

ETSI TS 151 021 V13.0.0 (2016-01)



**Digital cellular telecommunications system (Phase 2+);
Base Station System (BSS) equipment specification;
Radio aspects
(3GPP TS 51.021 version 13.0.0 Release 13)**



Reference

RTS/TSGG-0151021vd00

Keywords

GSM

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.....	9
1 Scope	10
2 References	10
3 Definitions, abbreviations, frequency bands and channels.....	12
3.1 Definitions	12
3.2 Abbreviations	14
3.3 Frequency bands and channels	14
3.3.1 Frequency bands	14
3.3.2 Channels and channel numbering	15
4 General test conditions and declarations	15
4.1 Output power and determination of power class	16
4.2 Specified frequency range	16
4.3 Frequency hopping	17
4.4 RF power control.....	17
4.5 Downlink discontinuous transmission (DTX).....	17
4.6 Test environments	17
4.6.1 Normal test environment	18
4.6.2 Extreme test environment	18
4.6.2.1 Extreme temperature	18
4.6.3 Vibration.....	19
4.6.4 Power supply	19
4.7 Acceptable uncertainty of measurement equipment.....	19
4.8 Interpretation of measurement results	23
4.9 Selection of configurations for testing.....	23
4.10 BTS Configurations.....	24
4.10.1 Receiver diversity	24
4.10.2 Duplexers	24
4.10.3 Power supply options.....	25
4.10.4 Ancillary RF amplifiers	25
4.10.5 BSS using antenna arrays	25
4.10.6 BTS supporting 8-PSK modulation	26
4.10.7 BTS supporting additional modulations in EGPRS2	27
4.10.8 Supported Symbol Rate.....	27
4.10.9 Support of RTTI and/or FANR	27
4.10.10 Multicarrier BTS.....	27
5 Format and interpretation of tests.....	28
6 Transmitter	29
6.1 Static Layer 1 functions.....	29
6.1.1 Test purpose.....	29
6.1.2 Test case	29
6.1.3 Void	29
6.1.4 Conformance requirement	30
6.1.5 Requirement reference.....	30
6.2 Modulation accuracy	30
6.2.1 Test purpose.....	30
6.2.2 Test case	30
6.2.3 Void	31
6.2.4 Conformance requirement	31

6.2.5	Requirement reference	33
6.3	Mean transmitted RF carrier power	33
6.3.1	Test purpose	33
6.3.2	Test case	33
6.3.3	Void	34
6.3.4	Conformance requirement	34
6.3.5	Requirement reference	35
6.4	Transmitted RF carrier power versus time	35
6.4.1	Test purpose	35
6.4.2	Test case	35
6.4.3	Void	36
6.4.4	Conformance requirement	36
6.4.5	Requirement reference	40
6.5	Adjacent channel power	40
6.5.1	Spectrum due to modulation and wideband noise	41
6.5.1.1	Test purpose	41
6.5.1.2	Test case	41
6.5.1.3	Void	41
6.5.1.4	Conformance requirement	42
6.5.1.4.1	Normal BTS Minimum requirement	42
6.5.1.4.2	Multicarrier BTS Minimum requirement	42
6.5.1.4.3	Micro and Pico-BTS Minimum requirement	43
6.5.1.5	Requirement reference	44
6.5.2	Switching transients spectrum	44
6.5.2.1	Test purpose	44
6.5.2.2	Test case	44
6.5.2.3	Void	46
6.5.2.4	Conformance requirement	46
6.5.2.5	Requirement reference	46
6.6	Spurious emissions from the transmitter antenna connector	46
6.6.1	Conducted spurious emissions from the transmitter antenna connector, inside the BTS transmit band	47
6.6.1.1	Test Purpose	47
6.6.1.2	Test Case	47
6.6.1.3	Void	47
6.6.1.4	Conformance requirement	47
6.6.1.5	Requirement Reference	47
6.6.2	Conducted spurious emissions from the transmitter antenna connector, outside the BTS transmit band	48
6.6.2.1	Applicability (Phase 2)	48
6.6.2.1.1	Test Purpose	48
6.6.2.1.2	Test Case	48
6.6.2.1.3	Void	49
6.6.2.1.4	Conformance requirement	49
6.6.2.1.5	Requirement Reference	49
6.6.2.2	Applicability (Phase 2+)	49
6.6.2.2.1	Test Purpose	49
6.6.2.2.2	Test Case	50
6.6.2.2.3	Void	51
6.6.2.2.4	Conformance requirement	51
6.6.2.2.5	Requirement Reference	52
6.6.2.3	Applicability (Release 1999 and later releases GSM 400, GSM 900 and DCS 1800)	52
6.6.2.3.1	Test Purpose	52
6.6.2.3.2	Test Case	52
6.6.2.3.3	Void	53
6.6.2.3.4	Conformance requirement	53
6.6.2.3.5	Requirement Reference	53
6.6.2.4	Applicability (Release 4 and later releases GSM 700, GSM 850 and PCS 1900)	53
6.6.2.4.1	Test Purpose	53
6.6.2.4.2	Test Case	53
6.6.2.4.3	Void	54
6.6.2.4.4	Conformance requirement	54
6.6.2.4.5	Requirement Reference	54

