

# ETSI TS 125 133 V12.9.0 (2016-04)



## **Universal Mobile Telecommunications System (UMTS); Requirements for support of radio resource management (FDD) (3GPP TS 25.133 version 12.9.0 Release 12)**



---

Reference

RTS/TSGR-0425133vc90

---

Keywords

UMTS

***ETSI***

---

650 Route des Lucioles  
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° 7803/88

---

***Important notice***

The present document can be downloaded from:  
<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status.  
Information on the current status of this and other ETSI documents is available at  
<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:  
<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

---

***Copyright Notification***

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.  
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2016.  
All rights reserved.

**DECT™, PLUGTESTS™, UMTS™** and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.  
**3GPP™** and **LTE™** are Trade Marks of ETSI registered for the benefit of its Members and  
of the 3GPP Organizational Partners.  
**GSM®** and the GSM logo are Trade Marks registered and owned by the GSM Association.

---

## Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

---

## Foreword

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under  
<http://webapp.etsi.org/key/queryform.asp>.

---

## Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

---

# Contents

Intellectual Property Rights .....	2
Foreword.....	2
Modal verbs terminology.....	2
Foreword.....	17
1    Scope .....	18
2    References .....	18
3    Definitions, symbols and abbreviations .....	19
3.1    Definitions.....	19
3.2    Symbols.....	20
3.3    Abbreviations .....	21
3.4    Test tolerances.....	22
4    Idle Mode Tasks .....	23
4.1    Cell Selection .....	23
4.1.1    Introduction.....	23
4.2    Cell Re-selection .....	23
4.2.1    Introduction.....	23
4.2.2    Requirements .....	23
4.2.2.1    Measurement and evaluation of cell selection criteria S of serving cell .....	24
4.2.2.2    Measurements of intra-frequency cells .....	24
4.2.2.3    Measurements of inter-frequency FDD cells .....	25
4.2.2.4    Measurements of inter-frequency TDD cells .....	25
4.2.2.5    Measurements of inter-RAT GSM cells .....	26
4.2.2.5.1    Cell reselection based on cell ranking .....	26
4.2.2.5.2    Cell reselection based on priority information .....	26
4.2.2.5a    Measurements of inter-RAT E-UTRA cells.....	27
4.2.2.6    Evaluation of cell re-selection criteria.....	28
4.2.2.7    Maximum interruption in paging reception.....	28
4.2.2.8    Number of cells in cell lists.....	29
4.2.2.8a    Number of cells in cell lists (Increased UE carrier monitoring).....	29
4.2.2.9    Additional requirements for measurement of inter-frequency and inter-RAT cells when MBMS reception is active.....	30
4.2.2.10    MTCH Interruption time .....	30
4.2.2.11    Reselection to CSG cells .....	30
4.2.2.11.1    Reselection from a non CSG to an inter-frequency CSG cell.....	31
4.2.2.11.2    Reselection from a non CSG to an inter-RAT E-UTRA CSG cell .....	31
4.3    MBSFN cluster selection.....	32
4.3.1    Introduction.....	32
4.4    MBSFN cluster reselection .....	32
4.4.1    Introduction.....	32
4.5    Minimization of Drive Tests (MDT) .....	33
4.5.1    Introduction.....	33
4.5.2    Measurements .....	33
4.5.2.1    Requirements .....	33
4.5.3    Relative Time Stamp Accuracy .....	33
4.5.3.1    Requirements .....	33
4.5.4    Relative Time Stamp Accuracy for RRC Connection Establishment Failure Log Reporting .....	33
4.5.4.1    Requirements .....	34
5    UTRAN Connected mode mobility.....	34
5.1    FDD/FDD Soft Handover .....	34
5.1.1    Introduction.....	34
5.1.2    Requirements .....	34
5.1.2.1    Active set dimension.....	34

5.1.2.2	Active set update delay .....	34
5.1.2.3	Interruption Time .....	35
5.2	FDD/FDD Hard Handover .....	35
5.2.1	Introduction.....	35
5.2.2	Requirements .....	35
5.2.2.1	Hard handover delay .....	35
5.2.2.2	Interruption time .....	35
5.3	FDD/TDD Handover .....	36
5.3.1	Introduction.....	36
5.3.2	Requirements .....	37
5.3.2.1	FDD/TDD handover delay .....	37
5.3.2.2	Interruption time .....	37
5.4	FDD/GSM Handover .....	38
5.4.1	Introduction.....	38
5.4.2	Requirements .....	38
5.4.2.1	Handover delay .....	38
5.4.2.2	Interruption time .....	38
5.4a	FDD to E-UTRAN FDD Handover.....	39
5.4a.1	Introduction.....	39
5.4a.2	Requirements .....	39
5.4a.2.1	Handover delay .....	39
5.4a.2.2	Interruption time .....	39
5.4b	FDD to E-UTRAN TDD Handover .....	40
5.4b.1	Introduction.....	40
5.4b.2	Requirements .....	40
5.4b.2.1	Handover delay .....	40
5.4b.2.2	Interruption time .....	40
5.5	Cell Re-selection in CELL_FACH.....	40
5.5.1	Introduction.....	40
5.5.2	Requirements .....	41
5.5.2.1	Cell re-selection delay.....	41
5.5.2.1.1	Intra frequency cell reselection.....	41
5.5.2.1.2	Inter frequency cell reselection.....	41
5.5.2.1.3	FDD-TDD cell reselection.....	42
5.5.2.1.4	FDD-GSM Cell Reselection.....	42
5.5.2.1.5	FDD-E-UTRAN Cell Reselection .....	43
5.5.2.1.6	Void .....	43
5.5.2.1A	Cell reselection delay to CSG cells .....	43
5.5.2.1A.1	Reselection from a non CSG FDD to an inter-frequency FDD CSG cell.....	44
5.5.2.1A.2	Reselection from a non CSG FDD to an inter-RAT E-UTRA CSG cell .....	44
5.5.2.2	Interruption time .....	45
5.5.2.2.1	FDD-FDD cell reselection.....	45
5.5.2.2.2	FDD-TDD cell reselection.....	46
5.5.2.2.3	FDD-GSM cell reselection.....	46
5.5.2.3	Measurement and evaluation of cell selection criteria S of serving cell .....	47
5.5.2.2.4	FDD-E-UTRA Cell Reselection .....	47
5.6	Cell Re-selection in CELL_PCH.....	47
5.6.1	Introduction.....	47
5.6.2	Requirements .....	47
5.7	Cell Re-selection in URA_PCH .....	48
5.7.1	Introduction.....	48
5.7.2	Requirements .....	48
5.8	RACH reporting .....	48
5.8.1	Introduction.....	48
5.8.2	Requirements .....	48
5.9	Inter-RAT cell change order from UTRAN in CELL_DCH and CELL_FACH.....	48
5.9.1	Introduction.....	48
5.9.2	Requirements .....	49
5.9.2.1	Delay .....	49
5.9.2.2	Interruption time .....	49
5.10	Serving HS-DSCH cell change .....	50
5.10.3	Introduction.....	50

