

# <Technical Report>

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## XGP Forum

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# 1 Introduction

XGP Global Mode is an optional mode that introduces some advanced features from 3GPP LTE specifications to improve the system performance and offer better services to the future PHS users.

XGP Global Mode, which refers to only TDD part of 3GPP technical specifications, specifies the air interface including the physical layer, medium access control layer and radio connection related specifications.

This Technical Report specifies the measurement procedures for the conformance test of the user equipment (UE) and Base Station (BS) operating in XGP Global Mode based on Release 10.

XGP Global Mode supports three releases of 3GPP TDD LTE, including Release 8, 9 and 10. XGP Global Mode based on Release 10 is specified as an evolution of the XGP Global Mode based on Release 8 and 9, Therefore, XGP Global Mode based on Release 10 has backward compatibility with XGP Global Mode based on Release 8 and 9 in the sense that

- Release 8/9 terminal can work in a Release 10 system;
- Release 10 terminal can work in a Release 8/9 system.

So, this Technical Report can support conformance test for all the three releases of XGP Global Mode (Release 8, 9 and 10 of 3GPP TDD LTE).

## 1.1 Scope

The conformance tests of UE contain transmitting characteristics, receiving characteristics, requirement for support of RRM and performance requirements while the conformance tests of BS contain Transmitter characteristics, Receiver characteristics and performance requirements.

## 1.2 References

The 3GPP technical specifications that this TR refers are listed below (Notes: Conformance testing specifications with high version includes test cases from lower versions. Release 10 listed below includes those test cases from Release 8 and 9):

[1] 3GPP TS 36.508, [http://www.3gpp.org/ftp/Specs/archive/36\\_series/36.508/36508-a40.zip](http://www.3gpp.org/ftp/Specs/archive/36_series/36.508/36508-a40.zip), Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); Common test environments for User Equipment (UE) conformance testing, <Ver 10.4.0 (2013-03)>

[2] TS 36.521-1, [http://www.3gpp.org/ftp/Specs/archive/36\\_series/36.521-1/36521-1-a50.zip](http://www.3gpp.org/ftp/Specs/archive/36_series/36.521-1/36521-1-a50.zip), Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) conformance

specification; Radio transmission and reception; Part 1: Conformance Testing; , <Ver 10.5.0 (2013-03)>

[3] TS 36.521-3, [http://www.3gpp.org/ftp/Specs/archive/36\\_series/36.521-3/36521-3-a40.zip](http://www.3gpp.org/ftp/Specs/archive/36_series/36.521-3/36521-3-a40.zip), Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) conformance specification; Radio transmission and reception; Part 3: Radio Resource Management (RRM) conformance testing", <Ver 10.4.0 (2013-03)>

[4] TS 36.523-1, [http://www.3gpp.org/ftp/Specs/archive/36\\_series/36.523-1/36523-1-a20.zip](http://www.3gpp.org/ftp/Specs/archive/36_series/36.523-1/36523-1-a20.zip), Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification, <Ver 10.2.0 (2012-09)>

[5] TS 36.141, [http://www.3gpp.org/ftp/Specs/archive/36\\_series/36.141/36141-aa0.zip](http://www.3gpp.org/ftp/Specs/archive/36_series/36.141/36141-aa0.zip), Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) conformance testing, <Ver10.10.0 (2013-03)>

Note: The version number of 3GPP specification document can be read as the latest one in the same release if the document number is updated.

## 1.3 Abbreviations

BS	Base Station
CCCH	Common Control Channel
CMAS	Commercial Mobile Alert Service
COA	Care of Address
CQI	Channel Quality Indicator
DHCP	Dynamic Host Configuration Protocol
DL-SCH	Downlink Shared Channel
DRX	Discontinuous Reception
EMM	EPS Mobility Management
EPS	EVOLVED PACKET SYSTEM
ETWS	Earthquake and Tsunami Warning System
E-UTRAN	Evolved Universal Terrestrial Radio Access
FDD	Frequency Division Duplex
GSM	Global System for Mobile communication
IMS	IP Multimedia Subsystem
LTE	Long Term Evolution
MAC	Medium Access Control
PBCH	Physical Broadcast Channel

