCR case.
Consequences if not approved:	⌘	There could be misleading implementation of Test Requirements for 1.28Mcps TDD Option Test Cases in Test Specification. Isolated Impact Analysis: Side conditions and parameters on requirements for 1.28 Mcps TDD have been modified. Would not affect the implementation behaving like indicated in the CR, would affect the implementation not behaving like indicated in the CR.

Clauses affected:	⌘	8.1.2.4.1, 8.4.2.4.1, 9.1.11.1, A.4.4.1, A.5.3.1, A.8.3.1.1, A.9.1.8.1.1																	
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> </table>	Y	N		X	X			X	<table border="1"> <tr> <td>Other core specifications</td> <td>⌘</td> <td></td> </tr> <tr> <td>Test specifications</td> <td></td> <td>34.121</td> </tr> <tr> <td>O&M Specifications</td> <td></td> <td></td> </tr> </table>	Other core specifications	⌘		Test specifications		34.121	O&M Specifications		
Y	N																		
	X																		
X																			
	X																		
Other core specifications	⌘																		
Test specifications		34.121																	
O&M Specifications																			
Other comments:	⌘	Equivalent CRs in other Releases: CR467 cat. A to 25.133 v5.3.0																	

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.

Contents

Foreword.....	11
1 Scope.....	12
2 References.....	12
3 Definitions, symbols and abbreviations.....	13
3.1 Definitions.....	13
3.2 Symbols.....	13
3.3 Abbreviations.....	14
3.4 Test tolerances.....	15
4 Idle Mode Tasks.....	15
4.1 Cell Selection.....	15
4.1.1 Introduction.....	15
4.2 Cell Re-selection.....	15
4.2.1 Introduction.....	15
4.2.2 Requirements.....	15
4.2.2.1 Measurement and evaluation of cell selection criteria S of serving cell.....	15
4.2.2.2 Measurements of intra-frequency cells.....	15
4.2.2.3 Measurements of inter-frequency FDD cells.....	16
4.2.2.4 Measurements of inter-frequency TDD cells.....	16
4.2.2.5 Measurements of inter-RAT GSM cells.....	17
4.2.2.6 Evaluation of cell re-selection criteria.....	17
4.2.2.7 Maximum interruption in paging reception.....	17
4.2.2.8 Number of cells in cell lists.....	18
5 UTRAN Connected mode mobility.....	18
5.1 FDD/FDD Soft Handover.....	18
5.1.1 Introduction.....	18
5.1.2 Requirements.....	18
5.1.2.1 Active set dimension.....	18
5.1.2.2 Active set update delay.....	18
5.1.2.3 Interruption Time.....	19
5.2 FDD/FDD Hard Handover.....	19
5.2.1 Introduction.....	19
5.2.2 Requirements.....	19
5.2.2.1 Hard handover delay.....	19
5.2.2.2 Interruption time.....	19
5.3 FDD/TDD Handover.....	20
5.3.1 Introduction.....	20
5.3.2 Requirements.....	20
5.3.2.1 FDD/TDD handover delay.....	20
5.3.2.2 Interruption time.....	20
5.4 FDD/GSM Handover.....	21
5.4.1 Introduction.....	21
5.4.2 Requirements.....	21
5.4.2.1 Handover delay.....	21
5.4.2.2 Interruption time.....	22
5.5 Cell Re-selection in CELL_FACH.....	22
5.5.1 Introduction.....	22
5.5.2 Requirements.....	22
5.5.2.1 Cell re-selection delay.....	22
5.5.2.1.1 Intra frequency cell reselection.....	22
5.5.2.1.2 Inter frequency cell reselection.....	23
5.5.2.1.3 FDD-TDD cell reselection.....	23

5.5.2.1.4	UTRAN-GSM Cell Reselection	24
5.5.2.2	Interruption time	24
5.5.2.2.1	FDD-FDD cell reselection	25
5.5.2.2.2	FDD-TDD cell reselection	25
5.5.2.2.3	FDD-GSM cell reselection	25
5.5.2.3	Measurement and evaluation of cell selection criteria S of serving cell	26
5.6	Cell Re-selection in CELL_PCH	26
5.6.1	Introduction	26
5.6.2	Requirements	26
5.7	Cell Re-selection in URA_PCH	26
5.7.1	Introduction	26
5.7.2	Requirements	26
5.8	RACH reporting	27
5.8.1	Introduction	27
5.8.2	Requirements	27
5.9	Inter-RAT cell change order from UTRAN in CELL_DCH and CELL_FACH	27
5.9.1	Introduction	27
5.9.2	Requirements	27
5.9.2.1	Delay	27
5.9.2.2	Interruption time	28
6	RRC Connection Control	28
6.1	RRC Re-establishment	28
6.1.1	Introduction	28
6.1.2	Requirements	28
6.1.2.1	UE Re-establishment delay requirement	29
6.2	(void)	29
6.3	Random Access	29
6.3.1	Introduction	29
6.3.2	Requirements	29
6.3.2.1	Correct behaviour when receiving an ACK	30
6.3.2.2	Correct behaviour when receiving an NACK	30
6.3.2.3	Correct behaviour at Time-out	30
6.3.2.4	Correct behaviour when reaching maximum transmit power	30
6.4	Transport format combination selection in UE	30
6.4.1	Introduction	30
6.4.2	Requirements	30
6.5	Maximum allowed UL TX Power	31
7	Timing and Signalling characteristics	32
7.1	UE Transmit Timing	32
7.1.1	Introduction	32
7.1.2	Requirements	32
8	UE Measurements Procedures	32
8.1	General Measurement Requirements in CELL_DCH State	32
8.1.1	Introduction	32
8.1.2	Requirements	33
8.1.2.1	UE Measurement Capability	33
8.1.2.2	FDD intra frequency measurements	33
8.1.2.2.1	Identification of a new cell	33
8.1.2.2.2	UE CPICH measurement capability	34
8.1.2.2.3	Periodic Reporting	34
8.1.2.2.4	Event-triggered Periodic Reporting	34
8.1.2.2.5	Event Triggered Reporting	35
8.1.2.3	FDD inter frequency measurements	35
8.1.2.3.1	Identification of a new cell	35
8.1.2.3.2	UE CPICH measurement capability	36
8.1.2.3.3	Periodic Reporting	36
8.1.2.3.4	Event Triggered Reporting	36
8.1.2.4	TDD measurements	36
8.1.2.4.1	Identification of a new cell	37
8.1.2.4.1.1	3.84 Mcps TDD Option	

8.1.2.4.1.2	1.28 Mcps TDD Option	
8.1.2.4.2	P-CCPCH RSCP measurement period	37
8.1.2.4.3	Periodic Reporting	38
8.1.2.4.4	Event Triggered Reporting	38
8.1.2.5	GSM measurements	38
8.1.2.5.1	GSM carrier RSSI	38
8.1.2.5.2	BSIC verification	39
8.1.2.5.3	Periodic Reporting	42
8.1.2.5.4	Event Triggered Reporting	42
8.2	Measurements in CELL_DCH State with special requirements	43
8.2.1	Introduction	43
8.2.2	Requirements	43
8.3	Capabilities for Support of Event Triggering and Reporting Criteria in CELL_DCH state	43
8.3.1	Introduction	43
8.3.2	Requirements	44
8.4	Measurements in CELL_FACH State	44
8.4.1	Introduction	44
8.4.2	Requirements	44
8.4.2.1	UE Measurement Capability	44
8.4.2.2	FDD intra frequency measurements	45
8.4.2.2.1	Identification of a new cell	45
8.4.2.2.2	UE CPICH measurement capability	46
8.4.2.2.3	RACH reporting	46
8.4.2.3	FDD inter frequency measurements	46
8.4.2.3.1	Identification of a new cell	46
8.4.2.3.2	UE CPICH measurement capability	46
8.4.2.4	TDD measurements	47
8.4.2.4.1	Identification of a new cell	47
8.4.2.4.1.1	3.84 Mcps TDD Option	
8.4.2.4.1.2	1.28 Mcps TDD Option	
8.4.2.4.2	P-CCPCH RSCP measurement period	48
8.4.2.5	GSM measurements	48
8.4.2.5.1	GSM carrier RSSI	48
8.4.2.5.2	BSIC verification	49
8.5	Capabilities for Support of Event Triggering and Reporting Criteria in CELL_FACH state	52
8.5.1	Introduction	52
8.5.2	Requirements	52
9	Measurements Performance Requirements	52
9.1	Measurement Performance for UE	52
9.1.1	CPICH RSCP	52
9.1.1.1	Intra frequency measurements accuracy	52
9.1.1.1.1	Absolute accuracy requirement	53
9.1.1.1.2	Relative accuracy requirement	53
9.1.1.2	Inter frequency measurement accuracy	53
9.1.1.2.1	Relative accuracy requirement	53
9.1.1.3	CPICH RSCP measurement report mapping	54
9.1.2	CPICH Ec/Io	54
9.1.2.1	Intra frequency measurements accuracy	54
9.1.2.1.1	Absolute accuracy requirement	54
9.1.2.1.2	Relative accuracy requirement	55
9.1.2.2	Inter frequency measurement accuracy	55
9.1.2.2.1	Absolute accuracy requirement	55
9.1.2.2.2	Relative accuracy requirement	55
9.1.2.3	CPICH Ec/Io measurement report mapping	56
9.1.3	UTRA Carrier RSSI	56
9.1.3.1	Absolute accuracy requirement	56
9.1.3.2	Relative accuracy requirement	56
9.1.3.3	UTRA Carrier RSSI measurement report mapping	57
9.1.4	GSM carrier RSSI	57
9.1.5	Transport channel BLER	57
9.1.5.1	BLER measurement requirement	57

9.1.5.2	Transport channel BLER measurement report mapping	58
9.1.6	UE transmitted power	58
9.1.6.1	Accuracy requirement.....	58
9.1.6.2	UE transmitted power measurement report mapping.....	58
9.1.7	SFN-CFN observed time difference	59
9.1.7.1	Intra frequency measurement requirement	59
9.1.7.2	Inter frequency measurement requirement	59
9.1.7.3	SFN-CFN observed time difference measurement report mapping	60
9.1.8	SFN-SFN observed time difference.....	60
9.1.8.1	SFN-SFN observed time difference type 1	60
9.1.8.1.1	Measurement requirement.....	60
9.1.8.1.2	SFN-SFN observed time difference type 1 measurement report mapping	61
9.1.8.2	SFN-SFN observed time difference type 2	61
9.1.8.2.1	Intra frequency measurement requirement accuracy without IPDL period active	61
9.1.8.2.2	Intra frequency measurement requirement accuracy with IPDL period active	62
9.1.8.2.3	Inter frequency measurement requirement accuracy.....	62
9.1.8.2.4	SFN-SFN observed time difference type 2 measurement report mapping	63
9.1.9	UE Rx-Tx time difference	63
9.1.9.1	UE Rx-Tx time difference type 1.....	63
9.1.9.1.1	Measurement requirement.....	63
9.1.9.1.2	UE Rx-Tx time difference type 1 measurement report mapping.....	63
9.1.9.2	UE Rx-Tx time difference type 2.....	64
9.1.9.2.1	Measurement requirement.....	64
9.1.9.2.2	UE Rx-Tx time difference type 2 measurement report mapping.....	64
9.1.10	Observed time difference to GSM cell	64
9.1.10.1	Measurement requirement.....	64
9.1.10.2	Observed time difference to GSM cell measurement report mapping	65
9.1.11	P-CCPCH RSCP.....	65
9.1.11.1	Absolute accuracy requirements	65
9.1.11.1.1	3.84 Mcps TDD Option	
9.1.11.1.2	1.28 Mcps TDD Option	
9.1.11.2	P-CCPCH RSCP measurement report mapping.....	65
9.1.12	UE GPS Timing of Cell Frames for UE positioning.....	66
9.1.12.1	UE GPS timing of Cell Frames for UE positioning measurement report mapping.....	66
9.2	Measurements Performance for UTRAN	66
9.2.1	Received total wideband power	67
9.2.1.1	Absolute accuracy requirement.....	67
9.2.1.2	Relative accuracy requirement.....	67
9.2.1.3	Received total wideband power measurement report mapping.....	67
9.2.2	SIR	67
9.2.2.1	Accuracy requirement.....	67
9.2.2.2	SIR measurement report mapping	68
9.2.3	SIR _{error}	68
9.2.3.1	Accuracy requirement.....	68
9.2.3.2	SIR _{error} measurement report mapping	68
9.2.4	Transmitted carrier power.....	69
9.2.4.1	Accuracy requirement.....	69
9.2.4.2	Transmitted carrier power measurement report mapping	69
9.2.5	Transmitted code power.....	69
9.2.5.1	Absolute accuracy requirement.....	69
9.2.5.2	Relative accuracy requirement.....	69
9.2.5.3	Transmitted code power measurement report mapping	70
9.2.6	(void)	70
9.2.7	Physical channel BER.....	70
9.2.7.1	Accuracy requirement.....	70
9.2.7.2	Physical channel BER measurement report mapping	70
9.2.8	Round trip time	71
9.2.8.1	Absolute accuracy requirement.....	71
9.2.8.2	Round trip time measurement report mapping.....	71
9.2.9	Transport Channel BER.....	71
9.2.9.1	Accuracy requirement.....	71
9.2.9.2	Transport channel BER measurement report mapping	72