5.10.2	Requirements .....	50
5.10.2.1	Serving HS-DSCH cell change delay.....	50
5.10.2.2	Interruption time .....	50
5.11	Enhanced Serving HS-DSCH cell change.....	50
5.11.1	Introduction.....	50
5.11.2	Requirements .....	51
5.12	Interruption on Primary Uplink Frequency in DC-HSUPA .....	51
5.12.1	Introduction.....	51
5.12.2	Requirements .....	51
5.13	System information acquisition for CSG cell.....	51
5.13.1	Introduction.....	51
5.13.2	CSG SI acquisition delay .....	51
5.13.3	Interfrequency CSG decoding interruption.....	52
5.13.4	CSG reporting delay .....	52
5.14	System information acquisition for inter-RAT E-UTRA cell .....	52
5.14.1	Identification of a new CGI of inter-RAT E-UTRA FDD cell with autonomous gaps.....	52
5.14.2	Identification of a new CGI of inter-RAT E-UTRA TDD cell with autonomous gaps .....	53
5.14.3	ECGI reporting delay.....	53
5.15	Packet Loss Rate on Serving HS-DSCH Cells in Multi-Carrier HSDPA.....	53
5.15.1	Introduction.....	53
5.15.2	Requirements .....	54
6	RRC Connection Control .....	54
6.1	RRC Re-establishment .....	54
6.1.1	Introduction.....	54
6.1.2	Requirements .....	54
6.1.2.1	UE Re-establishment delay requirement.....	54
6.2	(void).....	55
6.3	Random Access .....	55
6.3.1	Introduction.....	55
6.3.2	Requirements .....	55
6.3.2.1	Correct behaviour when receiving an ACK .....	55
6.3.2.2	Correct behaviour when receiving an NACK .....	55
6.3.2.3	Correct behaviour at Time-out .....	55
6.3.2.4	Correct behaviour when reaching maximum transmit power .....	55
6.3.2.5	Correct behaviour when selecting 2 or 10msec TTI length for Enhanced Uplink in CELL_FACH state and idle mode.....	56
6.4	Transport format combination selection in UE .....	56
6.4.1	Introduction.....	56
6.4.2	Requirements .....	56
6.5	Maximum allowed UL TX Power .....	60
6.6	(void).....	61
6.7	CSG Proximity Indication for E-UTRAN and UTRAN.....	61
6.7.1	Introduction .....	61
6.7.2	Requirements.....	62
6.8	10ms Mode/20ms Mode switching in DCH .....	62
6.8.1	Introduction.....	62
6.8.2	Requirements .....	62
7	Timing and Signalling characteristics .....	62
7.1	UE Transmit Timing .....	62
7.1.1	Introduction.....	62
7.1.2	Requirements .....	63
7.2	UE Receive - Transmit Time Difference.....	63
7.2.1	Introduction.....	63
7.2.2	Requirements .....	64
7.3	UE timer accuracy .....	64
7.3.1	Introduction.....	64
7.3.2	Requirements .....	64
7.4	PRACH Burst timing accuracy .....	64
7.4.1	Introduction.....	64
7.4.2	Requirements .....	64

8	UE Measurements Procedures.....	65
8.1	General Measurement Requirements in CELL_DCH State .....	65
8.1.1	Introduction.....	65
8.1.2	Requirements .....	65
8.1.2.1	UE Measurement Capability .....	65
8.1.2.1a	UE Measurement Capability (Increased UE carrier monitoring) .....	67
8.1.2.2	FDD intra frequency measurements .....	67
8.1.2.2.1	Identification of a new cell .....	67
8.1.2.2.1.1	Identification of a new cell using IPDL gaps .....	68
8.1.2.2.2	UE CPICH measurement capability .....	68
8.1.2.2.2.1	Capabilities for measurements during IPDL gaps.....	69
8.1.2.2.3	Periodic Reporting .....	69
8.1.2.2.4	Event-triggered Periodic Reporting.....	69
8.1.2.2.5	Event Triggered Reporting .....	69
8.1.2.3	FDD inter frequency measurements .....	70
8.1.2.3.1	Identification of a new cell .....	70
8.1.2.3.2	UE CPICH measurement capability .....	72
8.1.2.3.3	Periodic Reporting .....	75
8.1.2.3.4	Event Triggered Reporting .....	75
8.1.2.4	TDD measurements.....	75
8.1.2.4.1	Identification of a new cell .....	76
8.1.2.4.1.1	3.84 Mcps TDD Option .....	76
8.1.2.4.1.2	1.28 Mcps TDD Option .....	76
8.1.2.4.2	P-CCPCH RSCP measurement period .....	77
8.1.2.4.3	Periodic Reporting .....	77
8.1.2.4.4	Event Triggered Reporting .....	77
8.1.2.5	GSM measurements .....	78
8.1.2.5.1	GSM carrier RSSI.....	78
8.1.2.5.2	BSIC verification.....	79
8.1.2.5.2.1	Initial BSIC identification .....	81
8.1.2.5.2.2	BSIC re-confirmation.....	81
8.1.2.5.3	Periodic Reporting .....	82
8.1.2.5.4	Event Triggered Reporting .....	82
8.1.2.6	E-UTRAN measurements .....	82
8.1.2.6.1	Identification of a new cell .....	83
8.1.2.6.2	E-UTRAN RSRP and RSRQ measurement period .....	83
8.1.2.6.3	Periodic reporting .....	84
8.1.2.6.4	Void.....	84
8.1.2.6.5	Event Triggered reporting .....	84
8.2	Measurements in CELL_DCH State with special requirements.....	84
8.2.1	Introduction.....	84
8.2.2	Requirements .....	84
8.3	Capabilities for Support of Event Triggering and Reporting Criteria in CELL_DCH state.....	85
8.3.1	Introduction.....	85
8.3.2	Requirements .....	85
8.4	Measurements in CELL_FACH State when HS-DSCH discontinuous reception is not ongoing .....	86
8.4.1	Introduction.....	86
8.4.2	Requirements .....	86
8.4.2.1	UE Measurement Capability when HS-DSCH discontinuous reception is not ongoing .....	86
8.4.2.1a	UE Measurement Capability when HS-DSCH discontinuous reception is not ongoing (Increased UE carrier monitoring).....	88
8.4.2.2	FDD intra frequency measurements when HS-DSCH discontinuous reception is not ongoing.....	88
8.4.2.2.1	Identification of a new cell .....	88
8.4.2.2.1.1	Identification of a new cell using IPDL gaps .....	89
8.4.2.2.2	UE CPICH measurement capability .....	89
8.4.2.2.2.1	Capabilities for measurements during IPDL gaps.....	89
8.4.2.2.3	RACH reporting .....	90
8.4.2.3	FDD inter frequency measurements when HS-DSCH discontinuous reception is not ongoing .....	90
8.4.2.3.1	Identification of a new cell .....	90
8.4.2.3.2	UE CPICH measurement capability .....	90
8.4.2.4	TDD measurements when HS-DSCH discontinuous reception is not ongoing.....	91
8.4.2.4.1	Identification of a new cell .....	91

