



**IMT cellular networks;
Harmonized EN covering the essential requirements
of article 3.2 of the R&TTE Directive;
Evolved Universal Terrestrial Radio Access (E-UTRA)
Base Stations (BS)**

[ETSI EN 301 908-14 V6.1.3 \(2013-08\)](https://standards.iteh.ai/catalog/standards/etsi/652bd6e5-86b1-41de-aa58-abec692deb7c/etsi-en-301-908-14-v6-1-3-2013-08)

<https://standards.iteh.ai/catalog/standards/etsi/652bd6e5-86b1-41de-aa58-abec692deb7c/etsi-en-301-908-14-v6-1-3-2013-08>

ReferenceREN/MSG-TFES-010-14

Keywords3G, 3GPP, cellular, digital, E-UTRA, IMT,
IMT-2000, LTE, mobile, radio, regulation, UMTS

ETSI650 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

(<https://standards.iteh.ai>)
Document Preview

Important notice

Individual copies of the present document can be downloaded from:
<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the 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:

http://portal.etsi.org/chaicor/ETSI_support.asp

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2013.
All rights reserved.

DECTTM, PLUGTESTSTM, UMTSTM and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.
3GPPTM and LTETM 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.

Contents

Intellectual Property Rights	6
Foreword.....	6
Introduction	6
1 Scope	7
2 References	7
2.1 Normative references	8
2.2 Informative references	8
3 Definitions, symbols and abbreviations	9
3.1 Definitions	9
3.2 Symbols	11
3.3 Abbreviations	12
4 Technical requirements specifications	13
4.1 Environmental profile.....	13
4.2 Conformance requirements	13
4.2.1 Introduction.....	14
4.2.2 Operating band unwanted emissions	15
4.2.2.1 Definition	15
4.2.2.2 Limits	16
4.2.2.2.1 Limits for Wide Area BS (Bands 1, 3, 8, 33 and 34).....	16
4.2.2.2.2 Limits for Wide Area BS (Bands 7, 22, 38, 40, 42 and 43).....	17
4.2.2.2.3 Limits for Wide Area BS (Band 20).....	19
4.2.2.2.4 Limits for Local Area BS	20
4.2.2.2.5 Limits for Home BS	21
4.2.2.2.6 Limits for protection of DTT	23
4.2.2.2.7 Limits for protection of adjacent band services	24
4.2.2.3 Conformance.....	24
4.2.3 Adjacent Channel Leakage power Ratio (ACLR)	24
4.2.3.1 Definition	24
4.2.3.2 Limits	24
4.2.3.3 Conformance.....	25
4.2.4 Transmitter spurious emissions.....	25
4.2.4.1 Definition	26
4.2.4.2 Limits	26
4.2.4.2.1 Spurious emissions	26
4.2.4.2.2 Co-existence with other systems	26
4.2.4.2.3 Protection of the BS receiver of own or different BS	28
4.2.4.2.4 Co-existence with Home BS operating in other bands	28
4.2.4.3 Conformance.....	29
4.2.5 Base Station maximum output power	29
4.2.5.1 Definition	30
4.2.5.2 Limit.....	30
4.2.5.3 Conformance.....	30
4.2.6 Transmitter intermodulation	30
4.2.6.1 Definition	30
4.2.6.2 Limit.....	30
4.2.6.3 Conformance.....	31
4.2.7 Receiver spurious emissions	31
4.2.7.1 Definition	31
4.2.7.2 Limit.....	31
4.2.7.3 Conformance.....	32
4.2.8 Blocking characteristics	32
4.2.8.1 Definition	32
4.2.8.2 Limit.....	33

4.2.8.3	Conformance	34
4.2.9	Receiver intermodulation characteristics	34
4.2.9.1	Definition	34
4.2.9.2	Limit	35
4.2.9.3	Conformance	38
4.2.10	Adjacent Channel Selectivity (ACS) and narrow-band blocking	38
4.2.10.1	Definition	38
4.2.10.2	Limit	38
4.2.10.3	Conformance	40
4.2.11	Home BS output power for adjacent UTRA channel protection	40
4.2.11.1	Definition	40
4.2.11.2	Limit	41
4.2.11.3	Conformance	41
4.2.12	Home BS output power for adjacent E-UTRA channel protection	41
4.2.12.1	Definition and applicability	41
4.2.12.2	Limit	42
4.2.12.3	Conformance	42
4.2.13	Home BS output power for co-channel E-UTRA protection	42
4.2.13.1	Definition and applicability	42
4.2.13.2	Limit	43
4.2.13.3	Conformance	44
5	Testing for compliance with technical requirements	44
5.1	Environmental conditions for testing	44
5.2	Interpretation of the measurement results	44
5.3	Essential radio test suites	45
5.3.1	Operating band unwanted emissions	46
5.3.1.1	Initial conditions	46
5.3.1.2	Procedure	46
5.3.2	Adjacent Channel Leakage power Ratio (ACLR)	46
5.3.2.1	Initial conditions	46
5.3.2.2	Procedure	46
5.3.3	Transmitter spurious emissions	47
5.3.3.1	Initial conditions	47
5.3.3.2	Procedure	47
5.3.4	Base Station maximum output power	47
5.3.4.1	Initial conditions	47
5.3.4.2	Procedure	48
5.3.5	Transmitter intermodulation	48
5.3.5.1	Initial conditions	48
5.3.5.2	Procedures	48
5.3.6	Receiver spurious emissions	49
5.3.6.1	Initial conditions	49
5.3.6.2	Procedure	49
5.3.7	Blocking characteristics	49
5.3.7.1	Initial conditions	49
5.3.7.2	Procedure	50
5.3.8	Receiver intermodulation characteristics	50
5.3.8.1	Initial conditions	50
5.3.8.2	Procedures	50
5.3.9	Adjacent Channel Selectivity (ACS) and narrow-band blocking	51
5.3.9.1	Initial conditions	51
5.3.9.2	Procedure for Adjacent Channel Selectivity	51
5.3.9.3	Procedure for narrow-band blocking	51
5.3.10	Home BS output power for adjacent channel protection	51
5.3.10.1	Initial conditions	51
5.3.10.2	Procedure	52
5.3.11	Home BS output power for adjacent E-UTRA channel protection	52
5.3.11.1	Initial conditions	52
5.3.11.2	Procedure	52
5.3.12	Home BS output power for co-channel E-UTRA protection	53
5.3.12.1	Initial conditions	53