PCFICH	Physical Control Format Indicator Channel
PDCCH	Physical Downlink Control Channel
PDCP	Packet Data Convergence Protocol
PDSCH	Physical Downlink Shared Channel
PHICH	Physical Hybrid ARQ Indicator Channel
PMCH	Physical Multicast Channel
PRACH	Physical Random Access Channel
PUCCH	Physical Uplink Control Channel
PUSCH	Physical Uplink Shared Channel
PWS	Public Warning System
RF	Radio Frequency
RLC	Radio Link Control
RRC	Radio Resource Control
RSRP	Reference Signal Received Power
RSRQ	Reference Signal Received Quality
RSTD	Reference signal time difference
SMS	Short Message Service
TDD	Time Division Duplex
UE	User Equipment
UL-SCH	Uplink Shared Channel
UTRAN	UMTS Terrestrial Radio Access Network

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## 2 UE Radio transmission and reception Conformance Testing

### 2.1 Transmitter Characteristics

Conformance tests of Transmitter include Transmit power, Output Power Dynamics, Transmit signal quality, Output RF spectrum emissions, and Transmit intermodulation.

The transmitter characteristics are specified at the antenna connector of the UE with a single transmit antenna. For UE with integral antenna only, a reference antenna with a gain of 0 dBi is assumed.

#### 2.1.1 Transmit power

The detailed test cases of UE Maximum Output Power, Maximum Power Reduction, Additional Maximum Power Reduction and Configured UE transmitted Output Power are described in section 6.2 of [2].

## 2.1.2 Output Power Dynamics

The detailed test cases of UE Minimum Output Power, UE Transmit OFF power, UE ON/OFF time mask and UE Power Control are described in section 6.3 of [2].

## 2.1.3 Transmit signal quality

The detailed test cases of UE Transmit signal quality are described in section 6.5 of [2].

## 2.1.4 Output RF spectrum emissions

The detailed test cases of Output RF spectrum emissions are described in section 6.6 of [2].

## 2.1.5 Transmit intermodulation

The detailed test cases of Transmit intermodulation are described in section 6.7 of [2].

## 2.2 Receiver Characteristics

Conformance tests of Receiver include Reference sensitivity level, Maximum input level, Adjacent Channel Selectivity (ACS), Blocking characteristics, Spurious response, Intermodulation characteristics, and spurious emissions.

### 2.2.1 Reference sensitivity level

The detailed test cases of Reference sensitivity level are described in section 7.3 of [2].

### 2.2.2 Maximum input level

The detailed test cases of Maximum input level are described in section 7.4 of [2].

### 2.2.3 Adjacent Channel Selectivity (ACS)

The detailed test cases of Adjacent Channel Selectivity (ACS) are described in section 7.5 of [2].

### 2.2.4 Blocking characteristics

The detailed test cases of Blocking characteristics are described in section 7.6 of [2].

### 2.2.5 Spurious response

The detailed test cases of Spurious response are described in section 7.7 of [2].

## 2.2.6 Intermodulation characteristics

The detailed test cases of Intermodulation characteristics are described in section 7.8 of [2].

## 2.2.7 Spurious emissions

The detailed test cases of spurious emissions are described in section 7.9 of [2].

## 2.3 Performance Requirement

Performance requirement tests include Demodulation of PDSCH, Demodulation of PCFICH/PDCCH, Demodulation of PHICH, and Sustained downlink data rate provided by lower layers.

### 2.3.1 Demodulation of PDSCH (Cell-Specific Reference Symbols)

The detailed test cases of PDSCH demodulation (Cell-Specific Reference Symbols) are described in section 8.2 of [2].

### 2.3.2 Demodulation of PDSCH (User-Specific Reference Symbols)

The detailed test cases of PDSCH demodulation (User-Specific Reference Symbols) are described in section 8.3 of [2].

### 2.3.3 Demodulation of PCFICH/PDCCH

The detailed test cases of PCFICH/PDCCH demodulation are described in section 8.4 of [2].

### 2.3.4 Demodulation of PHICH

The detailed test cases of PHICH demodulation are described in section 8.5 of [2].

### 2.3.5 Sustained downlink data rate provided by lower layers

The detailed test cases of sustained data rate performance are described in section 8.7 of [2].

## 2.4 Reporting of Channel State Information

Conformance tests of Channel State Information Reporting include CQI Reporting under AWGN/fading conditions, Reporting of Precoding Matrix Indicator (PMI), and Reporting of Rank Indicator (RI).