8.4.2.4.1.2	1.28 Mcps TDD Option .....	92
8.4.2.4.2	P-CCPCH RSCP measurement period .....	92
8.4.2.5	GSM measurements when HS-DSCH discontinuous reception is not ongoing .....	93
8.4.2.5.1	GSM carrier RSSI.....	93
8.4.2.5.2	BSIC verification.....	94
8.4.2.5.2.1	Initial BSIC identification.....	95
8.4.2.5.2.2	BSIC re-confirmation.....	95
8.4.2.6	E-UTRAN measurements when HS-DSCH discontinuous reception is not ongoing .....	96
8.4.2.6.1	Identification of a new cell .....	96
8.4.2.6.2	UE RSRP and RSRQ measurement capability .....	97
8.4.2.6.3	E-UTRA measurements reporting .....	97
8.4a	Measurements in CELL_FACH State when HS-DSCH discontinuous reception is ongoing .....	98
8.4a.1	Introduction.....	98
8.4a.2	Requirements .....	98
8.4a.2.1	UE Measurement Capability .....	98
8.4a.2.2	FDD intra frequency measurements when HS-DSCH discontinuous reception is ongoing .....	98
8.4a.2.2.1	Identification of a new cell .....	98
8.4a.2.2.2	UE CPICH measurement capability .....	99
8.4a.2.2.3	RACH reporting .....	99
8.4a.2.3	FDD inter frequency measurements.....	99
8.4a.2.3.1	Identification of a new cell .....	99
8.4a.2.3.2	UE CPICH measurement capability .....	100
8.4a.2.4	TDD measurements when HS-DSCH discontinuous reception is ongoing.....	101
8.4a.2.4.1	Identification of a new cell .....	101
8.4a.2.4.1.2	1.28 Mcps TDD Option .....	102
8.4a.2.4.2	P-CCPCH RSCP measurement period .....	103
8.4a.2.5	GSM measurements when HS-DSCH discontinuous reception is ongoing .....	103
8.4a.2.5.1	GSM carrier RSSI.....	103
8.4a.2.5.2	BSIC verification.....	103
8.4a.2.5.2.1	Initial BSIC identification.....	104
8.4a.2.5.2.2	BSIC re-confirmation.....	104
8.4a.2.6	E-UTRA measurements when HS-DSCH discontinuous reception is ongoing .....	104
8.4a.2.6.1	Identification of a new cell .....	105
8.4a.2.6.2	UE RSRP and RSRQ measurement capability .....	106
8.4a.2.6.3	E-UTRA measurements reporting .....	106
8.5	Capabilities for Support of Event Triggering and Reporting Criteria in CELL_FACH state.....	107
8.5.1	Introduction.....	107
8.5.2	Requirements .....	107
9	Measurements Performance Requirements .....	107
9.1	Measurement Performance for UE .....	107
9.1.1	CPICH RSCP .....	108
9.1.1.1	Intra frequency measurements accuracy .....	108
9.1.1.1.1	Absolute accuracy requirement .....	108
9.1.1.1.2	Relative accuracy requirement .....	108
9.1.1.2	Inter frequency measurement accuracy .....	109
9.1.1.2.1	Relative accuracy requirement .....	109
9.1.1.3	CPICH RSCP measurement report mapping.....	109
9.1.2	CPICH Ec/Io .....	110
9.1.2.1	Intra frequency measurements accuracy .....	110
9.1.2.1.1	Absolute accuracy requirement .....	110
9.1.2.1.2	Relative accuracy requirement .....	110
9.1.2.2	Inter frequency measurement accuracy .....	111
9.1.2.2.1	Absolute accuracy requirement .....	111
9.1.2.2.2	Relative accuracy requirement .....	112
9.1.2.3	CPICH Ec/Io measurement report mapping.....	112
9.1.3	UTRA Carrier RSSI.....	112
9.1.3.1	Absolute accuracy requirement.....	113
9.1.3.2	Relative accuracy requirement .....	113
9.1.3.3	UTRA Carrier RSSI measurement report mapping.....	113
9.1.4	GSM carrier RSSI.....	114
9.1.4a	E-UTRAN RSRP .....	114

9.1.4b	E-UTRAN RSRQ .....	114
9.1.4c	E-UTRAN WB-RSRQ.....	115
9.1.5	Transport channel BLER .....	115
9.1.5.1	BLER measurement requirement .....	115
9.1.5.2	Transport channel BLER measurement report mapping .....	115
9.1.6	UE transmitted power .....	115
9.1.6.1	Accuracy requirement .....	115
9.1.6.2	UE transmitted power measurement report mapping .....	116
9.1.7	SFN-CFN observed time difference .....	116
9.1.7.1	Intra frequency measurement requirement.....	116
9.1.7.2	Inter frequency measurement requirement.....	117
9.1.7.3	SFN-CFN observed time difference measurement report mapping .....	118
9.1.8	SFN-SFN observed time difference .....	118
9.1.8.1	SFN-SFN observed time difference type 1 .....	118
9.1.8.1.1	Measurement requirement .....	118
9.1.8.1.2	SFN-SFN observed time difference type 1 measurement report mapping .....	119
9.1.8.2	SFN-SFN observed time difference type 2 .....	119
9.1.8.2.1	Intra frequency measurement requirement accuracy without IPDL period active.....	119
9.1.8.2.2	Intra frequency measurement requirement accuracy with IPDL period active.....	120
9.1.8.2.3	Inter frequency measurement requirement accuracy .....	121
9.1.8.2.4	SFN-SFN observed time difference type 2 measurement report mapping .....	121
9.1.9	UE Rx-Tx time difference .....	121
9.1.9.1	UE Rx-Tx time difference type 1 .....	121
9.1.9.1.1	Measurement requirement .....	122
9.1.9.1.2	UE Rx-Tx time difference type 1 measurement report mapping.....	122
9.1.9.2	UE Rx-Tx time difference type 2 .....	122
9.1.9.2.1	Measurement requirement .....	122
9.1.9.2.2	UE Rx-Tx time difference type 2 measurement report mapping.....	123
9.1.10	(void) .....	123
9.1.11	P-CCPCH RSCP .....	123
9.1.11.1	Absolute accuracy requirements .....	123
9.1.11.1.1	3,84 Mcps TDD Option.....	123
9.1.11.1.2	1.28 Mcps TDD Option.....	123
9.1.11.2	P-CCPCH RSCP measurement report mapping.....	124
9.1.12	UE GPS Timing of Cell Frames for UE positioning.....	124
9.1.12.1	UE GPS timing of Cell Frames for UE positioning measurement report mapping.....	124
9.1.13	UE transmission power headroom .....	125
9.1.13.1	Delay requirement.....	125
9.1.13.2	Measurement period requirement.....	125
9.1.13.3	UE transmission power headroom measurement report mapping.....	125
9.1.13.4	UE transmission power headroom measurement report accuracy.....	126
9.1.14	IEEE 802.11 Measurements.....	127
9.1.14.1	Introduction.....	127
9.1.14.2	IEEE 802.11 Beacon RSSI.....	127
9.1.14.2.1	Accuracy requirement .....	127
9.2	Measurements Performance for UTRAN .....	127
9.2.1	Received total wideband power .....	128
9.2.1.1	Absolute accuracy requirement.....	128
9.2.1.2	Relative accuracy requirement.....	128
9.2.1.3	Received total wideband power measurement report mapping.....	128
9.2.2	SIR .....	129
9.2.2.1	Accuracy requirement .....	129
9.2.2.2	SIR measurement report mapping.....	129
9.2.3	SIR <sub>error</sub> .....	129
9.2.3.1	Accuracy requirement .....	129
9.2.3.2	SIR <sub>error</sub> measurement report mapping.....	129
9.2.4	Transmitted carrier power.....	130
9.2.4.1	Accuracy requirement .....	130
9.2.4.2	Transmitted carrier power measurement report mapping.....	130
9.2.5	Transmitted code power.....	130
9.2.5.1	Absolute accuracy requirement.....	130
9.2.5.2	Relative accuracy requirement .....	131