9.2.10	UTRAN GPS Timing of Cell Frames for UE positioning	72
9.2.10.1	Accuracy requirement	72
9.2.10.2	UTRAN GPS timing of Cell Frames for UE positioning measurement report mapping	72
9.2.11	PRACH/PCPCH Propagation delay	73
9.2.11.1	Accuracy requirement	73
9.2.11.1.1	PRACH Propagation delay.....	73
9.2.11.1.2	PCPCH Propagation delay	73
9.2.11.2	PRACH/PCPCH Propagation delay measurement report mapping	73
9.2.12	Acknowledged PRACH preambles.....	73
9.2.12.1	Acknowledged PRACH preambles measurement report mapping.....	73
9.2.13	Detected PCPCH access preambles	74
9.2.13.1	Detected PCPCH access preambles measurement report mapping	74
9.2.14	Acknowledged PCPCH access preambles	74
9.2.14.1	Acknowledged PCPCH access preambles measurement report mapping	74
9.2.15	SFN-SFN observed time difference.....	75
9.2.15.1	Accuracy requirement	75
9.2.15.1.1	Accuracy requirement without IPDL	75
9.2.15.1.2	Accuracy requirement with IPDL	75
9.2.15.2	SFN-SFN observed time difference measurement report mapping.....	75
Annex A (normative): Test Cases.....		76
A.1	Purpose of Annex.....	76
A.2	Requirement classification for statistical testing	76
A.2.1	Types of requirements in TS 25.133.....	76
A.3	Reserved for Future Use	77
A.4	Idle Mode.....	77
A.4.1	Cell selection	77
A.4.2	Cell Re-Selection	77
A.4.2.1	Scenario 1: Single carrier case.....	78
A.4.2.1.1	Test Purpose and Environment.....	78
A.4.2.1.2	Test Requirements.....	79
A.4.2.2	Scenario 2: Multi carrier case	79
A.4.2.2.1	Test Purpose and Environment.....	79
A.4.2.2.2	Test Requirements.....	80
A.4.3	UTRAN to GSM Cell Re-Selection.....	81
A.4.3.1	Scenario 1	81
A.4.3.1.1	Test Purpose and Environment.....	81
A.4.3.1.2	Test Requirements.....	82
A.4.3.2	Scenario 2	82
A.4.3.2.1	Test Purpose and Environment.....	82
A.4.3.2.2	Test Requirements.....	83
A.4.4	FDD/TDD Cell Re-selection.....	84
A.4.4.1	Test Purpose and Environment	84
A.4.4.1.1	3.84 Mcps TDD Option	
A.4.4.1.2	1.28 Mcps TDD Option	
A.4.4.2	Test Requirements	85
A.5	UTRAN Connected Mode Mobility	85
A.5.1	FDD/FDD Soft Handover	85
A.5.1.1	Test Purpose and Environment	85
A.5.1.1.1	Test procedure.....	86
A.5.1.2	Test Requirements	87
A.5.2	FDD/FDD Hard Handover.....	87
A.5.2.1	Handover to intra-frequency cell	87
A.5.2.1.1	Test Purpose and Environment.....	87
A.5.2.1.2	Test Requirements.....	88
A.5.2.2	Handover to inter-frequency cell	88
A.5.2.2.1	Test Purpose and Environment.....	88

A.5.2.2.2	Test Requirements.....	89
A.5.3	FDD/TDD Handover	90
A.5.3.1	Test purpose and Environment	90
A.5.3.1.1	3.84 Mcps TDD Option	
A.5.3.1.2	1.28 Mcps TDD Option	
A.5.3.2	Test Requirements	91
A.5.4	Inter-system Handover from UTRAN FDD to GSM.....	91
A.5.4.1	Test Purpose and Environment.....	91
A.5.4.2	Test Requirements	93
A.5.5	Cell Re-selection in CELL_FACH	93
A.5.5.1	One frequency present in neighbour list	93
A.5.5.1.1	Test Purpose and Environment.....	93
A.5.5.1.2	Test Requirements.....	95
A.5.5.2	Two frequencies present in the neighbour list	96
A.5.5.2.1	Test Purpose and Environment.....	96
A.5.5.2.2	Test Requirements.....	97
A.5.5.3	Cell Reselection to GSM	98
A.5.5.3.1	Test Purpose and Environment.....	98
A.5.5.3.2	Test Requirements.....	100
A.5.6	Cell Re-selection in CELL_PCH	100
A.5.6.1	One frequency present in the neighbour list	100
A.5.6.1.1	Test Purpose and Environment.....	100
A.5.6.1.2	Test Requirements.....	101
A.5.6.2	Two frequencies present in the neighbour list	102
A.5.6.2.1	Test Purpose and Environment.....	102
A.5.6.2.2	Test Requirements.....	103
A.5.7	Cell Re-selection in URA_PCH.....	104
A.5.7.1	One frequency present in the neighbour list	104
A.5.7.1.1	Test Purpose and Environment.....	104
A.5.7.1.2	Test Requirements.....	105
A.5.7.2	Two frequencies present in the neighbour list	105
A.5.7.2.1	Test Purpose and Environment.....	105
A.5.7.2.2	Test Requirements.....	106
A.6	RRC Connection Control.....	107
A.6.1	RRC Re-establishment delay	107
A.6.1.1	Test Purpose and Environment	107
A.6.1.1.1	TEST 1	107
A.6.1.1.2	TEST 2	108
A.6.1.2	Test Requirements	109
A.6.1.2.1	Test 1	109
A.6.1.2.2	Test 2.....	109
A.6.2	Random Access	110
A.6.2.1	Test Purpose and Environment.....	110
A.6.2.2	Test Requirements	111
A.6.2.2.1	Correct behaviour when receiving an ACK	111
A.6.2.2.2	Correct behaviour when receiving an NACK	111
A.6.2.2.3	Correct behaviour at Time-out	112
A.6.2.2.4	Correct behaviour when reaching maximum transmit power.....	112
A.6.3	Void	112
A.6.4	Transport format combination selection in UE.....	112
A.6.4.1	Test Purpose and Environment.....	112
A.6.4.1.1	Interactive or Background, PS, UL: 64 kbps.....	112
A.6.4.2	Test Requirements	113
A.6.4.2.1	Interactive or Background, PS, UL: 64 kbps.....	113
A.7	Timing and Signalling Characteristics.....	114
A.7.1	UE Transmit Timing.....	114
A.7.1.1	Test Purpose and Environment.....	114
A.7.1.2	Test Requirements	115
A.8	UE Measurements Procedures	116
A.8.1	FDD intra frequency measurements	116

A.8.1.1	Event triggered reporting in AWGN propagation conditions	116
A.8.1.1.1	Test Purpose and Environment.....	116
A.8.1.1.2	Test Requirements.....	116
A.8.1.2	Event triggered reporting of multiple neighbours in AWGN propagation condition.....	117
A.8.1.2.1	Test Purpose and Environment.....	117
A.8.1.2.2	Test Requirements.....	118
A.8.1.3	Event triggered reporting of two detectable neighbours in AWGN propagation condition.....	118
A.8.1.3.1	Test Purpose and Environment.....	118
A.8.1.3.2	Test Requirements.....	119
A.8.1.4	Correct reporting of neighbours in fading propagation condition.....	120
A.8.1.4.1	Test Purpose and Environment.....	120
A.8.1.4.2	Test Requirements.....	120
A.8.2	FDD inter frequency measurements	121
A.8.2.1	Correct reporting of neighbours in AWGN propagation condition	121
A.8.2.1.1	Test Purpose and Environment.....	121
A.8.2.1.2	Test Requirements.....	122
A.8.3	TDD measurements	122
A.8.3.1	Correct reporting of TDD neighbours in AWGN propagation condition	122
A.8.3.1.1	Test Purpose and Environment.....	122
A.8.3.1.1.1	3.84 Mcps TDD Option	
A.8.3.1.1.2	1.28 Mcps TDD Option	
A.8.3.1.2	Test Requirements.....	123
A.8.4	GSM measurements	124
A.8.4.1	Correct reporting of GSM neighbours in AWGN propagation condition.....	124
A.8.4.1.1	Test Purpose and Environment.....	124
A.8.4.1.2	Test Requirements.....	125
A.9	Measurement Performance Requirements	125
A.9.1	Measurement Performance for UE	126
A.9.1.1	CPICH RSCP.....	126
A.9.1.1.1	Test Purpose and Environment.....	126
A.9.1.1.1.1	Intra frequency test parameters.....	126
A.9.1.1.1.2	Inter frequency test parameters.....	126
A.9.1.1.2	Test Requirements.....	127
A.9.1.2	CPICH Ec/Io.....	127
A.9.1.2.1	Test Purpose and Environment.....	127
A.9.1.2.1.1	Intra frequency test parameters.....	127
A.9.1.2.1.2	Inter frequency test parameters.....	128
A.9.1.2.2	Test Requirements.....	128
A.9.1.3	UTRA Carrier RSSI.....	128
A.9.1.3.1	Test Purpose and Environment.....	128
A.9.1.3.2	Test Requirements.....	129
A.9.1.3A	GSM Carrier RSSI	129
A.9.1.3A.1	Test Purpose and Environment.....	129
A.9.1.3A.2	Test Requirements.....	130
A.9.1.3B	Transport channel BLER.....	130
A.9.1.3C	UE transmitted power.....	130
A.9.1.3C.1	Test Purpose and Environment.....	130
A.9.1.3C.1.1	Test procedure	131
A.9.1.3C.2	Test Requirements.....	131
A.9.1.4	SFN-CFN observed time difference	131
A.9.1.4.1	Test Purpose and Environment.....	131
A.9.1.4.1.1	Intra frequency test parameters.....	131
A.9.1.4.1.2	Inter frequency test parameters.....	132
A.9.1.4.2	Test Requirements.....	132
A.9.1.5	SFN-SFN observed time difference.....	132
A.9.1.5.1	SFN-SFN observed time difference type 1	132
A.9.1.5.1.1	Test Purpose and Environment.....	132
A.9.1.5.1.2	Test Requirements	133
A.9.1.5.2	SFN-SFN observed time difference type 2	133
A.9.1.5.2.1	Test Purpose and Environment.....	133
A.9.1.5.2.2	Test Requirements	134

A.9.1.6 UE Rx-Tx time difference 134

A.9.1.6.1 UE Rx-Tx time difference type 1 134

A.9.1.6.1.1 Test Purpose and Environment 134

A.9.1.6.1.2 Test Requirements 134

A.9.1.6.2 UE Rx-Tx time difference type 2 134

A.9.1.6.2.1 Test Purpose and Environment 134

A.9.1.6.2.2 Test Requirements 135

A.9.1.7 Observed time difference to GSM cell 135

A.9.1.7.1 Test Purpose and Environment 135

A.9.1.7.2 Test Requirements 135

A.9.1.8 P-CCPCH RSCP 135

A.9.1.8.1 Test Purpose and Environment 135

A.9.1.8.1.1 Inter frequency test parameters 135

[A.9.1.8.1.1.1 3.84 Mcps TDD Option](#)

[A.9.1.8.1.1.2 1.28 Mcps TDD Option](#)

A.9.1.8.2 Test Requirements 136

Annex B (informative): Change History 137

[<next changed section>](#)

8.1.2.4 TDD measurements

The requirements in this section shall apply to UE supporting FDD and TDD.

In the CELL_DCH state when a transmission gap pattern sequence with the “TDD measurements” purpose is provided by the network, the UE shall continuously measure identified inter frequency TDD cells and search for new inter frequency TDD cells indicated in the measurement control information.

In order for the requirements in the following subsections to apply, the Beacon timeslots of the inter-frequency TDD cells indicated in the measurement control information shall either be synchronised or non-overlapping in time such that the UE can measure an inter-frequency TDD cell at least once in every transmission gap pattern as given in [7] for the slot allocation case in use in this cell and by assuming 2*0.5 ms implementation margin per transmission gap.

UTRAN shall provide a transmission gap pattern sequence with measurement purpose TDD measurement using the combinations for TGL1, TGL2 and TGD in Table 8.2:

Table 8.2

TGL1 [slots]	TGL2 [slots]	TGD [slots]
10	-	undefined
10	10	15...269
14	7	15...269

8.1.2.4.1 Identification of a new cell


[8.1.2.4.1.1 3.84 Mcps TDD Option](#)

When transmission gaps are scheduled for inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within

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

If the UE does not need compressed mode to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

An inter-frequency TDD cell shall be considered detectable when P-CCPCH $E_c/I_o \geq -8$ dB and SCH $E_c/I_o \geq -13$ dB. 

The received P-CCPCH E_c/I_o is defined as

$$\left(\frac{P-CCPCH-E_c}{I_o} \right)_{in \text{ dB}} = \left(\frac{P-CCPCH-E_c}{I_{or}} \right)_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{in \text{ dB}}$$

and the received SCH E_c/I_o is defined as

$$\left(\frac{SCH-E_c}{I_o} \right)_{in \text{ dB}} = \left(\frac{SCH-E_c}{I_{or}} \right)_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{in \text{ dB}}$$

[8.1.2.4.1.2 1.28 Mcps TDD Option](#)

[When transmission gaps are scheduled for inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within](#)

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

If the UE does not need compressed mode to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

A cell shall be considered detectable when P-CCPCH $E_c/I_o > -8$ dB and DwPCH $E_c/I_o > -5$ dB. When L3 filtering is used an additional delay can be expected.

The received P-CCPCH E_c/I_o is defined as

$$\left(\frac{P - \text{CCPCH} - E_c}{I_o} \right)_{\text{in dB}} = \left(\frac{P - \text{CCPCH} - E_c}{I_{or}} \right)_{\text{in dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{\text{in dB}}$$

The received DwPTS E_c/I_o is defined as

$$\left(\frac{\text{DwPCH} - E_c}{I_o} \right)_{\text{in dB}} = \left(\frac{\text{DwPCH} - E_c}{I_{or}} \right)_{\text{in dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{\text{in dB}}$$

8.1.2.4.2 P-CCPCH RSCP measurement period

When transmission gaps are scheduled for inter frequency TDD measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.11 and with a measurement period as given by

$$T_{\text{measurement TDD inter}} = \text{Max} \left\{ T_{\text{Measurement Period TDD inter}}, N_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{Measurement Period TDD inter}}}{N_{\text{TDD inter}}} \cdot N_{\text{Freq}} \right\} \text{ms}$$

If the UE does not need compressed mode to perform inter-frequency TDD measurements, the measurement period for inter-frequency TDD measurements shall be 480 ms.

The UE shall be capable of performing P-CCPCH RSCP measurements for $X_{\text{basic measurement TDD inter}}$ inter-frequency TDD cells per TDD frequency of the monitored set and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{\text{measurement TDD inter}}$.

where

$$X_{\text{basic measurement TDD inter}} = 6 \text{ (cells)}$$

$T_{\text{Measurement_Period TDD inter}} = 480$ ms. The time period used for calculating the measurement period $T_{\text{measurement_TDD inter}}$ for inter frequency P-CCPCH RSCP measurements.

$N_{\text{TDD inter}}$: This is the smallest resulting integer number of transmission gap patterns in a transmission gap pattern sequence assigned to UE by UTRAN for inter frequency TDD measurements during the time period $T_{\text{Measurement_Period TDD inter}}$ with an arbitrarily chosen timing.