6.6.2.5	Applicability (Release 7 and later releases GSM 400, T-GSM 810, GSM 900 and DCS 1800).....	54
6.6.2.5.1	Test Purpose	54
6.6.2.5.2	Test Case	54
6.6.2.5.3	Void	56
6.6.2.5.4	Conformance requirement	56
6.6.2.5.5	Requirement Reference	57
6.6.2.5a	Applicability (Release 7 and later releases GSM 700, GSM 850 and PCS 1900)	57
6.6.2.5a.1	Test Purpose	57
6.6.2.5a.2	Test Case	57
6.6.2.5a.3	Void	57
6.6.2.5a.4	Conformance requirement	57
6.6.2.5a.5	Requirement Reference	58
6.6.2.6	Applicability (Release 8 and later releases GSM 400, T-GSM 810, GSM 900 and DCS 1800).....	58
6.6.2.6.1	Test Purpose	58
6.6.2.6.2	Test Case	58
6.6.2.6.3	Void	59
6.6.2.6.4	Conformance requirement	59
6.6.2.6.5	Requirement Reference	60
6.6.2.7	Applicability (Release 8 and later releases GSM 700, GSM 850 and PCS 1900)	60
6.6.2.7.1	Test Purpose	61
6.6.2.7.2	Test Case	61
6.6.2.7.3	Void	62
6.6.2.7.4	Conformance requirement	62
6.6.2.7.5	Requirement Reference	63
6.6.2.8	Applicability (Release 8 and later releases GSM 400, GSM 900 and DCS 1800).....	63
6.6.2.8.1	Test Purpose	63
6.6.2.8.2	Test Case	64
6.6.2.8.3	Void	65
6.6.2.8.4	Complete conformance	65
6.6.2.8.5	Requirement Reference	65
6.6.2.9	Applicability (Release 12 and later releases GSM 400, T-GSM 810, GSM 900, ER-GSM 900 and DCS 1800).....	65
6.6.2.9.1	Test Purpose	65
6.6.2.9.2	Test Case	65
6.6.2.9.3	Void	67
6.6.2.9.4	Conformance requirement	67
6.6.2.9.5	Requirement Reference	67
6.6.2.10	Applicability (Release 12 and later releases GSM 400, T-GSM 810, GSM 900 and DCS 1800).....	67
6.6.2.10.1	Test Purpose	68
6.6.2.10.2	Test Case	68
6.6.2.10.3	Void	69
6.6.2.10.4	Conformance requirement	69
6.6.2.10.5	Requirement Reference	70
6.6.2.11	Applicability (Release 12 and later releases GSM 400, GSM 900, ER-GSM 900 and DCS 1800).....	70
6.6.2.11.1	Test Purpose	70
6.6.2.11.2	Test Case	71
6.6.2.11.3	Void	72
6.6.2.11.4	Conformance requirement	72
6.6.2.11.5	Requirement Reference	72
6.7	Intermodulation attenuation (GSM 400, GSM 900, ER-GSM 900 and DCS 1800).....	72
6.7.1	Test purpose.....	72
6.7.2	Test case	72
6.7.3	Void	74
6.7.4	Conformance requirement	74
6.7.5	Requirement reference	76
6.8	Intra Base Station System intermodulation attenuation.....	76
6.8.1	Test purpose.....	76
6.8.2	Test case	76
6.8.3	Void	77
6.8.4	Conformance requirement	77
6.8.5	Requirement reference.....	77
6.9	Intra Base Station System intermodulation attenuation, MXM 850 and MXM 1900	78