### 2.4.1 CQI Reporting under AWGN conditions

The detailed test cases of CQI Reporting under AWGN conditions are described in section 9.2 of [2].

### 2.4.2 CQI Reporting under fading conditions

The detailed test cases of CQI Reporting under fading conditions are described in section 9.3 of [2].

### 2.4.3 Reporting of PMI

The detailed test cases of PMI Reporting are described in section 9.4 of [2].

### 2.4.4 Reporting of RI

The detailed test cases of RI Reporting are described in section 9.5 of [2].

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## 3 UE RRM Conformance Testing

### 3.1 Requirements for support of RRM

Radio Resource Management (RRM) ensures the efficient use of the available radio resources and also provides mechanisms that enable E-UTRAN to meet radio resource related requirements.

The cell configuration of cells described in the test cases shall be set according to section 4.4.7 of [1].

### 3.2 E-UTRAN RRC\_IDLE State Mobility

Conformance tests of E-UTRAN RRC\_IDLE State Mobility include E-UTRAN Cell Selection, E-UTRAN Cell Re-Selection, E-UTRAN to UTRAN Cell Re-Selection, E-UTRAN to GSM cell re-selection, E-UTRAN to HRPD Cell Re-Selection, and E-UTRAN to cdma2000 1xRTT Cell Re-Selection.

#### 3.2.1 E-UTRAN Cell Selection

The details of E-UTRAN Cell Selection are described in section 4.1 of [3].

#### 3.2.2 E-UTRAN Cell Re-Selection

The details of E-UTRAN cell re-selection are described in section 4.2 of [3].

### 3.2.3 E-UTRAN to UTRAN Cell Re-Selection

The details of E-UTRA to UTRAN cell reselection are described in section 4.3 of [3].

### 3.2.4 E-UTRAN to GSM cell re-selection

The details of E-UTRAN to GSM cell re-selection are described in section 4.4 of [3].

### 3.2.5 E-UTRAN to HRPD Cell Re-Selection

The details of E-UTRAN to HRPD Cell re-selection are described in section 4.5 of [3].

### 3.2.6 E-UTRAN to cdma2000 1xRTT Cell Re-Selection

The details of E-UTRAN to cdma2000 1xRTT Cell re-selection are described in section 4.6 of [3].

## 3.3 E-UTRAN RRC\_CONNECTED State Mobility

Conformance tests of E-UTRAN RRC\_CONNECTED State Mobility include E-UTRAN handover, Handover from E-UTRAN to other RATs, and Handover from E-UTRAN to non-3GPP RATs.

### 3.3.1 E-UTRAN Handover

The details of E-UTRAN handover are described in section 5.1 of [3].

### 3.3.2 Handover from E-UTRAN to other RATs

The details of E-UTRAN to other RATs handover are described in section 5.2 of [3].

### 3.3.3 Handover from E-UTRAN to non-3GPP RATs

The details of Handover from E-UTRAN to non-3GPP RATs are described in section 5.3 of [3].

## 3.4 RRC Connection Mobility Control

Conformance tests of RRC Connection Mobility Control include RRC Re-establishment, Random Access, and RRC Connection Release with Redirection.

### 3.4.1 RRC Re-establishment

The details of RRC Re-establishment test are described in section 6.1 of [3].



### 3.4.2 Random Access

The details of Random Access test are described in section 6.2 of [3].

### 3.4.3 RRC Connection Release with Redirection

The details of RRC Connection Release with Redirection test are described in section 6.3 of [3].

## 3.5 Timing and Signalling Characteristics

Conformance tests of Timing and Signalling Characteristics include UE Transmit Timing Accuracy and Radio Link Monitoring.

### 3.5.1 UE Transmit Timing

The details of UE Transmit Timing Accuracy are described in section 7.1 of [3].

### 3.5.2 UE Timing Advance

The details of UE Timing Advance Adjustment Accuracy are described in section 7.2 of [3].

## 3.6 UE Measurements Procedures

Conformance tests of UE Measurements Procedures include E-UTRAN TDD intra frequency measurements, E-UTRAN TDD-TDD inter frequency measurements, E-UTRAN TDD - UTRAN FDD measurements, E-UTRAN TDD - UTRAN measurements, E-UTRAN TDD - GSM measurements, Monitoring of Multiple Layers, E-UTRAN TDD - FDD Inter-frequency Measurements, E-UTRAN FDD - TDD Inter-frequency Measurements, E-UTRAN Carrier Aggregation Measurements, and Inter-frequency/RAT Measurements in CA mode.