$N_{\text{basic_identify_TDD inter}} = 80$. This is the number of transmission gap patterns in a transmission gap pattern sequence for inter-frequency TDD measurements during the time period used in the inter frequency TDD equation where the maximum allowed time for the UE to identify a new inter frequency TDD cell is defined.

$N_{\text{basic_measurement_TDD inter}} = 5$. This is the number of transmission gap patterns in a transmission gap pattern sequence for inter-frequency TDD measurements during the time period $T_{\text{Measurement_Period TDD inter}}$ with an arbitrarily chosen timing that is used in the inter-frequency TDD equation for defining where the measurement period for inter frequency P-CCPCH RSCP measurements is defined.

N_{Freq} : This is the number of TDD frequencies indicated in the inter frequency measurement control information.

8.1.2.4.3 Periodic Reporting

Reported measurements in periodically triggered measurement reports shall meet the requirements in section 9.

8.1.2.4.4 Event Triggered Reporting

Reported measurements in event triggered measurement reports shall meet the requirements in section 9.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

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

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify TDD inter}}$ defined in Section 8.1.2.4.1 When L3 filtering is used an additional delay can be expected.

<next changed section>

8.4.2.4 TDD measurements

The requirements in this section shall apply to UE supporting FDD and TDD.

In the CELL_FACH state when a measurement occasion cycle is provided by the network the UE shall continuously measure identified inter frequency TDD cells and search for new inter-frequency TDD cells indicated in the measurement control information.

8.4.2.4.1 Identification of a new cell

8.4.2.4.1.1 3.84 Mcps TDD Option

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

$$T_{\text{identify, TDD}} = \text{Max} \left\{ 5000, \text{Ceil} \left\{ \frac{T_{\text{basic identify TDD inter}}}{T_{\text{Inter FACH}}} \right\} \cdot T_{\text{meas}} \cdot N_{\text{Freq, TDD}} \right\} \text{ ms}$$

where

$$T_{\text{basic_identify_TDD,inter}} = 800\text{ms}$$

$N_{\text{Freq, TDD}}$: Number of TDD frequencies indicated in the inter-frequency cell info list

T_{Meas} is specified in section 8.4.2.1.

$T_{\text{Inter FACH}}$ is specified in section 8.4.2.3.1

If the UE does not need measurement occasions to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

An inter-frequency TDD cell shall be considered detectable when $P\text{-CCPCH}_{E_c}/I_o \geq -8$ dB and $SCH_{E_c}/I_o \geq -13$ dB.

The received $P\text{-CCPCH}_{E_c}/I_o$ is defined as

$$\left(\frac{P\text{-CCPCH}_{E_c}}{I_o} \right)_{\text{in dB}} = \left(\frac{P\text{-CCPCH}_{E_c}}{I_{or}} \right)_{\text{in dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{\text{in dB}}$$

and the received SCH_{E_c}/I_o is defined as

$$\left(\frac{SCH_{E_c}}{I_o} \right)_{\text{in dB}} = \left(\frac{SCH_{E_c}}{I_{or}} \right)_{\text{in dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{\text{in dB}}$$

8.4.2.4.1.2 1.28 Mcps TDD Option

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

$$T_{\text{identify, TDD}} = \text{Max} \left\{ 5000, \text{Ceil} \left\{ \frac{T_{\text{basic identify TDD inter}}}{T_{\text{Inter FACH}}} \right\} \cdot T_{\text{meas}} \cdot N_{\text{Freq, TDD}} \right\} \text{ ms}$$

where

$$T_{\text{basic_identify_TDD,inter}} = 800\text{ms}$$

$N_{\text{Freq, TDD}}$: Number of TDD frequencies indicated in the inter-frequency cell info list

T_{Meas} is specified in section 8.4.2.1.

$T_{\text{Inter FACH}}$ is specified in section 8.4.2.3.1

If the UE does not need measurement occasions to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

A cell shall be considered detectable when P-CCPCH $E_c/I_o > -8$ dB and DwPCH $E_c/I_o > -5$ dB.

The received P-CCPCH E_c/I_o is defined as

$$\left(\frac{P - \text{CCPCH} - E_c}{I_o} \right)_{\text{in dB}} = \left(\frac{P - \text{CCPCH} - E_c}{I_{or}} \right)_{\text{in dB}} - \left(\hat{I}_{or} \right)_{\text{in dB}}$$

The received DwPTS E_c/I_o is defined as

$$\left(\frac{\text{DwPCH} - E_c}{I_o} \right)_{\text{in dB}} = \left(\frac{\text{DwPCH} - E_c}{I_{or}} \right)_{\text{in dB}} - \left(\hat{I}_{or} \right)_{\text{in dB}}$$

8.4.2.4.2 P-CCPCH RSCP measurement period

When a measurement occasion cycle as previously described is scheduled for inter frequency TDD measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.11 and with a measurement period as given by

$$T_{\text{measurement TDD}} = \text{Max} \left\{ T_{\text{Measurement_Period TDD inter}}, 2 \cdot T_{\text{meas}}, \text{Ceil} \left\{ \frac{T_{\text{basic measurement TDD inter}}}{T_{\text{Inter FACH}}} \right\} \cdot T_{\text{meas}} \cdot N_{\text{Freq,TDD}} \right\}$$

where

$T_{\text{basic measurement TDD inter}} = 50$ ms.

$T_{\text{Measurement Period TDD inter}}$ is specified in section 8.1.2.4.2.

T_{Meas} is specified in section 8.4.2.1.

$T_{\text{Inter FACH}}$ is specified in section 8.4.2.3.1

$N_{\text{Freq,TDD}}$: This is the number of TDD frequencies indicated in the inter-frequency cell info list

If the UE does not need measurement occasions to perform inter-frequency TDD measurements, the measurement period for inter frequency TDD measurements is 480 ms.

The UE shall be capable of performing P-CCPCH RSCP measurements for $X_{\text{basic measurement TDD inter}}$ inter-frequency TDD cells per TDD frequency of the monitored set and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{\text{Measurement TDD}}$.

$X_{\text{basic measurement TDD inter}}$ is defined in section 8.1.2.4.2

<next changed section>

9.1.11 P-CCPCH RSCP

NOTE: This measurement is used for handover between UTRA FDD and UTRA TDD.

The requirements in this section are valid for terminals supporting this capability.

The measurement period for CELL_DCH state can be found in sub clause 8.1.2.4. The measurement period for CELL_FACH state can be found in sub clause 8.4.2.4.

9.1.11.1 Absolute accuracy requirements

9.1.11.1.1 3.84 Mcps TDD Option

The accuracy requirement in table 9.31 is valid under the following conditions:

$P\text{-CCPCH_RSCP} \geq -102 \text{ dBm}$.

$$\left(\frac{I_o}{\hat{I}_{or}} \right)_{in \text{ dB}} - \left(\frac{P - CCPCH - E_c}{I_{or}} \right)_{in \text{ dB}} \leq 8 \text{ dB}$$

Table 9.31: P-CCPCH_RSCP Inter frequency absolute accuracy

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

9.1.11.1.2 1.28 Mcps TDD Option

The accuracy requirement in table 9.31A is valid under the following conditions:

$P\text{-CCPCH RSCP} \geq -102 \text{ dBm}$

$P\text{-CCPCH } E_c/I_o > -8 \text{ dB}$

Table 9.31A: P-CCPCH_RSCP Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal conditions	Extreme conditions	Io [dBm/1.28 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

9.1.11.2 P-CCPCH RSCP measurement report mapping

The reporting range is for $P\text{-CCPCH RSCP}$ is from -115 ... -25 dBm.

In table 9.32 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.32

Reported value	Measured quantity value	Unit
PCCPCH_RSCP_LEV _00	PCCPCH RSCP < -115	dBm
PCCPCH_RSCP_LEV _01	$-115 \leq \text{PCCPCH RSCP} < -114$	dBm
PCCPCH_RSCP_LEV _02	$-114 \leq \text{PCCPCH RSCP} < -113$	dBm
PCCPCH_RSCP_LEV _03	$-113 \leq \text{PCCPCH RSCP} < -112$	dBm
...
PCCPCH_RSCP_LEV _89	$-27 \leq \text{PCCPCH RSCP} < -26$	dBm
PCCPCH_RSCP_LEV _90	$-26 \leq \text{PCCPCH RSCP} < -25$	dBm
PCCPCH_RSCP_LEV _91	$-25 \leq \text{PCCPCH RSCP}$	dBm

<next changed section>

A.4.4 FDD/TDD Cell Re-selection

A.4.4.1 Test Purpose and Environment

[A.4.4.1.1 3.84 Mcps TDD Option](#)

This test is to verify the requirement for the FDD/TDD cell re-selection delay reported in section 4.2.2.

This scenario implies the presence of UTRA FDD and 1 UTRA TDD cell as given in Table A.4.8, A.4.9 and A4.10. The maximum repetition period of the relevant system information blocks that need to be received by the UE to camp on a cell shall be 1280 ms.

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

Table A.4.8: General test parameters for FDD/TDD cell re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	FDD cell
	Neighbour cells		Cell2	TDD cell
Final condition	Active cell		Cell2	TDD cell
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table A.4.9: FDD/TDD cell re-selection

Parameter	Unit	Cell 1	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
OCNS_Ec/Ior	dB	-0.941	
\hat{I}_{or}/I_{oc}	dB	9	3
I_{oc}	dBm / 3.84 MHz	-70	
CPICH_RSCP	dBm	-71	-77
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH_Ec/No	
Qrxlevmin	dBm	-115	
Qoffset1s,n	dB	0	
Qhyst1	dB	0	
PENALTY_TIME	s	0	
TEMPORARY_OFFSET	dB	0	
Treselection	s	0	
Sintrasearch	dB	not sent	
Sintersearch	dB	not sent	

Table A.4.10: Cell 2 specific test parameters for FDD/TDD Cell Re-Selection

Parameter	Unit	Cell 2			
		0		8	
DL timeslot number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH_Ec/lor	dB	-3		n.a.	
PICH_Ec/lor	dB	n.a.		-3	
SCH_Ec/lor	dB	-9			
SCH_t _{offset}	dB	10			
OCNS_Ec/lor	dB	-3.12			
\hat{I}_{or}/I_{oc}	dB	-4	2	-4	2
P-CCPCH RSCP	dBm	-77	-71	n.a.	n.a.
I_{oc}	dBm/3,84 MHz	-70			
Propagation Condition		AWGN			
Qrxlevmin	dBm	-103			
Qoffset2 _{s,n}	dB	0			
Qhyst2	dB	0			
PENALTY_TIME	s	0			
TEMPORARY_OFFSET	dB	0			
Treselection	s	0			
Sintrasearch	dB	not sent			
Sintersearch	dB	not sent			
Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.					

A.4.4.1.2 1.28 Mcps TDD Option

This test is to verify the requirement for the FDD/TDD cell re-selection delay reported in section 4.2.2.

This scenario implies the presence of UTRA FDD and 1 UTRA TDD cell as given in Table A.4.8A, A.4.9A and A.4.10A. The maximum repetition period of the relevant system information blocks that need to be received by the UE to camp on a cell shall be 1280 ms.

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

Table A.4.8A: General test parameters for FDD/TDD cell re-selection

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	FDD cell
	Neighbour cells	Cell2	TDD cell
Final condition	Active cell	Cell2	TDD cell
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS			Not used
DRX cycle length	s	1.28	The value shall be used for all cells in the test.
T1	s	15	
T2	s	15	

Table A.4.9A: FDD/TDD cell re-selection

Parameter	Unit	Cell 1	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH Ec/lor	dB	-10	
P-CCPCH Ec/lor	dB	-12	
SCH Ec/lor	dB	-12	
PICH Ec/lor	dB	-15	
OCNS Ec/lor	dB	-0.941	
\hat{I}_{or}/I_{oc}	dB	9	3
I_{oc}	dBm / 3.84 MHz	-70	
CPICH RSCP	dBm	-71	-77
Propagation Condition		AWGN	
Cell selection and reselection quality measure		CPICH Ec/No	
Qrxlevmin	dBm	-115	
Qoffset1 _{s,n}	dB	0	
Qhyst1	dB	0	
Treselection	s	0	
Sintrasearch	dB	not sent	
Sintersearch	dB	not sent	

Table A.4.10A: Cell 2 specific test parameters for FDD/TDD Cell Re-Selection

Parameter	Unit	Cell 2			
		0		DwPTs	
DL timeslot number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH Ec/lor	dB	-3			
DwPCH Ec/lor	dB	0			
OCNS Ec/lor	dB	-3			
\hat{I}_{or}/I_{oc}	dB	-4	2	-4	2
P-CCPCH RSCP	dBm	-77	-71		
I_{oc}	dBm/1.28 MHz	-70			
Propagation Condition		AWGN			
Qrxlevmin	dBm	-103			
Qoffset1 _{s,n}	dB	0			
Qhyst1	dB	0			
Treselection	s	0			
Sintrasearch	dB	not sent			
Sintersearch	dB	not sent			

A.4.4.2 Test Requirements

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE: The cell re-selection delay can be expressed as:

$$T_{\text{evaluateTDD}} + T_{\text{SI}}$$

where:

$T_{\text{evaluateTDD}}$ See Table 4.1 in section 4.2.2.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

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

<next changed section>

A.5.3 FDD/TDD Handover

A.5.3.1 Test purpose and Environment

[A.5.3.1.1 3.84 Mcps TDD Option](#)

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CD below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

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

Table A.5.0CA: General test parameters for FDD/TDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 2	TDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-75	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T _{SI}		s	1.28	The value shall be used for all cells in the test
T1		s	5	
T2		s	15	
T3		s	5	

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 1	
CPICH_Ec/I _{or}	dB	-10	
P-CCPCH_Ec/I _{or}	dB	-12	
SCH_Ec/I _{or}	dB	-12	
PICH_Ec/I _{or}	dB	-15	
DPCH_Ec/I _{or}	dB	Note 1	n.a.
OCNS_Ec/I _{or}	dB	Note 2	
\hat{I}_{or}/I_{oc}	dB	0	
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/I _o	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 A.5.0CC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2								
		0			2			8		
DL timeslot number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 2								
P-CCPCH_Ec/I _{or}	dB	-3			n.a.			n.a.		
PICH_Ec/I _{or}	dB	n.a.			n.a.			-3		
SCH_Ec/I _{or}	dB	-9			n.a.			-9		
SCH_t _{offset}	dB	5			n.a.			5		
DPCH_Ec/I _{or}	dB	n.a.			n.a.		Note 1	n.a.		
OCNS_Ec/I _{or}	dB	-3.12			0		Note 2	-3.12		
\hat{I}_{or}/I_{oc}	dB	-Inf	6	-Inf	6		-Inf	6		
P-CCPCH RSCP	dBm	-Inf	-67	n.a.			n.a.			
I_{oc}	dBm/3.84 MHz	-70								
Propagation Condition		AWGN								
Note 1: The DPCH level is controlled by the power control loop										
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .										
Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.										