9.2.5.3	Transmitted code power measurement report mapping .....	131
9.2.6	(void) .....	131
9.2.7	Physical channel BER .....	131
9.2.7.1	Accuracy requirement .....	131
9.2.7.2	Physical channel BER measurement report mapping .....	131
9.2.8	Round trip time .....	132
9.2.8.1	Absolute accuracy requirement .....	132
9.2.8.1.1	Minimum requirement .....	132
9.2.8.1.2	Requirement for extended round trip time .....	132
9.2.8.2	Round trip time measurement report mapping .....	132
9.2.8.2.1	Minimum requirement .....	132
9.2.8.2.2	Requirement for extended round trip time .....	133
9.2.9	Transport Channel BER .....	133
9.2.9.1	Accuracy requirement .....	133
9.2.9.2	Transport channel BER measurement report mapping .....	133
9.2.10	UTRAN GPS Timing of Cell Frames for UE positioning .....	134
9.2.10.1	Accuracy requirement .....	134
9.2.10.2	UTRAN GPS timing of Cell Frames for UE positioning measurement report mapping .....	134
9.2.11	PRACH Propagation delay .....	135
9.2.11.1	Accuracy requirement .....	135
9.2.11.1.1	PRACH Propagation delay .....	135
9.2.11.1.2	(void) .....	135
9.2.11.2	PRACH Propagation delay measurement report mapping .....	135
9.2.11.2.1	Minimum requirement .....	135
9.2.11.2.2	Requirement for extended PRACH propagation delay .....	135
9.2.12	Acknowledged PRACH preambles .....	136
9.2.12.1	Acknowledged PRACH preambles measurement report mapping .....	136
9.2.13	(void) .....	136
9.2.14	(void) .....	136
9.2.15	SFN-SFN observed time difference .....	136
9.2.15.1	Accuracy requirement .....	136
9.2.15.1.1	Accuracy requirement without IPDL .....	136
9.2.15.1.2	Accuracy requirement with IPDL .....	137
9.2.15.2	SFN-SFN observed time difference measurement report mapping .....	137
9.2.16	Transmitted carrier power of all codes not used for HS-PDSCH, HS-SCCH, E-AGCH, E-RGCH or E-HICH transmission .....	137
9.2.16.1	Accuracy requirement .....	137
9.2.16.2	Measurement report mapping for transmitted carrier power of all codes not used for HS-PDSCH, HS-SCCH, E-AGCH, E-RGCH or E-HICH transmission .....	138
9.2.17	DL Transmission Branch Load .....	138
9.2.17.1	Accuracy requirement .....	138
9.2.17.2	DL Transmission Branch Load measurement report mapping .....	138
9.2.18	Received scheduled E-DCH power share (RSEPS) .....	139
9.2.18.1	Accuracy requirement .....	139
9.2.18.2	Received scheduled E-DCH power share measurement report mapping .....	139
<b>Annex A (normative):</b>	<b>Test Cases .....</b>	<b>140</b>
A.1	Purpose of Annex .....	140
A.2	Requirement classification for statistical testing .....	140
A.2.1	Types of requirements in TS 25.133 .....	140
A.3	RRM test configurations .....	141
A.3.1	UE with single antenna connector .....	141
A.3.2	UE with multiple antenna connectors .....	141
A.4	Idle Mode .....	142
A.4.1	(void) .....	142
A.4.2	Cell Re-Selection .....	142
A.4.2.1	Scenario 1: Single carrier case .....	142
A.4.2.1.1	Test Purpose and Environment .....	142
A.4.2.1.2	Test Requirements .....	143