6.9.1	Test purpose.....	78
6.9.2	Test cases	78
6.9.2.1	200 kHz carriers-only.....	78
6.9.2.2	200 kHz and ANSI-136 30 kHz carriers	78
6.9.3	Void	78
6.9.4	Conformance requirement	78
6.9.5	Requirement reference.....	79
6.10	Intra Base Station System intermodulation attenuation, PCS 1900, GSM 850 and GSM 700.....	79
6.10.1	Test purpose.....	79
6.10.2	Test case	79
6.10.3	Void	80
6.10.4	Conformance requirement	80
6.10.5	Requirement reference.....	80
6.11	Intermodulation attenuation (GSM 700, GSM 850, MXM 850, PCS 1900 and MXM 1900)	80
6.11.1	Test purpose.....	80
6.11.2	Test case	81
6.11.3	Void	82
6.11.4	Conformance requirement	82
6.11.5	Requirement reference.....	83
6.12	Wideband noise and intra BSS intermodulation attenuation in multicarrier operation	84
6.12.1	Test purpose.....	84
6.12.2	Test case	84
6.12.3	Void	86
6.12.4	Conformance requirement	86
6.12.5	Requirement reference.....	88
7	Receivers	88
7.1	Static Layer 1 receiver functions (nominal error ratios).....	88
7.1.1	Test Purpose.....	88
7.1.2	Test Case.....	89
7.1.3	Void	91
7.1.4	Conformance requirement	91
7.1.5	Requirement Reference.....	92
7.2	Erroneous Frame Indication Performance.....	92
7.2.1	Test Purpose.....	92
7.2.2	Test Case.....	92
7.2.3	Void	93
7.2.4	Conformance requirement	93
7.2.5	Requirement reference.....	93
7.3	Static Reference Sensitivity Level.....	94
7.3.1	Test Purpose.....	94
7.3.2	Test Case.....	94
7.3.3	Void	98
7.3.4	Conformance requirement	98
7.3.5	Requirements Reference	101
7.4	Multipath Reference Sensitivity Level.....	102
7.4.1	Test Purpose.....	102
7.4.2	Test Case.....	102
7.4.3	Void	108
7.4.4	Conformance requirement	108
7.4.5	Requirement Reference.....	116
7.5	Reference interference level	116
7.5.1	Test Purpose.....	116
7.5.2	Test Case.....	116
7.5.3	Void	129
7.5.4	Conformance requirement	129
7.5.5	Requirements Reference	143
7.6	Blocking Characteristics.....	143
7.6.1	Test Purpose.....	143
7.6.2	Test Case.....	143
7.6.3	Void	151
7.6.4	Conformance requirement	151