### 3.6.1 E-UTRAN TDD intra frequency measurements

The details of E-UTRAN TDD intra frequency measurements are described in section 8.2 of [3].

### 3.6.2 E-UTRAN TDD-TDD inter frequency measurements

The details of E-UTRAN TDD intra frequency measurements are described in section 8.4 of [3].

### 3.6.3 E-UTRAN TDD - UTRAN FDD measurements

The details of E-UTRAN TDD - UTRAN FDD measurements are described in section 8.6 of [3].

### 3.6.4 E-UTRAN TDD - UTRAN measurements

The details of E-UTRAN TDD - UTRAN measurements are described in section 8.7 of [3].

### 3.6.5 E-UTRAN TDD - GSM measurements

The details of E-UTRAN TDD - GSM measurements are described in section 8.10 of [3].

### 3.6.6 Monitoring of Multiple Layers

The details of Multiple Multiple Layers monitoring are described in section 8.11 of [3].

### 3.6.7 E-UTRAN TDD - FDD Inter-frequency Measurements

The details of E-UTRAN TDD - FDD Inter-frequency Measurements are described in section 8.14 of [3].

### 3.6.8 E-UTRAN FDD - TDD Inter-frequency Measurements

The details of E-UTRAN FDD - TDD Inter-frequency Measurements are described in section 8.15 of [3].

### 3.6.9 E-UTRAN Carrier Aggregation Measurements

The details of E-UTRAN Carrier Aggregation Measurements are described in section 8.16 of [3].

### 3.6.10 Inter-frequency/RAT Measurements in CA mode

The details of E-UTRAN Inter-frequency/RAT Measurements in CA mode are described in section 8.20 of [3].

## 3.7 Measurement Performance Requirements

Measurement Performance Requirements include RSRP requirement, RSRQ requirement, requirement of UE Rx – Tx Time Difference, and RSTD Measurements requirements.

### 3.7.1 RSRP

The details of RSRP Accuracy are described in section 9.1 of [3].

### 3.7.2 RSRQ

The details of RSRQ Accuracy are described in section 9.2 of [3].

### 3.7.3 UE Rx – Tx Time Difference

The details of UE Rx – Tx Time Difference are described in section 9.7 of [3]

### 3.7.4 RSTD Measurements Accuracy

The details of RSTD Measurements Accuracy are described in section 9.8 of [3].

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## 4 UE Protocol Conformance Specification

### 4.1 Overview

Overview of UE Protocol conformance specification includes Test methodology, Implicit testing, and Repetition of tests.

#### 4.1.1 Test methodology

The details of Test methodology are described in section 4.1 of [4].

#### 4.1.2 Implicit testing

The details of implicit testing are described in section 4.2 of [4].

#### 4.1.3 Repetition of tests

The details of repetition of tests are described in section 4.3 of [4].

### 4.2 Idle mode operations

UE Idle mode operations include conformance testing in a pure E-UTRAN environment and Multi-mode environment, conformance testing in Closed Subscriber Group cells, and conformance testing in Hybrid cells.

#### 4.2.1 In a pure E-UTRAN environment

The detailed test cases in a pure E-UTRAN environment are described in section 6.1 of [4].

#### 4.2.2 Multi-mode environment

The detailed test cases in a multi-mode environment (E-UTRAN, UTRAN, GERAN, CDMA2000) are described in section 6.2 of [4].

### 4.2.3 Closed Subscriber Group cells

The detailed test cases in closed subscriber group cells are described in section 6.3 of [4].

### 4.2.4 Hybrid cells

The detailed test cases in Hybrid cells are described in section 6.4 of [4].

## 4.3 Layer 2

Layer 2 Conformance tests include MAC layer testing, RLC layer testing and PDCP layer testing.

### 4.3.1 MAC layer

#### 4.3.1.1 Mapping between logical channels and transport channels

The detailed test cases of mapping between logical channels and transport channels are described in section 7.1.1 of [4].

#### 4.3.1.2 RACH

The detailed test cases of RACH procedure are described in section 7.1.2 of [4].

#### 4.3.1.3 DL-SCH data transfer

The detailed test cases of DL-SCH data transfer are described in section 7.1.3 of [4].