A.4.2.2	Scenario 2: Multi carrier case .....	143
A.4.2.2.1	Test Purpose and Environment .....	143
A.4.2.2.2	Test Requirements.....	144
A.4.2.3	Idle mode interfrequency reselection with an increased number of carriers .....	144
A.4.2.3.1	Test Purpose and Environment .....	145
A.4.2.3.2	Test Requirements.....	148
A.4.3	UTRAN to GSM Cell Re-Selection .....	149
A.4.3.1	Scenario 1 .....	149
A.4.3.1.1	Test Purpose and Environment .....	149
A.4.3.1.2	Test Requirements.....	150
A.4.3.2	Scenario 2 .....	150
A.4.3.2.1	Test Purpose and Environment .....	150
A.4.3.2.2	Test Requirements.....	151
A.4.3.3	Scenario 3 .....	152
A.4.3.3.1	Test Purpose and Environment .....	152
A.4.3.3.2	Test Requirements.....	153
A.4.4	FDD/TDD Cell Re-selection .....	153
A.4.4.1	Test Purpose and Environment .....	153
A.4.4.1.1	3,84 Mcps TDD Option.....	153
A.4.4.1.2	1.28 Mcps TDD Option.....	155
A.4.4.2	Test Requirements .....	156
A.4.5	UTRAN to E-UTRA Cell Reselection .....	157
A.4.5.1	E-UTRA FDD is of higher priority.....	157
A.4.5.1.1	Test Purpose and Environment .....	157
A.4.5.1.2	Test Requirements.....	160
A.4.5.2	E-UTRA FDD is of lower priority.....	160
A.4.5.2.1	Test Purpose and Environment .....	160
A.4.5.2.2	Test Requirements.....	162
A.4.5.3	RSRQ based reselection when E-UTRA FDD is of higher priority.....	163
A.4.5.3.1	Test Purpose and Environment .....	163
A.4.5.3.2	Test Requirements.....	165
A.4.5.4	E-UTRA FDD is of higher priority (Increased UE carrier monitoring).....	166
A.4.5.4.1	Test Purpose and Environment .....	166
A.4.5.4.2	Test Requirements.....	171
A.4.5A	UTRAN to E-UTRA TDD Cell Reselection with Increased Carrier Monitoring.....	172
A.4.5A.1	Test Purpose and Environment .....	172
A.4.5A.2	Test Requirements.....	175
A.5	UTRAN Connected Mode Mobility .....	176
A.5.1	FDD/FDD Soft Handover .....	176
A.5.1.1	Test Purpose and Environment .....	176
A.5.1.1.1	Test procedure .....	177
A.5.1.2	Test Requirements .....	177
A.5.2	FDD/FDD Hard Handover .....	177
A.5.2.1	Handover to intra-frequency cell .....	177
A.5.2.1.1	Test Purpose and Environment .....	177
A.5.2.1.2	Test Requirements.....	178
A.5.2.2	Handover to inter-frequency cell .....	178
A.5.2.2.1	Test Purpose and Environment .....	178
A.5.2.2.2	Test Requirements.....	179
A.5.3	(void) .....	180
A.5.4	Inter-system Handover from UTRAN FDD to GSM .....	180
A.5.4.1	Test Purpose and Environment .....	180
A.5.4.2	Test Requirements.....	182
A.5.4a	Inter-system Handover from UTRAN FDD to E-UTRAN FDD .....	182
A.5.4a.1	Test Purpose and Environment .....	182
A.5.4a.2	Test Requirements .....	185
A.5.4b	Inter-system Handover from UTRAN FDD to E-UTRAN TDD .....	185
A.5.4b.1	Test Purpose and Environment .....	185
A.5.4b.2	Test Requirements .....	188
A.5.4c	Inter-system Handover from UTRAN FDD to E-UTRAN FDD; Unknown Target Cell.....	188
A.5.4c.1	Test Purpose and Environment .....	188

A.5.4c.2	Test Requirements .....	189
A.5.4d	Inter-system Handover from UTRAN FDD to E-UTRAN TDD; Unknown Target Cell.....	190
A.5.4d.1	Test Purpose and Environment .....	190
A.5.4d.2	Test Requirements .....	191
A.5.5	Cell Re-selection in CELL_FACH.....	192
A.5.5.1	One frequency present in neighbour list and FACH measurement occasions configured .....	192
A.5.5.1.1	Test Purpose and Environment .....	192
A.5.5.1.2	Test Requirements.....	193
A.5.5.1A	One frequency present in neighbour list and HS-DSCH DRX configured.....	194
A.5.5.1A.1	Test Purpose and Environment .....	194
A.5.5.1A.2	Test Requirements.....	195
A.5.5.1B	One frequency present in neighbour list and HS-DSCH 2 <sup>nd</sup> DRX configured .....	196
A.5.5.1B.1	Test Purpose and Environment .....	196
A.5.5.1B.2	Test Requirements.....	197
A.5.5.1C	One frequency present in neighbour list and FACH measurement occasions configured, secondary BCH in use.....	198
A.5.5.1C.1	Test Purpose and Environment .....	198
A.5.5.1C.2	Test Requirements.....	199
A.5.5.2	Two frequencies present in the neighbour list and FACH measurement occasions configured .....	200
A.5.5.2.1	Test Purpose and Environment .....	200
A.5.5.2.2	Test Requirements.....	201
A.5.5.2A	Two frequencies present in the neighbour list and HS-DSCH DRX configured (Absolute priority levels not configured) .....	202
A.5.5.2A.1	Test Purpose and Environment .....	202
A.5.5.2A.2	Test Requirements.....	203
A.5.5.2B	Two frequencies present in the neighbour list and HS-DSCH DRX configured (Absolute priority levels configured) .....	204
A.5.5.2B.1	Test Purpose and Environment .....	204
A.5.5.2B.2	Test Requirements.....	205
A.5.5.2C	Two frequencies present in the neighbour list and HS-DSCH 2 <sup>nd</sup> DRX configured (Absolute priority levels not configured) .....	206
A.5.5.2C.1	Test Purpose and Environment .....	206
A.5.5.2C.2	Test Requirements.....	207
A.5.5.2D	Two frequencies present in the neighbour list and HS-DSCH 2 <sup>nd</sup> DRX configured (Absolute priority levels configured) .....	208
A.5.5.2D.1	Test Purpose and Environment .....	208
A.5.5.2D.2	Test Requirements.....	209
A.5.5.2E	Five frequencies present in the neighbour list and FACH measurement occasions configured for Increased Carrier Monitoring.....	210
A.5.5.2E.1	Test Purpose and Environment .....	210
A.5.5.2E.2	Test Requirements.....	213
A.5.5.3	Cell Reselection to GSM .....	214
A.5.5.3.1	Test Purpose and Environment .....	214
A.5.5.3.2	Test Requirements.....	216
A.5.5.3A	Cell Reselection to GSM in DRX .....	216
A.5.5.3A.1	Test Purpose and Environment.....	216
A.5.5.3.2	Test Requirements .....	219
A.5.5.4	Cell Reselection during an MBMS session, two frequencies present in neighbour list.....	219
A.5.5.4.1	Test Purpose and Environment .....	219
A.5.5.4.2	Test Requirements.....	221
A.5.5.5	UTRAN to E-UTRA Cell Reselection.....	222
A.5.5.5.1	Reselection to E-UTRA FDD when HS-DSCH DRX is configured (E-UTRA has higher priority) .....	222
A.5.5.5.1.1	Test Purpose and Environment.....	222
A.5.5.5.1.2	Test Requirements .....	225
A.5.5.5.2	Reselection to E-UTRA FDD when HS-DSCH DRX is configured (E-UTRA has lower priority) .....	225
A.5.5.5.2.1	Test Purpose and Environment.....	225
A.5.5.5.2.2	Test Requirements .....	228
A.5.5.5.3	Reselection to E-UTRA FDD when HS-DSCH 2 <sup>nd</sup> DRX is configured (E-UTRA has higher priority) .....	228
A.5.5.5.3.1	Test Purpose and Environment.....	228
A.5.5.5.3.2	Test Requirements .....	231
A.5.5.5.4	Reselection to E-UTRA TDD when HS-DSCH DRX is configured (E-UTRA has higher priority) .....	231