7.6.5	Requirements reference	153
7.7	Intermodulation characteristics	153
7.7.1	Test Purpose.....	153
7.7.2	Test Case.....	153
7.7.3	Void	155
7.7.4	Conformance requirement	155
7.7.5	Requirement Reference.....	155
7.8	AM suppression.....	156
7.8.1	Test Purpose.....	156
7.8.2	Test Case.....	156
7.8.3	Void	158
7.8.4	Conformance requirement	158
7.8.5	Requirement Reference.....	158
7.9	Spurious emissions from the receiver antenna connector.....	159
7.9.1	Test Purpose.....	159
7.9.2	Test Case.....	159
7.9.3	Void	160
7.9.4	Conformance requirement	160
7.9.5	Requirement Reference.....	160
8	Radiated spurious emissions	160
8.1	Test Purpose	160
8.2	Test Case	160
8.3	Void.....	162
8.4	Conformance requirement	162
8.5	Requirement reference	163
9	Radio link management.....	163
9.1	General	163
9.2	Synchronization.....	163
9.2.1	Timing Tolerance.....	163
9.2.1.1	Test purpose	163
9.2.1.2	Test case.....	164
9.2.1.3	Void.....	164
9.2.1.4	Conformance requirement.....	164
9.2.1.5	Requirement reference	164
9.3	Frame structure.....	164
9.3.1	BCCH Multiframe	165
9.3.1.1	Test purpose	165
9.3.1.2	Test case.....	165
9.3.1.3	Void.....	165
9.3.1.4	Conformance requirement.....	165
9.3.1.5	Requirement reference	165
9.3.2	TDMA-frame structure	165
9.3.2.1	Test purpose	165
9.3.2.2	Test case.....	165
9.3.2.3	Void.....	166
9.3.2.4	Conformance requirement.....	166
9.3.2.5	Requirement reference	166
9.4	Radio link measurements	166
9.4.1	Signal Strength.....	166
9.4.1.1	Measurement Accuracy.....	166
9.4.1.1.1	Test purpose	166
9.4.1.1.2	Test case	166
9.4.1.1.3	Void.....	167
9.4.1.1.4	Conformance requirement	167
9.4.1.1.5	Requirement reference.....	168
9.4.1.2	Selectivity of signal strength measurements	168
9.4.1.2.1	Test purpose	168
9.4.1.2.2	Test case	169
9.4.1.2.3	Void.....	169
9.4.1.2.4	Conformance requirement	169

9.4.1.2.5	Requirement reference.....	170
9.4.2	Signal quality.....	170
9.4.2.1	Test purpose.....	170
9.4.2.2	Test case.....	170
9.4.2.3	Void.....	170
9.4.2.4	Conformance requirement.....	170
9.4.2.5	Requirement reference.....	171
9.4.3	Idle channel signal level.....	171
9.4.3.1	Test purpose.....	171
9.4.3.2	Test case.....	171
9.4.3.3	Void.....	172
9.4.3.4	Conformance requirement.....	172
9.4.3.5	Requirement reference.....	172
9.5	Adaptive frame alignment.....	172
9.5.1	Test purpose.....	172
9.5.2	Test case.....	173
9.5.3	Void.....	173
9.5.4	Conformance requirement.....	173
9.5.5	Requirement reference.....	174
Annex A (informative): Testing of statistical parameters.....		175
A.1	General theoretical methodology.....	175
A.2	Detailed theoretical methodology.....	177
A.3	Limitations and corrections to the theoretical methodology.....	178
A.3.1	Independent errors.....	178
A.3.2	Gaussian distribution.....	178
A.3.3	Stationary random processes.....	178
A.3.4	Low error ratios.....	179
A.3.5	Total corrections.....	179
A.4	Alternative experimental methodology.....	179
A.5	Detailed definition of error events.....	180
Annex B (informative): Description of special test equipment.....		181
B.1	Base Station System Test Equipment (BSSTE).....	181
B.1.1	Fading and multipath propagation simulator.....	181
B.2	Measurement set ups for TX intermodulation.....	181
B.2.1	Test set-up for Intermodulation Attenuation (6.7.).....	181
B.2.1.1	RX-Band.....	182
B.2.1.2	Outside RX Band.....	182
B.2.2	Test set-up for Intra BSS Intermodulation Attenuation (6.8.).....	183
B.2.2.1	RX-Band.....	183
B.2.2.2	TX-Band.....	183
Annex C (informative): Number of samples needed for statistical testing.....		184
C.1	GSM 900; Number of samples for testing.....	184
C.2	DCS 1800; Number of Samples for Testing.....	204
Annex D (informative): Change history.....		225
History	231

Foreword

This Technical Specification has been produced by the 3rd 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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/e3ed19e-7b92-4681-a67e-bcd183ed7b97/etsi-ts-151-021-v13-0-2016-01>

1 Scope

The present document specifies the Radio Frequency (RF) test methods and conformance requirements for GSM 400, GSM 700, T-GSM 810, GSM 900, ER-GSM 900 and DCS 1800, PCS 1900, GSM 850, MXM 850 and MXM 1900 Base Station Systems (BSS)s. These have been derived from, and are consistent with, the core GSM specifications specified in the requirements reference subclause of each test with the exception that requirements expressed as a reference to regulatory documents (e.g. FCC) have not been included in the present document.