#### 4.3.1.4 UL-SCH data transfer

The detailed test cases of UL-SCH data transfer are described in section 7.1.4 of [4].

#### 4.3.1.5 PUSCH Hopping

The detailed test cases of PUSCH hopping are described in section 7.1.5 of [4].

#### 4.3.1.6 DRX operation

The detailed test cases of DRX operation are described in section 7.1.6 of [4].

#### 4.3.1.7 Specific configurations

The detailed test cases of Specific configurations are described in section 7.1.7 of [4].

#### 4.3.1.8 Reporting of Rank Indicator (RI)

The detailed test cases of RI reporting are described in section 7.1.8 of [4].

#### 4.3.1.9 Activation/Deactivation of SCells

The detailed test cases of Activation/Deactivation of SCells are described in section 7.1.9 of [4].

### 4.3.2 RLC layer

#### 4.3.2.1 Unacknowledged mode

The detailed test cases of unacknowledged mode are described in section 7.2.2 of [4].

#### 4.3.2.2 Acknowledged mode

The detailed test cases of acknowledged mode are described in section 7.2.3 of [4].

### 4.3.3 PDCP layer

#### 4.3.3.1 Maintenance of PDCP

The detailed test cases of PDCP maintenance are described in section 7.3.1 of [4].

#### 4.3.3.2 PDCP ciphering and deciphering

The detailed test cases of PDCP ciphering and deciphering are described in section 7.3.3 of [4].

#### 4.3.3.3 PDCP integrity protection

The detailed test cases of PDCP integrity protection are described in section 7.3.4 of [4].

#### 4.3.3.4 PDCP handover

The detailed test cases of PDCP handover are described in section 7.3.4 of [4].

## 4.3 RRC

Conformance tests of RRC Layer include RRC connection management procedures, RRC connection reconfiguration, and intra E-UTRAN measurements.

### 4.3.1 RRC connection management procedures

The detailed test cases of RRC connection management procedures are described in section 8.1 of [4].

### 4.3.2 RRC connection reconfiguration

The detailed test cases of RRC connection reconfiguration are described in section 8.2 of [4].

### 4.3.3 Intra E-UTRAN measurements

The detailed test cases of intra E-UTRAN measurements are described in section 8.3 of [4].

## 4.4 EPS mobility management

Conformance tests of EPS mobility management include EMM common procedures, EMM specific procedures, EMM specific procedures, and NAS Security.

### 4.4.1 EMM common procedures

The detailed test cases of EMM common procedures are described in section 9.1 of [4].

### 4.4.2 EMM specific procedures

The detailed test cases of EMM specific procedures are described in section 9.2 of [4].

### 4.4.3 EMM connection management procedures

The detailed test cases of EMM connection management procedures are described in section 9.3 of [4].

### 4.4.4 NAS Security

The detailed test cases of NAS Security are described in section 9.4 of [4].

## 4.5 EPS session management

Conformance tests of EPS session management include dedicated EPS bearer context activation, EPS bearer context modification, EPS bearer context deactivation, UE requested PDN connectivity, UE requested PDN disconnect, UE requested bearer resource allocation, and UE routing of uplink packets.

### 4.5.1 Dedicated EPS bearer context activation

The detailed test cases of dedicated EPS bearer context activation are described in section 10.2 of [4].

### 4.5.2 EPS bearer context modification

The detailed test cases of dedicated EPS bearer context modification are described in section 10.3 of [4].

### 4.5.3 EPS bearer context deactivation

The detailed test cases of dedicated EPS bearer context deactivation are described in section 10.4 of [4].

### 4.5.4 UE requested PDN connectivity

The detailed test cases of UE requested PDN connectivity are described in section 10.5 of [4].

### 4.5.5 UE requested PDN disconnect

The detailed test cases of UE requested PDN disconnect are described in section 10.6 of [4].

### 4.5.6 UE requested bearer resource allocation

The detailed test cases of UE requested bearer resource allocation are described in section 10.7 of [4].

### 4.5.7 UE requested bearer resource modification

The detailed test cases of UE requested bearer resource modification are described in section 10.8 of [4].

### 4.5.8 UE routing of uplink packets

The detailed test cases of UE routing of uplink packets are described in section 10.9 of [4].