A.5.5.5.4.1	Test Purpose and Environment.....	231
A.5.5.5.4.2	Test Requirements .....	234
A.5.5.5.5	Reselection to E-UTRA TDD when HS-DSCH DRX is configured (E-UTRA has lower priority) ...	234
A.5.5.5.5.1	Test Purpose and Environment.....	234
A.5.5.5.5.2	Test Requirements .....	237
A5.5.5.6	Reselection to E-UTRA TDD when HS-DSCH 2 <sup>nd</sup> DRX is configured configured (E-UTRA has higher priority) .....	237
A.5.5.5.6.1	Test Purpose and Environment.....	237
A.5.5.5.6.2	Test Requirements .....	240
A.5.5.5.7	Reselection to E-UTRA FDD with FACH measurement occasions configured .....	240
A.5.5.5.7.1	Test Purpose and Environment.....	240
A.5.5.5.7.2	Test Requirements .....	243
A.5.5.5.8	Reselection to E-UTRA TDD with FACH measurement occasions configured.....	243
A.5.5.5.8.1	Test Purpose and Environment.....	243
A.5.5.5.8.2	Test Requirements .....	246
A.5.6	Cell Re-selection in CELL_PCH.....	246
A.5.6.1	One frequency present in the neighbour list .....	246
A.5.6.1.1	Test Purpose and Environment .....	246
A.5.6.1.2	Test Requirements.....	247
A.5.6.2	Two frequencies present in the neighbour list .....	248
A.5.6.2.1	Test Purpose and Environment .....	248
A.5.6.2.2	Test Requirements.....	249
A.5.6.3	Cell re-selection during an MBMS session, one UTRAN inter-frequency and 2 GSM cells present in the neighbour list .....	249
A.5.6.3.1	Test Purpose and Environment .....	249
A.5.6.3.2	Test Requirements.....	251
A.5.7	Cell Re-selection in URA_PCH .....	252
A.5.7.1	One frequency present in the neighbour list .....	252
A.5.7.1.1	Test Purpose and Environment .....	252
A.5.7.1.2	Test Requirements.....	253
A.5.7.2	Two frequencies present in the neighbour list .....	253
A.5.7.2.1	Test Purpose and Environment .....	253
A.5.7.2.2	Test Requirements.....	254
A.5.8	Serving HS-DSCH cell change .....	255
A.5.8.1	Test Purpose and Environment .....	255
A.5.8.1.1	Test procedure.....	256
A.5.8.2	Test Requirements .....	256
A.5.9	Enhanced Serving HS-DSCH cell change .....	256
A.5.9.1	Test Purpose and Environment .....	256
A.5.9.1.1	Test procedure.....	258
A.5.9.2	Test Requirements .....	258
A.5.10	Intrafrequency System information acquisition for CSG cell.....	258
A.5.10.1	Test Purpose and Environment .....	258
A.5.10.2	Test Requirements .....	259
A.5.11	Interfrequency System information acquisition for CSG cell.....	260
A.5.11.1	Test Purpose and Environment .....	260
A.5.11.2	Test Requirements .....	261
A.6	RRC Connection Control .....	262
A.6.1	RRC Re-establishment delay.....	262
A.6.1.1	Test Purpose and Environment .....	262
A.6.1.1.1	TEST 1 .....	262
A.6.1.1.2	TEST 2 .....	263
A.6.1.2	Test Requirements .....	264
A.6.1.2.1	Test 1.....	264
A.6.1.2.2	Test 2.....	264
A.6.2	Random Access .....	265
A.6.2.1	Test Purpose and Environment .....	265
A.6.2.2	Test Requirements .....	266
A.6.2.2.1	Correct behaviour when receiving an ACK .....	266
A.6.2.2.2	Correct behaviour when receiving an NACK .....	266
A.6.2.2.3	Correct behaviour at Time-out .....	267

A.6.2.2.4	Correct behaviour when reaching maximum transmit power .....	267
A.6.2.2.5	Correct behaviour when selecting 2 or 10msec TTI length for Enhanced Uplink in CELL_FACH state and idle mode.....	267
A.6.3	(void).....	267
A.6.4	Transport format combination selection in UE .....	267
A.6.4.1	Test Purpose and Environment .....	267
A.6.4.1.1	Interactive or Background, PS, UL: 64 kbps.....	268
A.6.4.1.2	Interactive or Background, PS, UL: 64 kbps + Conversational / speech, CS, UL: 12.2kbps.....	269
A.6.4.2	Test Requirements .....	271
A.6.4.2.1	Interactive or Background, PS, UL: 64 kbps.....	271
A.6.4.2.2	Interactive or Background, PS, UL: 64 kbps + Conversational / speech, CS, UL: 12.2kbps.....	272
A.6.5	(void).....	272
A.6.6	E-TFC restriction in UE .....	272
A.6.6.1	Test Purpose and Environment .....	272
A.6.6.1.1	10ms TTI E-DCH E-TFC restriction testcase .....	272
A.6.6.1.1.1	Test Requirements .....	274
A.6.6.1.2	2ms TTI E-DCH E-TFC restriction testcase .....	275
A.6.6.1.2.1	Test Requirements .....	277
A.7	Timing and Signalling Characteristics .....	278
A.7.1	UE Transmit Timing .....	278
A.7.1.1	Test Purpose and Environment .....	278
A.7.1.2	Test Requirements .....	279
A.8	UE Measurements Procedures.....	280
A.8.1	FDD intra frequency measurements .....	280
A.8.1.1	Event triggered reporting in AWGN propagation conditions .....	280
A.8.1.1.1	Test Purpose and Environment .....	280
A.8.1.1.2	Test Requirements.....	281
A.8.1.2	Event triggered reporting of multiple neighbours in AWGN propagation condition.....	281
A.8.1.2.1	Test Purpose and Environment .....	281
A.8.1.2.2	Test Requirements.....	282
A.8.1.3	Event triggered reporting of two detectable neighbours in AWGN propagation condition.....	283
A.8.1.3.1	Test Purpose and Environment .....	283
A.8.1.3.2	Test Requirements.....	284
A.8.1.4	Correct reporting of neighbours in fading propagation condition.....	284
A.8.1.4.1	Test Purpose and Environment .....	284
A.8.1.4.2	Test Requirements.....	285
A.8.1.5	Event triggered reporting of multiple neighbour cells in Case 1 fading condition .....	285
A.8.1.5.1	Test Purpose and Environment .....	285
A.8.1.5.2	Test Requirements.....	286
A.8.1.6	Event triggered reporting of multiple neighbour cells in Case 3 fading condition .....	287
A.8.1.6.1	Test Purpose and Environment .....	287
A.8.1.6.2	Test Requirements.....	288
A.8.1.7	Event triggered reporting in AWGN propagation conditions .....	288
A.8.1.7.1	Test Purpose and Environment .....	288
A.8.1.7.2	Test Requirements .....	290
A.8.2	FDD inter frequency measurements .....	290
A.8.2.1	Correct reporting of neighbours in AWGN propagation condition .....	290
A.8.2.1.1	Test Purpose and Environment .....	290
A.8.2.1.2	Test Requirements.....	291
A.8.2.2	Correct reporting of neighbours in Fading propagation condition.....	292
A.8.2.2.1	Test Purpose and Environment .....	292
A.8.2.2.2	Test Requirements.....	292
A.8.2.3	Correct reporting of neighbours in fading propagation condition using TGL1=14 .....	293
A.8.2.3.1	Test Purpose and Environment .....	293
A.8.2.3.2	Test Requirements.....	293
A.8.2A	FDD adjacent frequency measurements .....	294
A.8.2A.1	Event triggered reporting in AWGN propagation conditions .....	294
A.8.2A.1.1	Test Purpose and Environment .....	294
A.8.2A.1.2	Test Requirements.....	295
A.8.2A.2	Event triggered reporting of two detectable neighbours in AWGN propagation condition.....	295