The present document is applicable to BSS meeting the requirements of either GSM Phase 2 or GSM Phase 2+. Unless otherwise stated, all tests are applicable to BSS meeting Phase 2 and/or Phase 2+ GSM requirements, because the requirements of the Phase 2 and Phase 2+ core GSM specifications which are referenced in the test are consistent. Most differences between Phase 2 and Phase 2+ requirements represent Phase 2+ features which are optional for the BSS to support.

Conformance requirements may be tested to verify all aspects of the performance of a BSS. These minimum requirements are intended to be used by manufacturers and operators to allow conformance and acceptance testing to be performed in a consistent manner; the tests to be performed should be agreed between the parties.

In some tests there are separate requirements for micro-BTS and BTS. If there is no separate requirement for a micro-BTS, the requirements for the BTS apply to a micro-BTS.

In Rel-7, higher symbol rate is introduced for EGPRS2-B. EGPRS2-A and all other channels use normal symbol rate. For definition of normal and higher symbol rate see 3GPP TS 45.004. All tests and requirements apply to both symbol rates except otherwise stated in the test.

In some tests there are separate requirements for multicarrier BTS, that apply for all classes of multicarrier BTS (Wide Area, Medium Range and Local Area, cf. [22]) unless otherwise stated. If there is no separate requirement for a multicarrier BTS class, the requirement designated for BTS and normal BTS apply to that multicarrier BTS class.

In Rel-12, BTS operating in the ER-GSM 900 band is introduced. In some tests there are separate requirements for BTS operating in the ER-GSM 900 band. If there is no separate requirement, the requirements for normal BTS apply.

In the present document, the reference point for RF connections (except for the measurement of mean transmitted RF carrier power) is the antenna connector, as defined by the manufacturer. The present document does not apply to repeaters or RF devices which may be connected to an antenna connector of a BSS, except as specified in subclause 4.10.

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 TR 21.905: " Vocabulary for 3GPP Specifications ".
- [2] GSM 04.22: "Digital cellular telecommunications system (Phase 2+); Radio Link Protocol (RLP) for data and telematic services on the Mobile Station - Base Station System (MS - BSS) interface and the Base Station System - Mobile-services Switching Centre (BSS - MSC) interface".
- [3] GSM 05.01: "Digital cellular telecommunications system (Phase 2); Physical layer on the radio path; General description".

- [4] GSM 05.02 (ETS 300 574): "Digital cellular telecommunications system (Phase 2); Multiplexing and multiple access on the radio path".
- [5] GSM 05.03 (ETS 300 575): "Digital cellular telecommunications system (Phase 2); Channel coding".
- [6] GSM 05.04 (ETS 300 576): "Digital cellular telecommunications system (Phase 2); Modulation".
- [7] GSM 05.05 (ETS 300 577): "Digital cellular telecommunications system (Phase 2); Radio transmission and reception".
- [8] GSM 05.08 (ETS 300 578): "Digital cellular telecommunications system (Phase 2); Radio subsystem link control".
- [9] GSM 05.10 (ETS 300 579): "Digital cellular telecommunications system (Phase 2); Radio subsystem synchronization".
- [10] 3GPP TS 08.20: "Digital cellular telecommunications system (Phase 2); Rate adaption on the Base Station System - Mobile-services Switching Centre (BSS - MSC) interface".
- [11] ETSI EN 300 019-1: "Equipment Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment Part 1-0: Classification of environmental conditions Introduction".
- [12] IEC 60 068-2: "Basic environmental testing procedures; Part 2: Tests".
- [13] IEC 60 721: "Classification of environmental conditions".
- [14] ETSI ETR 027: "Radio and Equipment Systems; methods of measurement for mobile radio equipment".
- [15] ETSI ETR 028: "Radio and Equipment Systems; Uncertainties in the measurement of mobile radio equipment characteristics".
- [16] ITU-R Rec. SM.329-7: "Spurious emissions".
- [17] 3GPP TS 05.05: " Digital cellular telecommunications system (Phase 2+); Radio transmission and reception ".
- [18] 3GPP TS 45.001: "Physical layer on the radio path; General description".
- [19] 3GPP TS 45.002: "Multiplexing and multiple access on the radio path".
- [20] 3GPP TS 45.003: "Channel coding".
- [21] 3GPP TS 45.004: "Modulation".
- [22] 3GPP TS 45.005: "Radio transmission and reception".
- [23] 3GPP TS 45.008: "Radio subsystem link control".
- [24] 3GPP TS 45.010: "Radio subsystem synchronization".
- [25] TIA/EIA-136-C: 'TDMA Third Generation Wireless'.
- [26] EN 300 019-1-3: "Equipment Engineering (EE): Environmental conditions and environmental tests for telecommunications equipment Part 1-3; Classification of environmental conditions, Stationary use at weather-protected locations".
- [27] EN 300 019-1-4: "Equipment Engineering (EE): Environmental conditions and environmental tests for telecommunications equipment Part 1-4; Classification of environmental conditions, Stationary use at non-weather-protected locations".
- [28] IEC 60 721-3-3 "Stationary use at weather protected locations".
- [29] IEC 60 721-3-4 "Stationary use at non weather protected locations".