## 4.6 General tests

UE general conformance tests include SMS over SGs and Emergency calls over IMS.

### 4.6.1 SMS over SGs

The detailed test cases of SMS over SGs are described in section 11.1 of [4].

### 4.6.2 Emergency calls over IMS

The detailed test cases of emergency calls over IMS are described in section 11.2 of [4].

## 4.7 E-UTRA radio bearer tests

E-UTRA radio bearer tests include test procedures under MIMO not configured and MIMO configured scenarios.

### 4.7.1 General

Definition of radio bearer combinations and generic E-UTRA radio bearer test procedures are described in section 12.1 of [4].

### 4.7.2 MIMO not configured

Detailed test cases of E-UTRA radio bearer test procedures (MIMO not configured) are described in section 12.2 of [4].

### 4.7.3 MIMO configured

Detailed test cases of E-UTRA radio bearer test procedures (MIMO configured) are described in section 12.3 of [4].

## 4.8 Multi layer Procedures

Multi layer Procedures tests include call setup, RRC connection reconfiguration, Connection re-establishment, and Mobility.

### 4.8.1 Call setup

Detailed test cases of call setup are described in section 13.1 of [4].

### 4.8.2 RRC connection reconfiguration

Detailed test cases of RRC connection reconfiguration are described in section 13.2 of [4].

### 4.8.3 Connection re-establishment

Detailed test cases of Connection re-establishment are described in section 13.3 of [4].

### 4.8.4 Mobility

Detailed test cases of Mobility are described in section 13.4 of [4].

## 4.9 ETWS

ETWS tests include ETWS reception in RRC\_IDLE state/Duplicate detection and ETWS reception in RRC\_CONNECTED state/Duplicate detection.



#### 4.9.1 ETWS reception in RRC\_IDLE state / Duplicate detection

The detailed test cases of ETWS reception in RRC\_IDLE state/Duplicate detection are described in section 14.1 of [4].

#### 4.9.2 ETWS reception in RRC\_CONNECTED state / Duplicate detection

The detailed test cases of ETWS reception in RRC\_CONNECTED state/Duplicate detection are described in section 14.2 of [4].

### 4.10 Mobility management based on Dual-Stack Mobile IPv6

Mobility management tests based on Dual-stack Mobile IPv6 include Discovery of the home agent via DNS/DHCP, Security association establishment with/without Home Agent reallocation procedure, Registration of a new IPv6/IPv4 CoA, Re-registration of IPv6/Ipv4 CoA, Return to home link, and Dual-Stack Mobile IPv6/IPv4 detach in IPv4 network.

#### 4.10.1 Discovery of the home agent via DNS

The detailed test cases of discovery of the home agent via DNS are described in section 15.1 of [4].

#### 4.10.2 Discovery of the Home Agent via DHCP

The detailed test cases of Discovery of the Home Agent via DHCP are described in section 15.2 of [4].

#### 4.10.3 Security association establishment with Home Agent reallocation procedure

The detailed test cases of Security association establishment with Home Agent reallocation procedure are described in section 15.4 of [4].

#### 4.10.4 Security association establishment without home agent reallocation procedure

The detailed test cases of Security association establishment without home agent reallocation procedure are described in section 15.5 of [4].

#### 4.10.5 Registration of a new IPv6 CoA

The detailed test cases of Registration of a new IPv6 CoA (Binding Update/Acknowledgment procedure in IPv6 network) are described in section 15.6 of [4].

#### 4.10.6 Registration of a new IPv4 CoA

The detailed test cases of Registration of a new IPv4 CoA (Binding Update/Acknowledgment procedure in IPv4 network) are described in section 15.7 of [4].

#### 4.10.7 Re-registration of IPv6 CoA

The detailed test cases of Re-registration of IPv6 CoA are described in section 15.8 of [4].

#### 4.10.8 Re-registration of IPv4 CoA

The detailed test cases of Re-registration of IPv4 CoA are described in section 15.9 of [4].

#### 4.10.9 Return to home link

The detailed test cases of Return to home link are described in section 15.10 of [4].

#### 4.10.10 Dual-Stack Mobile IPv6 detach in IPv6 network

The detailed test cases of Dual-Stack Mobile IPv6 detach in IPv6 network are described in section 15.11 of [4].

#### 4.10.11 Dual-Stack Mobile IPv6 detach in IPv4 network

The detailed test cases of Dual-Stack Mobile IPv6 detach in IPv4 network are described in section 15.12 of [4].