5.3.12.2	Procedure	53
Annex A (normative):	HS Requirements and conformance Test specifications Table (HS-RTT).....	55
Annex B (normative):	Base Station configurations.....	57
B.1	Reception with multiple receiver antenna connectors, receiver diversity	57
B.2	Duplexers	57
B.3	Power supply options	57
B.4	Ancillary RF amplifiers.....	58
B.5	BS using antenna arrays	58
B.5.1	Receiver tests.....	59
B.5.2	Transmitter tests	59
B.6	Transmission with multiple transmitter antenna connectors	59
B.7	BS with integrated Luant BS modem.....	60
Annex C (informative):	Environmental profile specification	61
Annex D (informative):	Void	62
Annex E (informative):	Bibliography.....	63
History		64

iTech Standards
(<https://standards.iteh.ai>)
Document Preview

[ETSI EN 301 908-14 V6.1.3 \(2013-08\)](https://standards.iteh.ai/catalog/standards/etsi/652bd6e5-86b1-41de-aa58-abec692deb7c/etsi-en-301-908-14-v6-1-3-2013-08)

<https://standards.iteh.ai/catalog/standards/etsi/652bd6e5-86b1-41de-aa58-abec692deb7c/etsi-en-301-908-14-v6-1-3-2013-08>

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 (<http://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 draft Harmonized European Standard (EN) has been produced by ETSI Technical Committee Mobile Standards Group (MSG), and is now submitted for the combined Public Enquiry and Vote phase of the ETSI standards EN Approval Procedure.

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Directive 98/34/EC [i.2] as amended by Directive 98/48/EC [i.7].

The title and reference to the present document are intended to be included in the publication in the Official Journal of the European Union of titles and references of Harmonized Standard under the Directive 1999/5/EC [i.3].

See article 5.1 of Directive 1999/5/EC [i.3] for information on presumption of conformity and Harmonized Standards or parts thereof the references of which have been published in the Official Journal of the European Union.

The requirements relevant to Directive 1999/5/EC [i.3] are summarized in annex A.

The present document is part 3 of a multi-part deliverable. Full details of the entire series can be found in part 1 [1].

Proposed national transposition dates

Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	18 months after doa

Introduction

The present document is part of a set of standards developed by ETSI and is designed to fit in a modular structure to cover all radio and telecommunications terminal equipment within the scope of the R&TTE Directive [i.3]. The modular structure is shown in EG 201 399 [i.4].

1 Scope

The present document applies to the following radio equipment types:

- 1) Base Station for Evolved Universal Terrestrial Radio Access (E-UTRA).

This radio equipment type is capable of operating in all or any part of the operating bands given in table 1-1.

Table 1-1: E-UTRA Base Station operating bands

E-UTRA band	Direction of transmission	E-UTRA Base Station operating bands
1	Transmit	2 110 MHz to 2 170 MHz
	Receive	1 920 MHz to 1 980 MHz
3	Transmit	1 805 MHz to 1 880 MHz
	Receive	1 710 MHz to 1 785 MHz
7	Transmit	2 620 MHz to 2 690 MHz
	Receive	2 500 MHz to 2 570 MHz
8	Transmit	925 MHz to 960 MHz
	Receive	880 MHz to 915 MHz
20	Transmit	791 MHz to 821 MHz
	Receive	832 MHz to 862 MHz
22	Transmit	3 510 MHz to 3 590 MHz
	Receive	3 410 MHz to 3 490 MHz
33	Transmit and Receive	1 900 MHz to 1 920 MHz
34	Transmit and Receive	2 010 MHz to 2 025 MHz
38	Transmit and Receive	2 570 MHz to 2 620 MHz
40	Transmit and Receive	2 300 MHz to 2 400 MHz
42	Transmit and Receive	3 400 MHz to 3 600 MHz
43	Transmit and Receive	3 600 MHz to 3 800 MHz

The present document covers requirements for E-UTRA Base Stations for 3GPP Release 8, 9 and 10.

The present document is intended to cover the provisions of Directive 1999/5/EC [i.3] (R&TTE Directive), Article 3.2, which states that "... radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications and orbital resources so as to avoid harmful interference".

In addition to the present document, other ENs that specify technical requirements in respect of essential requirements under other parts of article 3 of the R&TTE Directive may apply to equipment within the scope of the present document.

NOTE: A list of such ENs is included on the web site <http://www.newapproach.org>.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.