A.8.2A.2.1	Test Purpose and Environment .....	295
A.8.2A.2.2	Test Requirements.....	296
A.8.2A.3	Correct reporting of neighbours in fading propagation condition.....	296
A.8.2A.3.1	Test Purpose and Environment .....	296
A.8.2A.3.2	Test Requirements.....	297
A.8.2B	FDD inter frequency measurements without compressed mode .....	298
A.8.2B.1	Event triggered reporting using enhanced inter-frequency measurements without compressed mode.....	298
	A.8.2B.1.1 Test Purpose and Environment .....	298
	A.8.2B.1.2 Test Requirements .....	299
A.8.2C	FDD detected set measurements .....	301
A.8.2C.1	Event triggered reporting of interfrequency detected set measurements with compressed mode.....	301
	A.8.2C.1.1 Test Purpose and Environment .....	301
	A.8.2C.1.2 Test Requirements .....	302
A.8.2C.2	Event triggered reporting of inter frequency detected set measurements without compressed mode.....	302
	A.8.2C.2.1 Test Purpose and Environment .....	302
A.8.2D	Correct reporting of neighbours in AWGN propagation condition with an increased number of carriers and reduced performance group configured.....	303
A.8.2D.1	Test Purpose and Environment .....	303
A.8.2D.2	Test Requirements.....	305
A.8.2C.2.2	Test Requirements .....	306
A.8.2E	Correct reporting of neighbours in AWGN propagation condition (Increased UE carrier monitoring without reduced performance group configured) .....	306
A.8.2E.1	Test Purpose and Environment .....	306
A.8.2E.2	Test Requirements .....	308
A.8.3	(void).....	309
A.8.4	GSM measurements .....	309
A.8.4.1	Correct reporting of GSM neighbours in AWGN propagation condition .....	309
A.8.4.1.1	Test Purpose and Environment .....	309
A.8.4.1.1.1	Test 1. With BSIC verification required.....	310
A.8.4.1.1.2	Test 2: Without BSIC verification required.....	311
A.8.4.1.2	Test Requirements.....	312
A.8.4.1.2.1	TEST 1 With BSIC verification required .....	312
A.8.4.1.2.2	TEST 2 Without BSIC verification required .....	312
A.8.5	Combined Interfrequency and GSM measurements .....	313
A.8.5.1	Correct reporting of neighbours in AWGN propagation condition .....	313
A.8.5.1.1	Test Purpose and Environment .....	313
A.8.5.1.2	Test Requirements.....	314
A.8.5A	CSG Proximity Indication Testing Case for UTRAN FDD – FDD Inter frequency .....	315
A.8.5A.1	Test Purpose and Environment .....	315
A.8.5A.2	Test Requirements .....	318
A.8.6	E-UTRAN Measurements .....	318
A.8.6.1	Correct reporting of E-UTRAN FDD neighbours in fading propagation condition in CELL_DCH .....	318
A.8.6.1.1	Test Purpose and Environment .....	318
A.8.6.1.2	Test Requirements.....	320
A.8.6.2	Correct reporting of E-UTRAN TDD neighbours in fading propagation condition in CELL_DCH.....	321
A.8.6.2.1	Test Purpose and Environment .....	321
A.8.6.2.2	Test Requirements.....	323
A.8.6.3	Correct reporting of E-UTRAN FDD neighbours in fading propagation condition in CELL_FACH.....	324
A.8.6.3.1	Test Purpose and Environment .....	324
A.8.6.3.2	Test Requirements.....	326
A.8.6.4	Correct reporting of E-UTRAN TDD neighbours in fading propagation condition .....	327
A.8.6.4.1	Test Purpose and Environment .....	327
A.8.6.4.2	Test Requirements.....	329
A.8.6.5	Correct reporting of E-UTRAN FDD neighbours in fading propagation condition in CELL_DCH for Increased Carrier Monitoring with reduced performance group configured.....	330
A.8.6.5.1	Test Purpose and Environment .....	330
A.8.6.5.2	Test Requirements.....	333
A.8.6.6	Correct reporting of E-UTRAN TDD neighbours in fading propagation condition in CELL_DCH for Increased Carrier Monitoring with reduced performance group configured.....	334
A.8.6.6.1	Test Purpose and Environment .....	334
A.8.6.6.2	Test Requirements.....	338
A.8.7	Combined Interfrequency and E-UTRAN measurements .....	339