### 4.11 Home (e)NB related

Home (e)NB related tests include UE Idle Mode Operations.

#### 4.11.1 UE Idle Mode Operations

The detailed test cases of UE Idle Mode Operations are described in section 16.1 of [4].

### 4.12 MBMS in LTE

MBMS tests in LTE include MCCH Information Acquisition, MBMS Data Reception, and MBMS Counting Procedure.

#### 4.12.1 MCCH Information Acquisition

The detailed test cases of MCCH Information Acquisition are described in section 17.1 of [4].

#### 4.12.2 MBMS Data Reception

The detailed test cases of MBMS Data Reception are described in section 17.2 of [4].

#### 4.12.3 MBMS Counting Procedure

The detailed test cases of MBMS Counting Procedure are described in section 17.3 of [4].

### 4.13 PWS

Conformance testing of PWS includes CMAS testing on LTE.

#### 4.13.1 CMAS on LTE

The detailed test cases of CMAS on LTE are described in section 18.1 of [4].

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## 5. BS conformance testing

Base Station (BS) conformance testing specifies the Radio Frequency (RF) test methods and conformance requirements for Base Stations (BS) operating in XGP Global mode.

### 5.1 General test conditions and declarations

General test conditions and declarations include Measurement uncertainties and Test Requirements, Base station classes, BS Configurations, Specified frequency range and supported channel bandwidth, Test configuration for non-single carrier operations, etc.

Detailed general test conditions and declarations are described in section 4 of [5].

### 5.2 Operating bands and channel arrangement

Details of Operating bands, Channel bandwidth and Channel arrangement are described in section 5 of [5].

### 5.3 BS Transmitter characteristics

Transmitter tests include Base station output power, Output power dynamics, Transmit ON/OFF power, Transmitted signal quality, Unwanted emissions and Transmitter intermodulation.

### 5.3.1 Test Models

Details of E-UTRA test models are described in section 6.1 of [5].

### 5.3.2 BS output power

The detailed test cases of BS output power are described in section 6.2 of [5].

### 5.3.2 Output power dynamics

The detailed test cases of output power dynamics are described in section 6.3 of [5].

### 5.3.3 Transmit ON/OFF power

The detailed test cases of transmit ON/OFF power are described in section 6.4 of [5].

### 5.3.4 Transmitted signal quality

The detailed test cases of transmitted signal quality are described in section 6.5 of [5].

### 5.3.5 Unwanted emissions

The detailed test cases of unwanted emissions are described in section 6.6 of [5].

### 5.3.6 Transmitter intermodulation

The detailed test cases of transmitter intermodulation are described in section 6.7 of [5].

## 5.4 BS Receiver characteristics

Receiver tests include Reference sensitivity level, Dynamic range, In-channel selectivity, Adjacent Channel Selectivity (ACS) and narrow-band blocking, Blocking, Receiver spurious emissions and Receiver intermodulation.

### 5.4.1 Reference sensitivity level

The detailed test cases of reference sensitivity level are described in section 7.2 of [5].

### 5.4.2 Dynamic range

The detailed test cases of dynamic range are described in section 7.3 of [5].

### 5.4.3 In-channel selectivity

The detailed test cases of in-channel selectivity are described in section 7.4 of [5].

### 5.4.4 Adjacent Channel Selectivity (ACS) and narrow-band blocking

The detailed test cases of ACS and narrow-band blocking are described in section 7.5 of [5].

### 5.4.5 Blocking

The detailed test cases of Blocking are described in section 7.6 of [5].

### 5.4.6 Receiver spurious emissions

The detailed test cases of Receiver spurious emissions are described in section 7.7 of [5].

### 5.4.7 Receiver intermodulation

The detailed test cases of Receiver intermodulation are described in section 7.8 of [5].

## 5.5 Performance requirement

Performance requirements are specified for a number of test environments and multipath channel classes.

### 5.5.1 Performance requirements for PUSCH

The detailed test cases of PUSCH performance are described in section 8.2 of [5].

### 5.5.2 Performance requirements for PUCCH

The detailed test cases of PUCCH performance are described in section 8.3 of [5].

### 5.5.3 Performance requirements for PRACH

The detailed test cases of PRACH performance are described in section 8.4 of [5].