[A.5.3.1.2 1.28 Mcps TDD Option](#)

[The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL_DCH state reported in section 5.3.2.1.](#)

[The test parameters are given in Table A.5.0DA, A.5.0DB and A.5.0DD below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.](#)

[UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in \[16\].](#)

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

Table A.5.0DA: General test parameters for FDD/TDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 2	TDD cell
α	DB		0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis	DB		0	Hysteresis parameter for event 2C
Time to Trigger	Ms		0	
Threshold non-used frequency	DBm		-75	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T_{SI}	S		1.28	The value shall be used for all cells in the test
T_1	S		5	
T_2	S		15	
T_3	S		5	

Table A.5.0DB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 1	
CPICH E_c/I_{or}	dB	-10	
P-CCPCH E_c/I_{or}	dB	-12	
SCH E_c/I_{or}	dB	-12	
PICH E_c/I_{or}	dB	-15	
DPCH E_c/I_{or}	dB	Note 1	n.a.
OCNS E_c/I_{or}	dB	Note 2	
\hat{I}_{or}/I_{oc}	dB	0	
I_{oc}	dBm/3.84 MHz	-70	
CPICH E_c/I_o	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_{oc} .			

Table A.5.0DC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2					
		0			DwPTS		
DL timeslot number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 2					
P-CCPCH Ec/Ior	dB	-3					
DwPCH Ec/Ior	dB				0		
DPCH Ec/Ior	dB						Note 1
OCNS Ec/Ior	dB	-3					Note 2
\hat{I}_{or}/I_{oc}	dB	-Inf	6		-Inf	6	
P-CCPCH RSCP	dBm	-Inf	-67				
I_{oc}	dBm/1.28 MHz	-70					
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 Ior.							

A.5.3.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 70 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

<next changed section>

A.8.3 TDD measurements

A.8.3.1 Correct reporting of TDD neighbours in AWGN propagation condition

A.8.3.1.1 Test Purpose and Environment

[A.8.3.1.1.1 3.84 Mcps TDD Option](#)

The purpose of this test is to verify that the UE makes correct reporting of events when measuring on UTRA TDD cells. This test will partly verify the requirements in section 8.1.2. and 9.1.

The test parameters are given in Table A.8.13, A.8.14 and A.8.14A below. The test consists of two successive time periods, with time duration of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA FDD cell and cell 2 being a UTRA TDD neighbour cell.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

The TTI of the uplink DCCH shall be 20ms.

Table A.8.13: General test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 1	FDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-71	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		s	15	
T2		s	10	

Table A.8.14: Cell 1 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	
		T1, T2	
UTRA RF Channel Number		Channel 1	
CPICH_Ec/lor	dB	-10	
P-CCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
DPCH_Ec/lor	dB	Note 1	
OCNS_Ec/lor	dB	Note 2	
\hat{I}_{or}/I_{oc}	dB	0	
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/lo	dB	-13	
Propagation Condition		AWGN	
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 A.8.14A: Cell 2 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 2			
		0		8	
DL timeslot number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH_Ec/lor	dB	-3		n.a.	
PICH_Ec/lor	dB	n.a.		-3	
SCH_Ec/lor	dB	-9			
SCH_t_offset	dB	10			
OCNS_Ec/lor	dB	-3.12			
P-CCPCH RSCP	dBm	-75	-67	n.a.	n.a.
\hat{I}_{or}/I_{oc}	dB	-2	6	-2	6
I_{oc}	dBm/3.84 MHz	-70			
Propagation Condition		AWGN			
Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.					

A.8.3.1.1.2 1.28 Mcps TDD Option

The purpose of this test is to verify that the UE makes correct reporting of events when measuring on UTRA TDD cells. This test will partly verify the requirements in section 8.1.2. and 9.1.

The test parameters are given in Table A.8.14B, A.8.14C and A.8.14D below. The test consists of two successive time periods, with time duration of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA FDD cell and cell 2 being a UTRA TDD neighbour cell.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

The TTI of the uplink DCCH shall be 20ms.

Table A.8.14B: General test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 1	FDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-71	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		s	15	
T2		s	10	

Table A.8.14C: Cell 1 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 1
		T1, T2
UTRA RF Channel Number		Channel 1
CPICH E_c/I_{oc}	dB	-10
P-CCPCH E_c/I_{oc}	dB	-12
SCH E_c/I_{oc}	dB	-12
PICH E_c/I_{oc}	dB	-15
DPCH E_c/I_{oc}	dB	Note 1
OCNS E_c/I_{oc}	dB	Note 2
\hat{I}_{or}/I_{oc}	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH E_c/I_o	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_{oc} .		

Table A.8.14D: Cell 2 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

<u>Parameter</u>	<u>Unit</u>	<u>Cell 2</u>			
		<u>0</u>		<u>DwPTS</u>	
<u>DL timeslot number</u>		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel Number</u>		<u>Channel 2</u>			
<u>P-CCPCH Ec/Ior</u>	<u>dB</u>	<u>-3</u>			
<u>DwPCH Ec/Ior</u>	<u>dB</u>			<u>0</u>	
<u>OCNS Ec/Ior</u>	<u>dB</u>	<u>-3</u>			
<u>P-CCPCH RSCP</u>	<u>dBm</u>	<u>-75</u>	<u>-67</u>		
<u>\hat{I}_{or}/I_{oc}</u>	<u>dB</u>	<u>-2</u>	<u>6</u>	<u>-2</u>	<u>6</u>
<u>I_{oc}</u>	<u>dBm/1.28 MHz</u>	<u>-70</u>			
<u>Propagation Condition</u>		<u>AWGN</u>			

A.8.3.1.2 Test Requirements

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 8.8 s from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of events correctly reported during repeated tests shall be at least 90%.

<next changed section>

A.9.1.8 P-CCPCH RSCP

A.9.1.8.1 Test Purpose and Environment

The purpose of this test is to verify that the P-CCPCH RSCP measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.11 and applies to UE supporting this capability.

A.9.1.8.1.1 Inter frequency test parameters

A.9.1.8.1.1.1 3.84 Mcps TDD Option

In this case both cells are on different frequencies and compressed mode as specified in TS 25.101 section A.5, set 3 of table A.22, is applied. Cell 1 is a UTRA FDD cell and cell 2 is a UTRA TDD cell.

P-CCPCH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table A.9.13.

Table A.9.13: P-CCPCH RSCP inter frequency test parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		n.a.	0 8	n.a.	0 8
UTRA RF Channel number		Channel 2	Channel 1	Channel 2	Channel 1
CPICH_Ec/lor	dB	-10	n.a.	-10	n.a.
P-CCPCH_Ec/lor	dB	-12	-3 n.a.	-12	-3 n.a.
SCH_Ec/lor	dB	-12	-9	-12	-9
SCH_toffset		n.a.	5	n.a.	5
PICH_Ec/lor	dB	-15	n.a. -3	-15	n.a. -3
DPCH_Ec/lor	dB	-15	n.a.	-15	n.a.
OCNS_Ec/lor	dB	-1.11	-3.12	-1.11	-3.12
lor	dBm/ 3.84 MHz	-60	-57.7	-84	-84.7
lor/lor	dB	9.54	7	0	3
P-CCPCH RSCP, Note 1	dBm	n.a.	-53.7 n.a.	n.a.	-84.7 n.a.
CPICH RSCP, Note 1	dBm	-60.46	n.a.	-94	n.a.
lo, Note 1	dBm/3.84 MHz	-50	-50	-81	-80
Propagation condition	-	AWGN		AWGN	
Note 1: P-CCPCH RSCP, CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves. Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.					
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed, test parameters for test 2 shall be set within 5 seconds so that the UE does not lose the Cell 2 in between the test.					

A.9.1.8.1.1.2 1.28 Mcps TDD Option

In this case both cells are on different frequencies and compressed mode as specified in TS 25.101 section A.5, set 3 of table A.22, is applied. Cell 1 is a UTRA FDD cell and cell 2 is a UTRA TDD cell.

P-CCPCH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table A.9.13A.

Table A.9.13A: P-CCPCH RSCP inter frequency test parameters

Parameter	Unit	Test 1			Test 2		
		Cell 1	Cell 2		Cell 1	Cell 2	
<u>DL timeslot number</u>		n.a.	0	<u>DwP</u> <u>Ts</u>	n.a.	0	<u>DwP</u> <u>Ts</u>
<u>UTRA RF Channel number</u>		<u>Channel 2</u>	<u>Channel 1</u>		<u>Channel 2</u>	<u>Channel 1</u>	
<u>CPICH Ec/lor</u>	dB	-10	n.a.		-10	n.a.	
<u>P-CCPCH Ec/lor</u>	dB	-12	-3		-12	-3	
<u>DwPCH Ec/lor</u>	dB	-12		0	-12		0
<u>PICH Ec/lor</u>	dB	-15	n.a.	n.a.	-15	n.a.	n.a.
<u>DPCH Ec/lor</u>	dB	-15	n.a.	n.a.	-15	n.a.	n.a.
<u>OCNS Ec/lor</u>	dB	-1.11	-3		-1.11	-3	
<u>Io</u>		<u>-60 dBm/</u> <u>3.84 MHz</u>	<u>-57.7</u> <u>dBm/1.28</u> <u>MHz</u>		<u>-84 dBm/</u> <u>3.84 MHz</u>	<u>-84.7</u> <u>dBm/1.28</u> <u>MHz</u>	
<u>Ior/loc</u>	dB	9.54	7		0	3	
<u>P-CCPCH RSCP, Note 1</u>	dBm	n.a.	-53.7		n.a.	-84.7	
<u>CPICH RSCP, Note 1</u>	dBm	-60.46	n.a.		-94	n.a.	
<u>Io, Note 1</u>		<u>-50 dBm/</u> <u>3.84 MHz</u>	<u>-50</u> <u>dBm/1.28</u> <u>MHz</u>		<u>-81 dBm/</u> <u>3.84 MHz</u>	<u>-80 dBm/1.28</u> <u>MHz</u>	
<u>Propagation condition</u>	-	AWGN			AWGN		
<u>Note 1: P-CCPCH RSCP, CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.</u>							
<u>Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed, test parameters for test 2 shall be set within 5 seconds so that the UE does not lose the Cell 2 in between the test.</u>							

A.9.1.8.2 Test Requirements

The P-CCPCH RSCP measurement accuracy shall meet the requirements in section 9.1.11.

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

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.133 CR 467** ⌘ rev ⌘ Current version: **5.3.0** ⌘

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:	⌘ Completion of FDD-1.28 Mcps TDD
Source:	⌘ RAN WG4
Work item code:	⌘ LCRTDD-RF
Date:	⌘ 21/08/2002
Category:	⌘ A
	Use <u>one</u> of the following categories:
	F (correction)
	A (corresponds to a correction in an earlier release)
	B (addition of feature),
	C (functional modification of feature)
	D (editorial modification)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .
Release:	⌘ Rel-5
	Use <u>one</u> of the following releases:
	2 (GSM Phase 2)
	R96 (Release 1996)
	R97 (Release 1997)
	R98 (Release 1998)
	R99 (Release 1999)
	Rel-4 (Release 4)
	Rel-5 (Release 5)
	Rel-6 (Release 6)

Reason for change: ⌘ Test Ceases in Annex A do not reflect 1.28Mcps TDD Option Parameters.

Summary of change: ⌘ Addition of missing side condition to and inclusion of missing parameters to 1.28 Mcps TDD Option requirements and test cases applicable to terminals supporting this capability:

- UE procedures for TDD measurements: inclusion of side condition definitions appropriate to 1.28 Mcps TDD cells with same compressed mode patterns and requirements on Identification of a new cell, P-CCPCH RSCP measurement period and RRC reporting for requirements in CELL_DCH and CELL_FACH State. The Side Conditions for UEs, which support 1.28Mcps TDD are chosen in line with 25.123 requirements.
- For the Absolute accuracy requirements on P-CCPCH RSCP measurement are splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct the I_o units for [dBm/1.28MHz] and the side conditions for 1.28Mcps TDD Option to

$$P\text{-CCPCH } E_c/I_o \geq -8 \text{ dB}$$

$$DwPCH_E_c/I_o \geq -5 \text{ dB}$$
 Measurement report mapping remains the same for both TDD Options.
- FDD/TDD Cell Re-selection test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for DwPCH instead of SCH parameters and for I_o units to be [dBm/1.28MHz] in LCR case.
- FDD/TDD Handover test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for DwPCH instead of SCH parameters and for I_o units to be [dBm/1.28MHz] in LCR case.
- UE procedures TDD measurements test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for the TDD cell for DwPCH

		instead of SCH parameters and for Io units to be [dBm/1.28MHz] in LCR case.
		- P-CCPCH RSCP Measurements test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for the TDD cell for DwPCH instead of SCH parameters and for Io units to be [dBm/1.28MHz] in LCR case.
Consequences if not approved:	⌘	There could be misleading implementation of Test Requirements for 1.28Mcps TDD Option Test Cases in Test Specification. Isolated Impact Analysis: Side conditions and parameters on requirements for 1.28 Mcps TDD have been modified. Would not affect the implementation behaving like indicated in the CR, would affect the implementation not behaving like indicated in the CR.

Clauses affected:	⌘	8.1.2.4.1, 8.4.2.4.1, 9.1.11.1, A.4.4.1, A.5.3.1, A.8.3.1.1, A.9.1.8.1.1																	
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> </table>	Y	N		X	X			X	<table border="1"> <tr> <td>Other core specifications</td> <td>⌘</td> <td></td> </tr> <tr> <td>Test specifications</td> <td></td> <td>34.121</td> </tr> <tr> <td>O&M Specifications</td> <td></td> <td></td> </tr> </table>	Other core specifications	⌘		Test specifications		34.121	O&M Specifications		
Y	N																		
	X																		
X																			
	X																		
Other core specifications	⌘																		
Test specifications		34.121																	
O&M Specifications																			
Other comments:	⌘	Equivalent CRs in other Releases: CR466 cat. F to 25.133 v4.5.0																	

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.