A.8.7.1	Correct reporting of E-UTRA FDD neighbours in fading propagation condition .....	339
A.8.7.1.1	Test Purpose and Environment .....	339
A.8.7.1.2	Test Requirements.....	341
A.8.7.2	Correct reporting of E-UTRA TDD neighbours in fading propagation condition .....	342
A.8.7.2.1	Test Purpose and Environment .....	342
A.8.7.2.2	Test Requirements.....	344
<b>A.9</b>	<b>Measurement Performance Requirements.....</b>	<b>345</b>
A.9.1	Measurement Performance for UE .....	345
A.9.1.1	CPICH RSCP .....	345
A.9.1.1.1	Test Purpose and Environment .....	345
A.9.1.1.1.1	Intra frequency test parameters.....	345
A.9.1.1.1.2	Inter frequency test parameters.....	346
A.9.1.1.2	Test Requirements.....	347
A.9.1.2	CPICH Ec/Io.....	347
A.9.1.2.1	Test Purpose and Environment .....	347
A.9.1.2.1.1	Intra frequency test parameters.....	347
A.9.1.2.1.2	Inter frequency test parameters.....	348
A.9.1.2.2	Test Requirements.....	349
A.9.1.3	UTRA Carrier RSSI.....	350
A.9.1.3.1	Test Purpose and Environment .....	350
A.9.1.3.2	Test Requirements.....	352
A.9.1.3A	GSM Carrier RSSI.....	353
A.9.1.3A.1	Test Purpose and Environment .....	353
A.9.1.3A.2	Test Requirements.....	354
A.9.1.3B	Transport channel BLER .....	354
A.9.1.3C	UE transmitted power .....	354
A.9.1.3C.1	Test Purpose and Environment .....	354
A.9.1.3C.1.1	Test procedure .....	355
A.9.1.3C.2	Test Requirements.....	355
A.9.1.4	SFN-CFN observed time difference .....	355
A.9.1.4.1	Test Purpose and Environment .....	355
A.9.1.4.1.1	Intra frequency test parameters.....	355
A.9.1.4.1.2	Inter frequency test parameters.....	356
A.9.1.4.2	Test Requirements.....	357
A.9.1.5	SFN-SFN observed time difference .....	357
A.9.1.5.1	SFN-SFN observed time difference type 1 .....	357
A.9.1.5.1.1	Test Purpose and Environment.....	357
A.9.1.5.1.2	Test Requirements .....	358
A.9.1.5.2	SFN-SFN observed time difference type 2 without IPDL period active .....	358
A.9.1.5.2.1	Test Purpose and Environment.....	358
A.9.1.5.2.2	Test Requirements .....	359
A.9.1.5.3	SFN-SFN observed time difference type 2 with IPDL period active .....	359
A.9.1.5.3.1	Test Purpose and Environment.....	359
A.9.1.5.3.2	Test Requirements .....	360
A.9.1.6	UE Rx-Tx time difference .....	360
A.9.1.6.1	UE Rx-Tx time difference type 1 .....	360
A.9.1.6.1.1	Test Purpose and Environment.....	360
A.9.1.6.1.2	Test Requirements .....	361
A.9.1.6.2	UE Rx-Tx time difference type 2 .....	361
A.9.1.6.2.1	Test Purpose and Environment.....	361
A.9.1.6.2.2	Test Requirements .....	362
A.9.1.7	(void) .....	362
A.9.1.8	(void) .....	362
A.9.1.9	UE Transmission Power Headroom.....	362
A.9.1.9.1	Test Purpose and Environment .....	362
A.9.1.9.1.1	Test Procedure .....	363
A.9.1.9.2	Test Requirements.....	363
A.9.1.10	E-UTRAN FDD RSRP absolute accuracy (CELL_DCH) .....	364
A.9.1.10.1	Test Purpose and Environment .....	364
A.9.1.10.2	Test Requirements.....	366
A.9.1.11	E-UTRAN TDD RSRP Absolute Accuracy (CELL_DCH) .....	366

A.9.1.11.1	Test Purpose and Environment .....	366
A.9.1.11.2	Test Requirements.....	367
A.9.1.12	E-UTRA FDD RSRQ absolute accuracy (CELL_DCH) .....	368
A.9.1.12.1	Test Purpose and Environment .....	368
A.9.1.12.2	Test Requirements.....	370
A.9.1.13	E-UTRAN TDD RSRQ Absolute Accuracy (CELL_DCH) .....	370
A.9.1.13.1	Test Purpose and Environment .....	370
A.9.1.13.2	Test Requirements.....	371
A.9.1.14	E-UTRAN FDD RSRP Absolute Accuracy for 5 MHz Bandwidth .....	372
A.9.1.14.1	Test Purpose and Environment .....	372
A.9.1.14.2	Test Requirements.....	373
A.9.1.15	E-UTRA FDD RSRQ Absolute Accuracy for 5 MHz Bandwidth.....	373
A.9.1.15.1	Test Purpose and Environment .....	373
A.9.1.15.2	Test Requirements.....	375
A.9.1.16	E-UTRAN FDD RSRP absolute accuracy (CELL_FACH).....	375
A.9.1.16.1	Test Purpose and Environment .....	375
A.9.1.16.2	Test Requirements.....	378
A.9.1.17	E-UTRAN TDD RSRP Absolute Accuracy (CELL_FACH) .....	378
A.9.1.17.1	Test Purpose and Environment .....	378
A.9.1.17.2	Test Requirements.....	379
A.9.1.18	E-UTRA FDD RSRQ absolute accuracy (CELL_FACH).....	380
A.9.1.18.1	Test Purpose and Environment .....	380
A.9.1.18.2	Test Requirements.....	382
A.9.1.19	E-UTRAN TDD RSRQ Absolute Accuracy (CELL_FACH).....	382
A.9.1.19.1	Test Purpose and Environment .....	382
A.9.1.19.2	Test Requirements.....	383
A.9.1.20	E-UTRA FDD WB-RSRQ Absolute Accuracy (CELL_DCH) .....	384
A.9.1.20.1	Test Purpose and Environment .....	384
A.9.1.20.2	Test Requirements.....	385
A.9.1.21	E-UTRA TDD WB-RSRQ Absolute Accuracy (CELL_DCH).....	386
A.9.1.21.1	Test Purpose and Environment .....	386
A.9.1.21.2	Test Requirements .....	387

**Annex B (normative):      Conditions for RRM requirements applicability for operating bands ...388**

B.1.	Conditions for Idle mode tasks .....	388
B.1.1.	Conditions for measurements of inter-RAT E-UTRA cells.....	388
B.2.	Conditions for UE Measurements Procedures .....	388
B.2.1.	Conditions for E-UTRAN measurements .....	388
B.3.	Conditions for Measurement Performance for UE .....	389
B.3.1.	Conditions for intra frequency CPICH RSCP measurements accuracy .....	389
B.3.2.	Conditions for intra frequency CPICH RSCP relative measurements accuracy .....	389
B.3.3.	Conditions for inter frequency CPICH RSCP relative measurements accuracy .....	390
B.3.4.	Conditions for intra frequency CPICH Ec/Io measurements accuracy .....	390
B.3.5.	Conditions for intra frequency CPICH Ec/Io relative measurements accuracy .....	390
B.3.6.	Conditions for inter frequency CPICH Ec/Io measurements accuracy .....	390
B.3.7.	Conditions for inter frequency CPICH Ec/Io relative measurements accuracy .....	390
B.3.8.	Conditions for intra frequency SFN-SFN observed time difference .....	391
B.3.9.	Conditions for inter frequency SFN-SFN observed time difference .....	391
B.3.10.	Conditions for SFN-SFN observed time difference type 1 .....	391
B.3.11.	Conditions for intra frequency SFN-SFN observed time difference type 2 without or with IPDL period active .....	391
B.3.12.	Conditions for inter frequency SFN-SFN observed time difference type 2 .....	391
B.4.	Conditions for UTRAN Connected mode mobility .....	391
B.4.1.	Conditions for identification of a new CGI of inter-RAT E-UTRA cell with autonomous gaps.....	391

**Annex C (informative):      Change History .....393**

History .....	398
---------------	-----

---

## Foreword

This Technical Specification (TS) has been produced by the 3<sup>rd</sup> Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

---

## 1 Scope

The present document specifies requirements for support of Radio Resource Management for FDD. These requirements include requirements on measurements in UTRAN and the UE as well as requirements on node dynamical behaviour and interaction, in terms of delay and response characteristics.

---

## 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"