- [30] 3GPP TS 24.022 'Radio Link Protocol (RLP) for circuit switched bearer and teleservices'.
- [31] 3GPP TS 48.020 'Rate adaption on the Base Station System - Mobile services Switching Centre (BSS - MSC) interface'.
- [32] 3GPP TS 25.113 'Base Station (BS) and repeater ElectroMagnetic Compatibility (EMC)'.
- [33] 3GPP TS 36.113 'E-UTRA - Base Station (BS) and repeater ElectroMagnetic Compatibility (EMC)'.

3 Definitions, abbreviations, frequency bands and channels

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

8-PSK: modulation type as defined 3GPP TS 45.004 clause 3.

Carrier Frequency: centre of the ARFCN under test.

GMSK: modulation type as defined by 3GPP TS 45.004 clause 2.

GSM: unless otherwise specified, references to GSM include GSM 400, GSM 700, T-GSM 810, GSM 850, GSM 900, ER-GSM 900, DCS 1800, PCS 1900, MXM 850 and MXM 1900.

GSM 900: unless otherwise specified, references to GSM 900 include P-GSM, E-GSM and R-GSM.

BSS: in the present document, the term BSS (or base station subsystem) applies to both a BTS and integrated BSS. If a separate BSC is required to perform tests on a BTS, the BSC may be regarded as test equipment and the environmental conditions of the BSC need not be controlled.

pico-BTS: as defined in 3GPP TS 45.005. In the present document, this also includes a BSS which incorporates a pico-BTS.

micro-BTS: as defined in 3GPP TS 05.05 and 3GPP TS 45.005. In the present document, this also includes a BSS which incorporates a micro-BTS.

Multicarrier BTS: defined as BTS, characterized by the ability to, in addition to single carrier operation, process two or more carriers in common active components simultaneously.

Wide Area (WA) multicarrier BTS: defined as a class of multicarrier BTS, characterized by requirements derived from macro cell scenarios. The class has either multicarrier transmitter only, or both multicarrier transmitter and receiver.

Medium Range (MR) multicarrier BTS: defined as a class of multicarrier BTS, characterized by requirements derived from micro cell scenarios. The class has both multicarrier transmitter and multicarrier receiver.

Local Area (LA) multicarrier BTS: defined as a class of multicarrier BTS, characterized by requirements derived from pico cell scenarios. The class has both multicarrier transmitter and multicarrier receiver.

MXM: mixed Mode system. Mixed-mode is defined as a network that deploys both 30 kHz RF carriers and 200 kHz RF carriers in geographic regions where the Federal Communications Commission (FCC) or similar regulations are applied. In the present document MXM 850 and MXM 1900 are defined.

normal BTS: any BTS or BSS as defined by 3GPP TS 05.05 and 3GPP TS 45.005 which is not a micro-BTS, pico-BTS or multicarrier BTS.

BSSSTE: base Station System Test Equipment; see annex B.

manufacturer: in the present document, a reference to a manufacturer shall also apply to an agent of the manufacturer.