Contents

Foreword.....	11
1 Scope.....	12
2 References.....	12
3 Definitions, symbols and abbreviations.....	13
3.1 Definitions.....	13
3.2 Symbols.....	13
3.3 Abbreviations.....	14
3.4 Test tolerances.....	15
4 Idle Mode Tasks.....	15
4.1 Cell Selection.....	15
4.1.1 Introduction.....	15
4.2 Cell Re-selection.....	15
4.2.1 Introduction.....	15
4.2.2 Requirements.....	15
4.2.2.1 Measurement and evaluation of cell selection criteria S of serving cell.....	15
4.2.2.2 Measurements of intra-frequency cells.....	15
4.2.2.3 Measurements of inter-frequency FDD cells.....	16
4.2.2.4 Measurements of inter-frequency TDD cells.....	16
4.2.2.5 Measurements of inter-RAT GSM cells.....	17
4.2.2.6 Evaluation of cell re-selection criteria.....	17
4.2.2.7 Maximum interruption in paging reception.....	17
4.2.2.8 Number of cells in cell lists.....	18
5 UTRAN Connected mode mobility.....	18
5.1 FDD/FDD Soft Handover.....	18
5.1.1 Introduction.....	18
5.1.2 Requirements.....	18
5.1.2.1 Active set dimension.....	18
5.1.2.2 Active set update delay.....	18
5.1.2.3 Interruption Time.....	19
5.2 FDD/FDD Hard Handover.....	19
5.2.1 Introduction.....	19
5.2.2 Requirements.....	19
5.2.2.1 Hard handover delay.....	19
5.2.2.2 Interruption time.....	19
5.3 FDD/TDD Handover.....	20
5.3.1 Introduction.....	20
5.3.2 Requirements.....	20
5.3.2.1 FDD/TDD handover delay.....	20
5.3.2.2 Interruption time.....	20
5.4 FDD/GSM Handover.....	21
5.4.1 Introduction.....	21
5.4.2 Requirements.....	21
5.4.2.1 Handover delay.....	21
5.4.2.2 Interruption time.....	22
5.5 Cell Re-selection in CELL_FACH.....	22
5.5.1 Introduction.....	22
5.5.2 Requirements.....	22
5.5.2.1 Cell re-selection delay.....	22
5.5.2.1.1 Intra frequency cell reselection.....	22
5.5.2.1.2 Inter frequency cell reselection.....	23
5.5.2.1.3 FDD-TDD cell reselection.....	23

5.5.2.1.4	UTRAN-GSM Cell Reselection	24
5.5.2.2	Interruption time	24
5.5.2.2.1	FDD-FDD cell reselection	25
5.5.2.2.2	FDD-TDD cell reselection	25
5.5.2.2.3	FDD-GSM cell reselection	25
5.5.2.3	Measurement and evaluation of cell selection criteria S of serving cell	26
5.6	Cell Re-selection in CELL_PCH	26
5.6.1	Introduction	26
5.6.2	Requirements	26
5.7	Cell Re-selection in URA_PCH	26
5.7.1	Introduction	26
5.7.2	Requirements	26
5.8	RACH reporting	27
5.8.1	Introduction	27
5.8.2	Requirements	27
5.9	Inter-RAT cell change order from UTRAN in CELL_DCH and CELL_FACH	27
5.9.1	Introduction	27
5.9.2	Requirements	27
5.9.2.1	Delay	27
5.9.2.2	Interruption time	28
6	RRC Connection Control	28
6.1	RRC Re-establishment	28
6.1.1	Introduction	28
6.1.2	Requirements	28
6.1.2.1	UE Re-establishment delay requirement	29
6.2	(void)	29
6.3	Random Access	29
6.3.1	Introduction	29
6.3.2	Requirements	29
6.3.2.1	Correct behaviour when receiving an ACK	30
6.3.2.2	Correct behaviour when receiving an NACK	30
6.3.2.3	Correct behaviour at Time-out	30
6.3.2.4	Correct behaviour when reaching maximum transmit power	30
6.4	Transport format combination selection in UE	30
6.4.1	Introduction	30
6.4.2	Requirements	30
6.5	Maximum allowed UL TX Power	31
7	Timing and Signalling characteristics	32
7.1	UE Transmit Timing	32
7.1.1	Introduction	32
7.1.2	Requirements	32
8	UE Measurements Procedures	32
8.1	General Measurement Requirements in CELL_DCH State	32
8.1.1	Introduction	32
8.1.2	Requirements	33
8.1.2.1	UE Measurement Capability	33
8.1.2.2	FDD intra frequency measurements	33
8.1.2.2.1	Identification of a new cell	33
8.1.2.2.2	UE CPICH measurement capability	34
8.1.2.2.3	Periodic Reporting	34
8.1.2.2.4	Event-triggered Periodic Reporting	34
8.1.2.2.5	Event Triggered Reporting	35
8.1.2.3	FDD inter frequency measurements	35
8.1.2.3.1	Identification of a new cell	35
8.1.2.3.2	UE CPICH measurement capability	36
8.1.2.3.3	Periodic Reporting	36
8.1.2.3.4	Event Triggered Reporting	36
8.1.2.4	TDD measurements	36
8.1.2.4.1	Identification of a new cell	37
8.1.2.4.1.1	3.84 Mcps TDD Option	

8.1.2.4.1.2	1.28 Mcps TDD Option	
8.1.2.4.2	P-CCPCH RSCP measurement period	37
8.1.2.4.3	Periodic Reporting	38
8.1.2.4.4	Event Triggered Reporting	38
8.1.2.5	GSM measurements	38
8.1.2.5.1	GSM carrier RSSI	38
8.1.2.5.2	BSIC verification	39
8.1.2.5.3	Periodic Reporting	42
8.1.2.5.4	Event Triggered Reporting	42
8.2	Measurements in CELL_DCH State with special requirements	43
8.2.1	Introduction	43
8.2.2	Requirements	43
8.3	Capabilities for Support of Event Triggering and Reporting Criteria in CELL_DCH state	43
8.3.1	Introduction	43
8.3.2	Requirements	44
8.4	Measurements in CELL_FACH State	44
8.4.1	Introduction	44
8.4.2	Requirements	44
8.4.2.1	UE Measurement Capability	44
8.4.2.2	FDD intra frequency measurements	45
8.4.2.2.1	Identification of a new cell	45
8.4.2.2.2	UE CPICH measurement capability	46
8.4.2.2.3	RACH reporting	46
8.4.2.3	FDD inter frequency measurements	46
8.4.2.3.1	Identification of a new cell	46
8.4.2.3.2	UE CPICH measurement capability	46
8.4.2.4	TDD measurements	47
8.4.2.4.1	Identification of a new cell	47
8.4.2.4.1.1	3.84 Mcps TDD Option	
8.4.2.4.1.2	1.28 Mcps TDD Option	
8.4.2.4.2	P-CCPCH RSCP measurement period	48
8.4.2.5	GSM measurements	48
8.4.2.5.1	GSM carrier RSSI	48
8.4.2.5.2	BSIC verification	49
8.5	Capabilities for Support of Event Triggering and Reporting Criteria in CELL_FACH state	52
8.5.1	Introduction	52
8.5.2	Requirements	52
9	Measurements Performance Requirements	52
9.1	Measurement Performance for UE	52
9.1.1	CPICH RSCP	52
9.1.1.1	Intra frequency measurements accuracy	52
9.1.1.1.1	Absolute accuracy requirement	53
9.1.1.1.2	Relative accuracy requirement	53
9.1.1.2	Inter frequency measurement accuracy	53
9.1.1.2.1	Relative accuracy requirement	53
9.1.1.3	CPICH RSCP measurement report mapping	54
9.1.2	CPICH Ec/Io	54
9.1.2.1	Intra frequency measurements accuracy	54
9.1.2.1.1	Absolute accuracy requirement	54
9.1.2.1.2	Relative accuracy requirement	55
9.1.2.2	Inter frequency measurement accuracy	55
9.1.2.2.1	Absolute accuracy requirement	55
9.1.2.2.2	Relative accuracy requirement	55
9.1.2.3	CPICH Ec/Io measurement report mapping	56
9.1.3	UTRA Carrier RSSI	56
9.1.3.1	Absolute accuracy requirement	56
9.1.3.2	Relative accuracy requirement	56
9.1.3.3	UTRA Carrier RSSI measurement report mapping	57
9.1.4	GSM carrier RSSI	57
9.1.5	Transport channel BLER	57
9.1.5.1	BLER measurement requirement	57

9.1.5.2	Transport channel BLER measurement report mapping	58
9.1.6	UE transmitted power	58
9.1.6.1	Accuracy requirement.....	58
9.1.6.2	UE transmitted power measurement report mapping.....	58
9.1.7	SFN-CFN observed time difference	59
9.1.7.1	Intra frequency measurement requirement	59
9.1.7.2	Inter frequency measurement requirement	59
9.1.7.3	SFN-CFN observed time difference measurement report mapping	60
9.1.8	SFN-SFN observed time difference.....	60
9.1.8.1	SFN-SFN observed time difference type 1	60
9.1.8.1.1	Measurement requirement.....	60
9.1.8.1.2	SFN-SFN observed time difference type 1 measurement report mapping	61
9.1.8.2	SFN-SFN observed time difference type 2	61
9.1.8.2.1	Intra frequency measurement requirement accuracy without IPDL period active	61
9.1.8.2.2	Intra frequency measurement requirement accuracy with IPDL period active	62
9.1.8.2.3	Inter frequency measurement requirement accuracy.....	62
9.1.8.2.4	SFN-SFN observed time difference type 2 measurement report mapping	63
9.1.9	UE Rx-Tx time difference	63
9.1.9.1	UE Rx-Tx time difference type 1.....	63
9.1.9.1.1	Measurement requirement.....	63
9.1.9.1.2	UE Rx-Tx time difference type 1 measurement report mapping.....	63
9.1.9.2	UE Rx-Tx time difference type 2.....	64
9.1.9.2.1	Measurement requirement.....	64
9.1.9.2.2	UE Rx-Tx time difference type 2 measurement report mapping.....	64
9.1.10	Observed time difference to GSM cell	64
9.1.10.1	Measurement requirement.....	64
9.1.10.2	Observed time difference to GSM cell measurement report mapping	65
9.1.11	P-CCPCH RSCP.....	65
9.1.11.1	Absolute accuracy requirements	65
9.1.11.1.1	3.84 Mcps TDD Option	
9.1.11.1.2	1.28 Mcps TDD Option	
9.1.11.2	P-CCPCH RSCP measurement report mapping.....	65
9.1.12	UE GPS Timing of Cell Frames for UE positioning.....	66
9.1.12.1	UE GPS timing of Cell Frames for UE positioning measurement report mapping.....	66
9.2	Measurements Performance for UTRAN	66
9.2.1	Received total wideband power	67
9.2.1.1	Absolute accuracy requirement.....	67
9.2.1.2	Relative accuracy requirement.....	67
9.2.1.3	Received total wideband power measurement report mapping.....	67
9.2.2	SIR	67
9.2.2.1	Accuracy requirement.....	67
9.2.2.2	SIR measurement report mapping	68
9.2.3	SIR _{error}	68
9.2.3.1	Accuracy requirement.....	68
9.2.3.2	SIR _{error} measurement report mapping	68
9.2.4	Transmitted carrier power.....	69
9.2.4.1	Accuracy requirement.....	69
9.2.4.2	Transmitted carrier power measurement report mapping	69
9.2.5	Transmitted code power.....	69
9.2.5.1	Absolute accuracy requirement.....	69
9.2.5.2	Relative accuracy requirement.....	69
9.2.5.3	Transmitted code power measurement report mapping	70
9.2.6	(void)	70
9.2.7	Physical channel BER.....	70
9.2.7.1	Accuracy requirement.....	70
9.2.7.2	Physical channel BER measurement report mapping	70
9.2.8	Round trip time	71
9.2.8.1	Absolute accuracy requirement.....	71
9.2.8.2	Round trip time measurement report mapping.....	71
9.2.9	Transport Channel BER.....	71
9.2.9.1	Accuracy requirement.....	71
9.2.9.2	Transport channel BER measurement report mapping	72

9.2.10	UTRAN GPS Timing of Cell Frames for UE positioning	72
9.2.10.1	Accuracy requirement	72
9.2.10.2	UTRAN GPS timing of Cell Frames for UE positioning measurement report mapping	72
9.2.11	PRACH/PCPCH Propagation delay	73
9.2.11.1	Accuracy requirement	73
9.2.11.1.1	PRACH Propagation delay.....	73
9.2.11.1.2	PCPCH Propagation delay	73
9.2.11.2	PRACH/PCPCH Propagation delay measurement report mapping	73
9.2.12	Acknowledged PRACH preambles.....	73
9.2.12.1	Acknowledged PRACH preambles measurement report mapping.....	73
9.2.13	Detected PCPCH access preambles	74
9.2.13.1	Detected PCPCH access preambles measurement report mapping.....	74
9.2.14	Acknowledged PCPCH access preambles	74
9.2.14.1	Acknowledged PCPCH access preambles measurement report mapping	74
9.2.15	SFN-SFN observed time difference.....	75
9.2.15.1	Accuracy requirement	75
9.2.15.1.1	Accuracy requirement without IPDL	75
9.2.15.1.2	Accuracy requirement with IPDL	75
9.2.15.2	SFN-SFN observed time difference measurement report mapping.....	75
Annex A (normative): Test Cases.....		76
A.1	Purpose of Annex.....	76
A.2	Requirement classification for statistical testing	76
A.2.1	Types of requirements in TS 25.133.....	76
A.3	Reserved for Future Use	77
A.4	Idle Mode.....	77
A.4.1	Cell selection	77
A.4.2	Cell Re-Selection	77
A.4.2.1	Scenario 1: Single carrier case.....	78
A.4.2.1.1	Test Purpose and Environment.....	78
A.4.2.1.2	Test Requirements.....	79
A.4.2.2	Scenario 2: Multi carrier case	79
A.4.2.2.1	Test Purpose and Environment.....	79
A.4.2.2.2	Test Requirements.....	80
A.4.3	UTRAN to GSM Cell Re-Selection.....	81
A.4.3.1	Scenario 1	81
A.4.3.1.1	Test Purpose and Environment.....	81
A.4.3.1.2	Test Requirements.....	82
A.4.3.2	Scenario 2	82
A.4.3.2.1	Test Purpose and Environment.....	82
A.4.3.2.2	Test Requirements.....	83
A.4.4	FDD/TDD Cell Re-selection.....	84
A.4.4.1	Test Purpose and Environment	84
A.4.4.1.1	3.84 Mcps TDD Option	
A.4.4.1.2	1.28 Mcps TDD Option	
A.4.4.2	Test Requirements	85
A.5	UTRAN Connected Mode Mobility	85
A.5.1	FDD/FDD Soft Handover	85
A.5.1.1	Test Purpose and Environment	85
A.5.1.1.1	Test procedure.....	86
A.5.1.2	Test Requirements	87
A.5.2	FDD/FDD Hard Handover.....	87
A.5.2.1	Handover to intra-frequency cell	87
A.5.2.1.1	Test Purpose and Environment.....	87
A.5.2.1.2	Test Requirements.....	88
A.5.2.2	Handover to inter-frequency cell	88
A.5.2.2.1	Test Purpose and Environment.....	88

A.5.2.2.2	Test Requirements.....	89
A.5.3	FDD/TDD Handover	90
A.5.3.1	Test purpose and Environment	90
A.5.3.1.1	3.84 Mcps TDD Option	
A.5.3.1.2	1.28 Mcps TDD Option	
A.5.3.2	Test Requirements	91
A.5.4	Inter-system Handover from UTRAN FDD to GSM.....	91
A.5.4.1	Test Purpose and Environment.....	91
A.5.4.2	Test Requirements	93
A.5.5	Cell Re-selection in CELL_FACH	93
A.5.5.1	One frequency present in neighbour list	93
A.5.5.1.1	Test Purpose and Environment.....	93
A.5.5.1.2	Test Requirements.....	95
A.5.5.2	Two frequencies present in the neighbour list	96
A.5.5.2.1	Test Purpose and Environment.....	96
A.5.5.2.2	Test Requirements.....	97
A.5.5.3	Cell Reselection to GSM	98
A.5.5.3.1	Test Purpose and Environment.....	98
A.5.5.3.2	Test Requirements.....	100
A.5.6	Cell Re-selection in CELL_PCH	100
A.5.6.1	One frequency present in the neighbour list	100
A.5.6.1.1	Test Purpose and Environment.....	100
A.5.6.1.2	Test Requirements.....	101
A.5.6.2	Two frequencies present in the neighbour list	102
A.5.6.2.1	Test Purpose and Environment.....	102
A.5.6.2.2	Test Requirements.....	103
A.5.7	Cell Re-selection in URA_PCH.....	104
A.5.7.1	One frequency present in the neighbour list	104
A.5.7.1.1	Test Purpose and Environment.....	104
A.5.7.1.2	Test Requirements.....	105
A.5.7.2	Two frequencies present in the neighbour list	105
A.5.7.2.1	Test Purpose and Environment.....	105
A.5.7.2.2	Test Requirements.....	106
A.6	RRC Connection Control.....	107
A.6.1	RRC Re-establishment delay	107
A.6.1.1	Test Purpose and Environment	107
A.6.1.1.1	TEST 1	107
A.6.1.1.2	TEST 2	108
A.6.1.2	Test Requirements	109
A.6.1.2.1	Test 1	109
A.6.1.2.2	Test 2.....	109
A.6.2	Random Access	110
A.6.2.1	Test Purpose and Environment.....	110
A.6.2.2	Test Requirements	111
A.6.2.2.1	Correct behaviour when receiving an ACK	111
A.6.2.2.2	Correct behaviour when receiving an NACK	111
A.6.2.2.3	Correct behaviour at Time-out	112
A.6.2.2.4	Correct behaviour when reaching maximum transmit power.....	112
A.6.3	Void	112
A.6.4	Transport format combination selection in UE.....	112
A.6.4.1	Test Purpose and Environment.....	112
A.6.4.1.1	Interactive or Background, PS, UL: 64 kbps.....	112
A.6.4.2	Test Requirements	113
A.6.4.2.1	Interactive or Background, PS, UL: 64 kbps.....	113
A.7	Timing and Signalling Characteristics.....	114
A.7.1	UE Transmit Timing	114
A.7.1.1	Test Purpose and Environment	114
A.7.1.2	Test Requirements	115
A.8	UE Measurements Procedures	116
A.8.1	FDD intra frequency measurements	116

A.8.1.1	Event triggered reporting in AWGN propagation conditions	116
A.8.1.1.1	Test Purpose and Environment.....	116
A.8.1.1.2	Test Requirements.....	116
A.8.1.2	Event triggered reporting of multiple neighbours in AWGN propagation condition.....	117
A.8.1.2.1	Test Purpose and Environment.....	117
A.8.1.2.2	Test Requirements.....	118
A.8.1.3	Event triggered reporting of two detectable neighbours in AWGN propagation condition.....	118
A.8.1.3.1	Test Purpose and Environment.....	118
A.8.1.3.2	Test Requirements.....	119
A.8.1.4	Correct reporting of neighbours in fading propagation condition.....	120
A.8.1.4.1	Test Purpose and Environment.....	120
A.8.1.4.2	Test Requirements.....	120
A.8.2	FDD inter frequency measurements	121
A.8.2.1	Correct reporting of neighbours in AWGN propagation condition	121
A.8.2.1.1	Test Purpose and Environment.....	121
A.8.2.1.2	Test Requirements.....	122
A.8.3	TDD measurements	122
A.8.3.1	Correct reporting of TDD neighbours in AWGN propagation condition	122
A.8.3.1.1	Test Purpose and Environment.....	122
A.8.3.1.1.1	3.84 Mcps TDD Option	
A.8.3.1.1.2	1.28 Mcps TDD Option	
A.8.3.1.2	Test Requirements.....	123
A.8.4	GSM measurements	124
A.8.4.1	Correct reporting of GSM neighbours in AWGN propagation condition.....	124
A.8.4.1.1	Test Purpose and Environment.....	124
A.8.4.1.2	Test Requirements.....	125
A.9	Measurement Performance Requirements	125
A.9.1	Measurement Performance for UE	126
A.9.1.1	CPICH RSCP.....	126
A.9.1.1.1	Test Purpose and Environment.....	126
A.9.1.1.1.1	Intra frequency test parameters.....	126
A.9.1.1.1.2	Inter frequency test parameters.....	126
A.9.1.1.2	Test Requirements.....	127
A.9.1.2	CPICH Ec/Io.....	127
A.9.1.2.1	Test Purpose and Environment.....	127
A.9.1.2.1.1	Intra frequency test parameters.....	127
A.9.1.2.1.2	Inter frequency test parameters.....	128
A.9.1.2.2	Test Requirements.....	128
A.9.1.3	UTRA Carrier RSSI.....	128
A.9.1.3.1	Test Purpose and Environment.....	128
A.9.1.3.2	Test Requirements.....	129
A.9.1.3A	GSM Carrier RSSI	129
A.9.1.3A.1	Test Purpose and Environment.....	129
A.9.1.3A.2	Test Requirements.....	130
A.9.1.3B	Transport channel BLER.....	130
A.9.1.3C	UE transmitted power.....	130
A.9.1.3C.1	Test Purpose and Environment.....	130
A.9.1.3C.1.1	Test procedure	131
A.9.1.3C.2	Test Requirements.....	131
A.9.1.4	SFN-CFN observed time difference	131
A.9.1.4.1	Test Purpose and Environment.....	131
A.9.1.4.1.1	Intra frequency test parameters.....	131
A.9.1.4.1.2	Inter frequency test parameters.....	132
A.9.1.4.2	Test Requirements.....	132
A.9.1.5	SFN-SFN observed time difference.....	132
A.9.1.5.1	SFN-SFN observed time difference type 1	132
A.9.1.5.1.1	Test Purpose and Environment.....	132
A.9.1.5.1.2	Test Requirements	133
A.9.1.5.2	SFN-SFN observed time difference type 2	133
A.9.1.5.2.1	Test Purpose and Environment.....	133
A.9.1.5.2.2	Test Requirements	134

A.9.1.6 UE Rx-Tx time difference 134

A.9.1.6.1 UE Rx-Tx time difference type 1 134

A.9.1.6.1.1 Test Purpose and Environment 134

A.9.1.6.1.2 Test Requirements 134

A.9.1.6.2 UE Rx-Tx time difference type 2 134

A.9.1.6.2.1 Test Purpose and Environment 134

A.9.1.6.2.2 Test Requirements 135

A.9.1.7 Observed time difference to GSM cell 135

A.9.1.7.1 Test Purpose and Environment 135

A.9.1.7.2 Test Requirements 135

A.9.1.8 P-CCPCH RSCP 135

A.9.1.8.1 Test Purpose and Environment 135

A.9.1.8.1.1 Inter frequency test parameters 135

[A.9.1.8.1.1.1 3.84 Mcps TDD Option](#)

[A.9.1.8.1.1.2 1.28 Mcps TDD Option](#)

A.9.1.8.2 Test Requirements 136

Annex B (informative): Change History 137

[<next changed section>](#)

8.1.2.4 TDD measurements

The requirements in this section shall apply to UE supporting FDD and TDD.

In the CELL_DCH state when a transmission gap pattern sequence with the “TDD measurements” purpose is provided by the network, the UE shall continuously measure identified inter frequency TDD cells and search for new inter frequency TDD cells indicated in the measurement control information.

In order for the requirements in the following subsections to apply, the Beacon timeslots of the inter-frequency TDD cells indicated in the measurement control information shall either be synchronised or non-overlapping in time such that the UE can measure an inter-frequency TDD cell at least once in every transmission gap pattern as given in [7] for the slot allocation case in use in this cell and by assuming 2*0.5 ms implementation margin per transmission gap.

UTRAN shall provide a transmission gap pattern sequence with measurement purpose TDD measurement using the combinations for TGL1, TGL2 and TGD in Table 8.2:

Table 8.2

TGL1 [slots]	TGL2 [slots]	TGD [slots]
10	-	undefined
10	10	15...269
14	7	15...269

8.1.2.4.1 Identification of a new cell


[8.1.2.4.1.1 3.84 Mcps TDD Option](#)

When transmission gaps are scheduled for inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within

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

If the UE does not need compressed mode to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

An inter-frequency TDD cell shall be considered detectable when P-CCPCH $E_c/I_o \geq -8$ dB and SCH $E_c/I_o \geq -13$ dB. 

The received P-CCPCH E_c/I_o is defined as

$$\left(\frac{P-CCPCH-E_c}{I_o} \right)_{in \text{ dB}} = \left(\frac{P-CCPCH-E_c}{I_{or}} \right)_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{in \text{ dB}}$$

and the received SCH E_c/I_o is defined as

$$\left(\frac{SCH-E_c}{I_o} \right)_{in \text{ dB}} = \left(\frac{SCH-E_c}{I_{or}} \right)_{in \text{ dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{in \text{ dB}}$$

[8.1.2.4.1.2 1.28 Mcps TDD Option](#)

[When transmission gaps are scheduled for inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within](#)

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

If the UE does not need compressed mode to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

A cell shall be considered detectable when P-CCPCH $E_c/I_o > -8$ dB and DwPCH $E_c/I_o > -5$ dB. When L3 filtering is used an additional delay can be expected.

The received P-CCPCH E_c/I_o is defined as

$$\left(\frac{P - \text{CCPCH} - E_c}{I_o} \right)_{\text{in dB}} = \left(\frac{P - \text{CCPCH} - E_c}{I_{or}} \right)_{\text{in dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{\text{in dB}}$$

The received DwPTS E_c/I_o is defined as

$$\left(\frac{\text{DwPCH} - E_c}{I_o} \right)_{\text{in dB}} = \left(\frac{\text{DwPCH} - E_c}{I_{or}} \right)_{\text{in dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{\text{in dB}}$$

8.1.2.4.2 P-CCPCH RSCP measurement period

When transmission gaps are scheduled for inter frequency TDD measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.11 and with a measurement period as given by

$$T_{\text{measurement TDD inter}} = \text{Max} \left\{ T_{\text{Measurement Period TDD inter}}, N_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{Measurement Period TDD inter}}}{N_{\text{TDD inter}}} \cdot N_{\text{Freq}} \right\} \text{ms}$$

If the UE does not need compressed mode to perform inter-frequency TDD measurements, the measurement period for inter-frequency TDD measurements shall be 480 ms.

The UE shall be capable of performing P-CCPCH RSCP measurements for $X_{\text{basic measurement TDD inter}}$ inter-frequency TDD cells per TDD frequency of the monitored set and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{\text{measurement TDD inter}}$.

where

$$X_{\text{basic measurement TDD inter}} = 6 \text{ (cells)}$$

$T_{\text{Measurement_Period TDD inter}} = 480$ ms. The time period used for calculating the measurement period $T_{\text{measurement_TDD inter}}$ for inter frequency P-CCPCH RSCP measurements.

$N_{\text{TDD inter}}$: This is the smallest resulting integer number of transmission gap patterns in a transmission gap pattern sequence assigned to UE by UTRAN for inter frequency TDD measurements during the time period $T_{\text{Measurement_Period TDD inter}}$ with an arbitrarily chosen timing.

$N_{\text{basic_identify_TDD inter}} = 80$. This is the number of transmission gap patterns in a transmission gap pattern sequence for inter-frequency TDD measurements during the time period used in the inter frequency TDD equation where the maximum allowed time for the UE to identify a new inter frequency TDD cell is defined.

$N_{\text{basic_measurement_TDD inter}} = 5$. This is the number of transmission gap patterns in a transmission gap pattern sequence for inter-frequency TDD measurements during the time period $T_{\text{Measurement_Period TDD inter}}$ with an arbitrarily chosen timing that is used in the inter-frequency TDD equation for defining where the measurement period for inter frequency P-CCPCH RSCP measurements is defined.

N_{Freq} : This is the number of TDD frequencies indicated in the inter frequency measurement control information.

8.1.2.4.3 Periodic Reporting

Reported measurements in periodically triggered measurement reports shall meet the requirements in section 9.

8.1.2.4.4 Event Triggered Reporting

Reported measurements in event triggered measurement reports shall meet the requirements in section 9.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

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

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify TDD inter}}$ defined in Section 8.1.2.4.1 When L3 filtering is used an additional delay can be expected.

<next changed section>

8.4.2.4 TDD measurements

The requirements in this section shall apply to UE supporting FDD and TDD.

In the CELL_FACH state when a measurement occasion cycle is provided by the network the UE shall continuously measure identified inter frequency TDD cells and search for new inter-frequency TDD cells indicated in the measurement control information.

8.4.2.4.1 Identification of a new cell

8.4.2.4.1.1 3.84 Mcps TDD Option

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

$$T_{\text{identify, TDD}} = \text{Max} \left\{ 5000, \text{Ceil} \left\{ \frac{T_{\text{basic identify TDD inter}}}{T_{\text{Inter FACH}}} \right\} \cdot T_{\text{meas}} \cdot N_{\text{Freq, TDD}} \right\} \text{ ms}$$

where

$$T_{\text{basic_identify_TDD,inter}} = 800\text{ms}$$

$N_{\text{Freq, TDD}}$: Number of TDD frequencies indicated in the inter-frequency cell info list

T_{Meas} is specified in section 8.4.2.1.

$T_{\text{Inter FACH}}$ is specified in section 8.4.2.3.1

If the UE does not need measurement occasions to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

An inter-frequency TDD cell shall be considered detectable when $P\text{-CCPCH}_{E_c}/I_o \geq -8$ dB and $SCH_{E_c}/I_o \geq -13$ dB.

The received $P\text{-CCPCH}_{E_c}/I_o$ is defined as

$$\left(\frac{P\text{-CCPCH}_{E_c}}{I_o} \right)_{\text{in dB}} = \left(\frac{P\text{-CCPCH}_{E_c}}{I_{or}} \right)_{\text{in dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{\text{in dB}}$$

and the received SCH_{E_c}/I_o is defined as

$$\left(\frac{SCH_{E_c}}{I_o} \right)_{\text{in dB}} = \left(\frac{SCH_{E_c}}{I_{or}} \right)_{\text{in dB}} - \left(\frac{I_o}{\hat{I}_{or}} \right)_{\text{in dB}}$$

8.4.2.4.1.2 1.28 Mcps TDD Option

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

$$T_{\text{identify, TDD}} = \text{Max} \left\{ 5000, \text{Ceil} \left\{ \frac{T_{\text{basic identify TDD inter}}}{T_{\text{Inter FACH}}} \right\} \cdot T_{\text{meas}} \cdot N_{\text{Freq, TDD}} \right\} \text{ ms}$$

where

$$T_{\text{basic_identify_TDD,inter}} = 800\text{ms}$$

$N_{\text{Freq, TDD}}$: Number of TDD frequencies indicated in the inter-frequency cell info list

T_{Meas} is specified in section 8.4.2.1.

$T_{\text{Inter FACH}}$ is specified in section 8.4.2.3.1

If the UE does not need measurement occasions to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

A cell shall be considered detectable when P-CCPCH $E_c/I_o > -8$ dB and DwPCH $E_c/I_o > -5$ dB.

The received P-CCPCH E_c/I_o is defined as

$$\left(\frac{P - \text{CCPCH} - E_c}{I_o} \right)_{\text{in dB}} = \left(\frac{P - \text{CCPCH} - E_c}{I_{or}} \right)_{\text{in dB}} - \left(\hat{I}_{or} \right)_{\text{in dB}}$$

The received DwPTS E_c/I_o is defined as

$$\left(\frac{\text{DwPCH} - E_c}{I_o} \right)_{\text{in dB}} = \left(\frac{\text{DwPCH} - E_c}{I_{or}} \right)_{\text{in dB}} - \left(\hat{I}_{or} \right)_{\text{in dB}}$$

8.4.2.4.2 P-CCPCH RSCP measurement period

When a measurement occasion cycle as previously described is scheduled for inter frequency TDD measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.11 and with a measurement period as given by

$$T_{\text{measurement TDD}} = \text{Max} \left\{ T_{\text{Measurement_Period TDD inter}}, 2 \cdot T_{\text{meas}}, \text{Ceil} \left\{ \frac{T_{\text{basic measurement TDD inter}}}{T_{\text{Inter FACH}}} \right\} \cdot T_{\text{meas}} \cdot N_{\text{Freq,TDD}} \right\}$$

where

$T_{\text{basic measurement TDD inter}} = 50$ ms.

$T_{\text{Measurement Period TDD inter}}$ is specified in section 8.1.2.4.2.

T_{Meas} is specified in section 8.4.2.1.

$T_{\text{Inter FACH}}$ is specified in section 8.4.2.3.1

$N_{\text{Freq,TDD}}$: This is the number of TDD frequencies indicated in the inter-frequency cell info list

If the UE does not need measurement occasions to perform inter-frequency TDD measurements, the measurement period for inter frequency TDD measurements is 480 ms.

The UE shall be capable of performing P-CCPCH RSCP measurements for $X_{\text{basic measurement TDD inter}}$ inter-frequency TDD cells per TDD frequency of the monitored set and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{\text{Measurement TDD}}$.

$X_{\text{basic measurement TDD inter}}$ is defined in section 8.1.2.4.2

<next changed section>

9.1.11 P-CCPCH RSCP

NOTE: This measurement is used for handover between UTRA FDD and UTRA TDD.

The requirements in this section are valid for terminals supporting this capability.

The measurement period for CELL_DCH state can be found in sub clause 8.1.2.4. The measurement period for CELL_FACH state can be found in sub clause 8.4.2.4.

9.1.11.1 Absolute accuracy requirements

9.1.11.1.1 3.84 Mcps TDD Option

The accuracy requirement in table 9.31 is valid under the following conditions:

$P\text{-CCPCH_RSCP} \geq -102 \text{ dBm}$.

$$\left(\frac{I_o}{\hat{I}_{or}} \right)_{in \text{ dB}} - \left(\frac{P - CCPCH - E_c}{I_{or}} \right)_{in \text{ dB}} \leq 8 \text{ dB}$$

Table 9.31: P-CCPCH_RSCP Inter frequency absolute accuracy

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

9.1.11.1.2 1.28 Mcps TDD Option

The accuracy requirement in table 9.31A is valid under the following conditions:

$P\text{-CCPCH RSCP} \geq -102 \text{ dBm}$

$P\text{-CCPCH } E_c/I_o > -8 \text{ dB}$

Table 9.31A: P-CCPCH_RSCP Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal conditions	Extreme conditions	Io [dBm/1.28 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

9.1.11.2 P-CCPCH RSCP measurement report mapping

The reporting range is for $P\text{-CCPCH RSCP}$ is from -115 ... -25 dBm.

In table 9.32 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.32

Reported value	Measured quantity value	Unit
PCCPCH_RSCP_LEV _00	PCCPCH RSCP < -115	dBm
PCCPCH_RSCP_LEV _01	$-115 \leq \text{PCCPCH RSCP} < -114$	dBm
PCCPCH_RSCP_LEV _02	$-114 \leq \text{PCCPCH RSCP} < -113$	dBm
PCCPCH_RSCP_LEV _03	$-113 \leq \text{PCCPCH RSCP} < -112$	dBm
...
PCCPCH_RSCP_LEV _89	$-27 \leq \text{PCCPCH RSCP} < -26$	dBm
PCCPCH_RSCP_LEV _90	$-26 \leq \text{PCCPCH RSCP} < -25$	dBm
PCCPCH_RSCP_LEV _91	$-25 \leq \text{PCCPCH RSCP}$	dBm

<next changed section>

A.4.4 FDD/TDD Cell Re-selection

A.4.4.1 Test Purpose and Environment

[A.4.4.1.1 3.84 Mcps TDD Option](#)

This test is to verify the requirement for the FDD/TDD cell re-selection delay reported in section 4.2.2.

This scenario implies the presence of UTRA FDD and 1 UTRA TDD cell as given in Table A.4.8, A.4.9 and A4.10. The maximum repetition period of the relevant system information blocks that need to be received by the UE to camp on a cell shall be 1280 ms.

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

Table A.4.8: General test parameters for FDD/TDD cell re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	FDD cell
	Neighbour cells		Cell2	TDD cell
Final condition	Active cell		Cell2	TDD cell
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table A.4.9: FDD/TDD cell re-selection

Parameter	Unit	Cell 1	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
OCNS_Ec/Ior	dB	-0.941	
\hat{I}_{or}/I_{oc}	dB	9	3
I_{oc}	dBm / 3.84 MHz	-70	
CPICH_RSCP	dBm	-71	-77
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH_Ec/No	
Qrxlevmin	dBm	-115	
Qoffset1s,n	dB	0	
Qhyst1	dB	0	
PENALTY_TIME	s	0	
TEMPORARY_OFFSET	dB	0	
Treselection	s	0	
Sintrasearch	dB	not sent	
Sintersearch	dB	not sent	

Table A.4.10: Cell 2 specific test parameters for FDD/TDD Cell Re-Selection

Parameter	Unit	Cell 2			
		0		8	
DL timeslot number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH_Ec/lor	dB	-3		n.a.	
PICH_Ec/lor	dB	n.a.		-3	
SCH_Ec/lor	dB	-9			
SCH_t _{offset}	dB	10			
OCNS_Ec/lor	dB	-3.12			
\hat{I}_{or}/I_{oc}	dB	-4	2	-4	2
P-CCPCH RSCP	dBm	-77	-71	n.a.	n.a.
I_{oc}	dBm/3,84 MHz	-70			
Propagation Condition		AWGN			
Qrxlevmin	dBm	-103			
Qoffset2 _{s,n}	dB	0			
Qhyst2	dB	0			
PENALTY_TIME	s	0			
TEMPORARY_OFFSET	dB	0			
Treselection	s	0			
Sintrasearch	dB	not sent			
Sintersearch	dB	not sent			
Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.					

A.4.4.1.2 1.28 Mcps TDD Option

This test is to verify the requirement for the FDD/TDD cell re-selection delay reported in section 4.2.2.

This scenario implies the presence of UTRA FDD and 1 UTRA TDD cell as given in Table A.4.8A, A.4.9A and A.4.10A. The maximum repetition period of the relevant system information blocks that need to be received by the UE to camp on a cell shall be 1280 ms.

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

Table A.4.8A: General test parameters for FDD/TDD cell re-selection

Parameter	Unit	Value	Comment
Initial condition	Active cell	Cell1	FDD cell
	Neighbour cells	Cell2	TDD cell
Final condition	Active cell	Cell2	TDD cell
UE_TXPWR_MAX_RACH	dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value		1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS			Not used
DRX cycle length	s	1.28	The value shall be used for all cells in the test.
T1	s	15	
T2	s	15	

Table A.4.9A: FDD/TDD cell re-selection

Parameter	Unit	Cell 1	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH Ec/lor	dB	-10	
P-CCPCH Ec/lor	dB	-12	
SCH Ec/lor	dB	-12	
PICH Ec/lor	dB	-15	
OCNS Ec/lor	dB	-0.941	
\hat{I}_{or}/I_{oc}	dB	9	3
I_{oc}	dBm / 3.84 MHz	-70	
CPICH RSCP	dBm	-71	-77
Propagation Condition		AWGN	
Cell selection and reselection quality measure		CPICH Ec/No	
Qrxlevmin	dBm	-115	
Qoffset1 _{s,n}	dB	0	
Qhyst1	dB	0	
Treselection	s	0	
Sintrasearch	dB	not sent	
Sintersearch	dB	not sent	

Table A.4.10A: Cell 2 specific test parameters for FDD/TDD Cell Re-Selection

Parameter	Unit	Cell 2			
		0		DwPTs	
DL timeslot number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH Ec/lor	dB	-3			
DwPCH Ec/lor	dB	0			
OCNS Ec/lor	dB	-3			
\hat{I}_{or}/I_{oc}	dB	-4	2	-4	2
P-CCPCH RSCP	dBm	-77	-71		
I_{oc}	dBm/1.28 MHz	-70			
Propagation Condition		AWGN			
Qrxlevmin	dBm	-103			
Qoffset1 _{s,n}	dB	0			
Qhyst1	dB	0			
Treselection	s	0			
Sintrasearch	dB	not sent			
Sintersearch	dB	not sent			

A.4.4.2 Test Requirements

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE: The cell re-selection delay can be expressed as:

$$T_{\text{evaluateTDD}} + T_{\text{SI}}$$

where:

$T_{\text{evaluateTDD}}$ See Table 4.1 in section 4.2.2.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

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

<next changed section>

A.5.3 FDD/TDD Handover

A.5.3.1 Test purpose and Environment

[A.5.3.1.1 3.84 Mcps TDD Option](#)

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CD below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

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

Table A.5.0CA: General test parameters for FDD/TDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 2	TDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-75	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T _{SI}		s	1.28	The value shall be used for all cells in the test
T1		s	5	
T2		s	15	
T3		s	5	

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
DPCH_Ec/Ior	dB	Note 1	n.a.
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 A.5.0CC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2								
		0			2			8		
DL timeslot number		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 2								
P-CCPCH_Ec/Ior	dB	-3			n.a.			n.a.		
PICH_Ec/Ior	dB	n.a.			n.a.			-3		
SCH_Ec/Ior	dB	-9			n.a.			-9		
SCH_toffset	dB	5			n.a.			5		
DPCH_Ec/Ior	dB	n.a.			n.a.		Note 1	n.a.		
OCNS_Ec/Ior	dB	-3.12			0		Note 2	-3.12		
\hat{I}_{or}/I_{oc}	dB	-Inf	6	-Inf	6		-Inf	6		
P-CCPCH RSCP	dBm	-Inf	-67	n.a.			n.a.			
I_{oc}	dBm/3.84 MHz	-70								
Propagation Condition		AWGN								
Note 1: The DPCH level is controlled by the power control loop										
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or} .										
Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.										

[A.5.3.1.2 1.28 Mcps TDD Option](#)

[The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL_DCH state reported in section 5.3.2.1.](#)

[The test parameters are given in Table A.5.0DA, A.5.0DB and A.5.0DD below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.](#)

[UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in \[16\].](#)

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

Table A.5.0DA: General test parameters for FDD/TDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 2	TDD cell
α	DB		0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis	DB		0	Hysteresis parameter for event 2C
Time to Trigger	Ms		0	
Threshold non-used frequency	DBm		-75	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T_{SI}	S		1.28	The value shall be used for all cells in the test
T_1	S		5	
T_2	S		15	
T_3	S		5	

Table A.5.0DB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 1	
CPICH E_c/I_{or}	dB	-10	
P-CCPCH E_c/I_{or}	dB	-12	
SCH E_c/I_{or}	dB	-12	
PICH E_c/I_{or}	dB	-15	
DPCH E_c/I_{or}	dB	Note 1	n.a.
OCNS E_c/I_{or}	dB	Note 2	
\hat{I}_{or}/I_{oc}	dB	0	
I_{oc}	dBm/3.84 MHz	-70	
CPICH E_c/I_o	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_{oc} .			

Table A.5.0DC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2					
		0			DwPTS		
DL timeslot number		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 2					
P-CCPCH Ec/Ior	dB	-3					
DwPCH Ec/Ior	dB				0		
DPCH Ec/Ior	dB						Note 1
OCNS Ec/Ior	dB	-3					Note 2
\hat{I}_{or}/I_{oc}	dB	-Inf	6		-Inf	6	
P-CCPCH RSCP	dBm	-Inf	-67				
I_{oc}	dBm/1.28 MHz	-70					
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 Ior.							

A.5.3.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 70 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

<next changed section>

A.8.3 TDD measurements

A.8.3.1 Correct reporting of TDD neighbours in AWGN propagation condition

A.8.3.1.1 Test Purpose and Environment

[A.8.3.1.1.1 3.84 Mcps TDD Option](#)

The purpose of this test is to verify that the UE makes correct reporting of events when measuring on UTRA TDD cells. This test will partly verify the requirements in section 8.1.2. and 9.1.

The test parameters are given in Table A.8.13, A.8.14 and A.8.14A below. The test consists of two successive time periods, with time duration of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA FDD cell and cell 2 being a UTRA TDD neighbour cell.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

The TTI of the uplink DCCH shall be 20ms.

Table A.8.13: General test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode		A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell	Cell 1	FDD cell
	Neighbour cell	Cell 2	TDD cell
Final condition	Active cell	Cell 1	FDD cell
O	dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis	dB	0	Hysteresis parameter for event 2C
Time to Trigger	ms	0	
Threshold non-used frequency	dBm	-71	Applicable for Event 2C
Filter coefficient		0	
Monitored cell list size		6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1	s	15	
T2	s	10	

Table A.8.14: Cell 1 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 1
		T1, T2
UTRA RF Channel Number		Channel 1
CPICH_Ec/lor	dB	-10
P-CCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DPCH_Ec/lor	dB	Note 1
OCNS_Ec/lor	dB	Note 2
\hat{I}_{or}/I_{oc}	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN
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 A.8.14A: Cell 2 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 2			
		0		8	
DL timeslot number		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH_Ec/lor	dB	-3		n.a.	
PICH_Ec/lor	dB	n.a.		-3	
SCH_Ec/lor	dB	-9			
SCH_t_offset	dB	10			
OCNS_Ec/lor	dB	-3.12			
P-CCPCH RSCP	dBm	-75	-67	n.a.	n.a.
\hat{I}_{or}/I_{oc}	dB	-2	6	-2	6
I_{oc}	dBm/3.84 MHz	-70			
Propagation Condition		AWGN			
Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.					

A.8.3.1.1.2 1.28 Mcps TDD Option

The purpose of this test is to verify that the UE makes correct reporting of events when measuring on UTRA TDD cells. This test will partly verify the requirements in section 8.1.2. and 9.1.

The test parameters are given in Table A.8.14B, A.8.14C and A.8.14D below. The test consists of two successive time periods, with time duration of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA FDD cell and cell 2 being a UTRA TDD neighbour cell.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

The TTI of the uplink DCCH shall be 20ms.

Table A.8.14B: General test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 1	FDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-71	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		s	15	
T2		s	10	

Table A.8.14C: Cell 1 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 1
		T1, T2
UTRA RF Channel Number		Channel 1
CPICH E_c/I_{oc}	dB	-10
P-CCPCH E_c/I_{oc}	dB	-12
SCH E_c/I_{oc}	dB	-12
PICH E_c/I_{oc}	dB	-15
DPCH E_c/I_{oc}	dB	Note 1
OCNS E_c/I_{oc}	dB	Note 2
\hat{I}_{or}/I_{oc}	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH E_c/I_o	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_{oc} .		

Table A.8.14D: Cell 2 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

<u>Parameter</u>	<u>Unit</u>	<u>Cell 2</u>			
		<u>0</u>		<u>DwPTS</u>	
<u>DL timeslot number</u>		<u>T1</u>	<u>T2</u>	<u>T1</u>	<u>T2</u>
<u>UTRA RF Channel Number</u>		<u>Channel 2</u>			
<u>P-CCPCH Ec/lor</u>	<u>dB</u>	<u>-3</u>			
<u>DwPCH Ec/lor</u>	<u>dB</u>			<u>0</u>	
<u>OCNS Ec/lor</u>	<u>dB</u>	<u>-3</u>			
<u>P-CCPCH RSCP</u>	<u>dBm</u>	<u>-75</u>	<u>-67</u>		
<u>\hat{I}_{or}/I_{oc}</u>	<u>dB</u>	<u>-2</u>	<u>6</u>	<u>-2</u>	<u>6</u>
<u>I_{oc}</u>	<u>dBm/1.28 MHz</u>	<u>-70</u>			
<u>Propagation Condition</u>		<u>AWGN</u>			

A.8.3.1.2 Test Requirements

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 8.8 s from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of events correctly reported during repeated tests shall be at least 90%.

<next changed section>

A.9.1.8 P-CCPCH RSCP

A.9.1.8.1 Test Purpose and Environment

The purpose of this test is to verify that the P-CCPCH RSCP measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.11 and applies to UE supporting this capability.

A.9.1.8.1.1 Inter frequency test parameters

[A.9.1.8.1.1.1 3.84 Mcps TDD Option](#)

In this case both cells are on different frequencies and compressed mode as specified in TS 25.101 section A.5, set 3 of table A.22, is applied. Cell 1 is a UTRA FDD cell and cell 2 is a UTRA TDD cell.

P-CCPCH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table A.9.13.

Table A.9.13: P-CCPCH RSCP inter frequency test parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		n.a.	0 8	n.a.	0 8
UTRA RF Channel number		Channel 2	Channel 1	Channel 2	Channel 1
CPICH_Ec/lor	dB	-10	n.a.	-10	n.a.
P-CCPCH_Ec/lor	dB	-12	-3 n.a.	-12	-3 n.a.
SCH_Ec/lor	dB	-12	-9	-12	-9
SCH_toffset		n.a.	5	n.a.	5
PICH_Ec/lor	dB	-15	n.a. -3	-15	n.a. -3
DPCH_Ec/lor	dB	-15	n.a.	-15	n.a.
OCNS_Ec/lor	dB	-1.11	-3.12	-1.11	-3.12
lor	dBm/ 3.84 MHz	-60	-57.7	-84	-84.7
lor/lor	dB	9.54	7	0	3
P-CCPCH RSCP, Note 1	dBm	n.a.	-53.7 n.a.	n.a.	-84.7 n.a.
CPICH RSCP, Note 1	dBm	-60.46	n.a.	-94	n.a.
lo, Note 1	dBm/3.84 MHz	-50	-50	-81	-80
Propagation condition	-	AWGN		AWGN	
Note 1: P-CCPCH RSCP, CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves. Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.					
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed, test parameters for test 2 shall be set within 5 seconds so that the UE does not lose the Cell 2 in between the test.					

[A.9.1.8.1.1.2 1.28 Mcps TDD Option](#)

[In this case both cells are on different frequencies and compressed mode as specified in TS 25.101 section A.5, set 3 of table A.22, is applied. Cell 1 is a UTRA FDD cell and cell 2 is a UTRA TDD cell.](#)

[P-CCPCH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table A.9.13A.](#)

Table A.9.13A: P-CCPCH RSCP inter frequency test parameters

Parameter	Unit	Test 1			Test 2		
		Cell 1	Cell 2		Cell 1	Cell 2	
<u>DL timeslot number</u>		n.a.	<u>0</u>	<u>DwP</u> <u>Ts</u>	n.a.	<u>0</u>	<u>DwP</u> <u>Ts</u>
<u>UTRA RF Channel number</u>		<u>Channel 2</u>	<u>Channel 1</u>		<u>Channel 2</u>	<u>Channel 1</u>	
<u>CPICH Ec/lor</u>	dB	-10	n.a.		-10	n.a.	
<u>P-CCPCH Ec/lor</u>	dB	-12	-3		-12	-3	
<u>DwPCH Ec/lor</u>	dB	-12		0	-12		0
<u>PICH Ec/lor</u>	dB	-15	n.a.	n.a.	-15	n.a.	n.a.
<u>DPCH Ec/lor</u>	dB	-15	n.a.	n.a.	-15	n.a.	n.a.
<u>OCNS Ec/lor</u>	dB	-1.11	-3		-1.11	-3	
<u>Io</u>		<u>-60 dBm/</u> <u>3.84 MHz</u>	<u>-57.7</u> <u>dBm/1.28</u> <u>MHz</u>		<u>-84 dBm/</u> <u>3.84 MHz</u>	<u>-84.7</u> <u>dBm/1.28</u> <u>MHz</u>	
<u>Ior/loc</u>	dB	9.54	7		0	3	
<u>P-CCPCH RSCP, Note 1</u>	dBm	n.a.	-53.7		n.a.	-84.7	
<u>CPICH RSCP, Note 1</u>	dBm	-60.46	n.a.		-94	n.a.	
<u>Io, Note 1</u>		<u>-50 dBm/</u> <u>3.84 MHz</u>	<u>-50</u> <u>dBm/1.28</u> <u>MHz</u>		<u>-81 dBm/</u> <u>3.84 MHz</u>	<u>-80 dBm/1.28</u> <u>MHz</u>	
<u>Propagation condition</u>	-	AWGN			AWGN		
<u>Note 1: P-CCPCH RSCP, CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.</u>							
<u>Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed, test parameters for test 2 shall be set within 5 seconds so that the UE does not lose the Cell 2 in between the test.</u>							

A.9.1.8.2 Test Requirements

The P-CCPCH RSCP measurement accuracy shall meet the requirements in section 9.1.11.

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

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ 25.133 CR 468 ⌘ rev ⌘ Current version: 5.3.0 ⌘

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:	⌘ Removal of AMR speech codec requirement		
Source:	⌘ RAN WG4		
Work item code:	⌘ TEI4	Date:	⌘ 21/08/2002
Category:	⌘ A	Release:	⌘ Rel-5
Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:	
F (correction)		2	(GSM Phase 2)
A (corresponds to a correction in an earlier release)		R96	(Release 1996)
B (addition of feature),		R97	(Release 1997)
C (functional modification of feature)		R98	(Release 1998)
D (editorial modification)		R99	(Release 1999)
Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	⌘ The current version of TS 25.133 is not aligned with TS 26.103. According to TS 26.103, UMTS AMR2 is the default Codec Type in all terminals of Rel-4 and onwards. There is no need anymore to have UMTS AMR requirement included.
Summary of change:	⌘ 1- the requirement related to the UMTS AMR codec is removed from the table 6.1 2- reference TS 26.103 is added
Consequences if not approved:	⌘ The TS 25.133 will remain inconsistent with TS 26.103.

Clauses affected:	⌘ 2 – 6.4.2										
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
		Test specifications									
		O&M Specifications									
Other comments:	⌘ - Equivalent CRs in other Releases: CR464 cat. F to 25.133 v4.5.0										

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*.

- [1] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode"
- [2] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".
- [3] 3GPP TS 25.101: "UE Radio transmission and reception (FDD)".
- [4] 3GPP TS 25.104: "BTS Radio transmission and reception (FDD)".
- [5] 3GPP TS 25.102: "UE Radio transmission and reception (TDD)".
- [6] 3GPP TS 25.105: "BTS Radio transmission and reception (TDD)".
- [7] 3GPP TS 25.212: "Multiplexing and channel coding (FDD)".
- [8] 3GPP TS 25.141: "Base station conformance testing (FDD)".
- [9] 3GPP TS 25.142: "Base station conformance testing (TDD)".
- [10] 3GPP TS 25.113: "Base station EMC".
- [11] 3GPP TR 25.942: "RF System scenarios".
- [12] 3GPP TR 25.922: "RRM Strategies".
- [13] 3GPP TS 25.215: "Physical Layer Measurements (FDD)".
- [14] 3GPP TS 25.225: "Physical Layer Measurements (TDD)".
- [15] 3GPP TS 25.302: "Services provided by Physical Layer".
- [16] 3GPP TS 25.331: "RRC Protocol Specification".
- [17] ETSI ETR 273-1-2: "Electromagnetic compatibility and Radio spectrum Matters (ERM); 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"
- [18] 3GPP TS 25.214: "Physical layer procedures (FDD)"
- [19] 3GPP TS 25.321: "MAC protocol specification"
- [20] 3GPP TS 25.303: "Interlayer Procedures in Connected Mode"
- [21] 3GPP TS 45.008: "Digital cellular telecommunications system (Phase 2+); Radio subsystem link control"
- [22] 3GPP TS 45.005: "Digital cellular telecommunications system (Phase 2+); Radio transmission and reception"

[23] 3GPP TS 26.103: "Speech Codec List for GSM and UMTS"

...

6.4.2 Requirements

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

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

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

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

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

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

The definitions of the parameters X,Y and Z which shall be used when evaluating the *Elimination* and the *Recovery* criteria when no compressed mode patterns are activated are given in Table 6.0.

Table 6.0: X, Y, Z parameters for TFC selection

X	Y	Z
15	30	30

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

$$(T_{\text{notify}} + T_{\text{modify}} + T_{\text{L1_proc}})$$

where:

T_{notify} equals [15] ms, and

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

$T_{\text{L1_proc}}$ equals 15 ms, and

$T_{\text{adapt_max}}$ equals $\text{MAX}(T_{\text{adapt_1}}, T_{\text{adapt_2}}, \dots, T_{\text{adapt_N}})$, and

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

$T_{\text{adapt_n}}$ equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. Table 6.1 defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms.

Table 6.1: T_{adapt}

Service	T_{adapt} [ms]
UMTS_AMR	40
UMTS_AMR2	60

Table 6.1: T_{adapt}

Service	T_{adapt} [ms]
UMTS_AMR2	60

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

The Maximum UE transmitter power is defined as follows

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

where

Maximum allowed UL TX Power is set by UTRAN and defined in [16], and

UE maximum transmit power is defined by the UE power class, and specified in [3].