

<b>STN</b>	<b>Bunkové siete IMT</b> <b>Harmonizovaná norma vzťahujúca sa na základné požiadavky podľa článku 3.2 smernice 2014/53/EÚ Časť 14: Základňové stanice (BS) zdokonaleného univerzálneho pozemského rádiového prístupu (E-UTRA)</b>	<b>STN</b> <b>EN 301 908-14</b> <b>V11.1.2</b>
		87 1908

IMT cellular networks; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU; Part 14: Evolved Universal Terrestrial Radio Access (E-UTRA) Base Stations (BS)

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 09/18

Obsahuje: EN 301 908-14 V11.1.2:2017

**127277**



# ETSI EN 301 908-14 V11.1.2 (2017-04)



**IMT cellular networks;  
Harmonised Standard covering the essential requirements  
of article 3.2 of Directive 2014/53/EU;  
Part 14: Evolved Universal Terrestrial Radio Access (E-UTRA)  
Base Stations (BS)**

---

Reference

REN/MSG-TFES-11-14-RED-C1

---

Keywords3G, 3GPP, cellular, digital, E-UTRA, IMT,  
IMT-2000, LTE, mobile, radio, regulation, 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  
<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

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 2017.  
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.

# Contents

Intellectual Property Rights .....	7
Foreword.....	7
Modal verbs terminology.....	7
Introduction .....	7
1    Scope .....	8
2    References .....	8
2.1    Normative references .....	8
2.2    Informative references.....	9
3    Definitions, symbols and abbreviations .....	10
3.1    Definitions .....	10
3.2    Symbols .....	15
3.3    Abbreviations .....	16
4    Technical requirements specifications .....	17
4.1    Environmental profile.....	17
4.2    Conformance requirements .....	17
4.2.1    Introduction.....	17
4.2.2    Operating band unwanted emissions .....	21
4.2.2.1    Definition .....	21
4.2.2.2    Limits .....	22
4.2.2.2.0    General .....	22
4.2.2.2.1    Limits for Wide Area BS (Bands 1, 3, 8, 32, 33 and 34).....	23
4.2.2.2.2    Limits for Wide Area BS (Bands 7, 22, 38, 40, 42 and 43).....	25
4.2.2.2.3    Limits for Wide Area BS (Band 20 and 28).....	28
4.2.2.2.4    Limits for Local Area BS .....	29
4.2.2.2.5    Limits for Home BS .....	31
4.2.2.2.6    Limits for protection of DTT .....	32
4.2.2.2.7    Limits for protection of adjacent band services .....	33
4.2.2.2.8    Limits for Medium Range BS .....	33
4.2.2.2.9    Limits for operation in Band 32 .....	37
4.2.2.3    Conformance .....	38
4.2.3    Adjacent Channel Leakage Power Ratio (ACLR) .....	38
4.2.3.1    Definition .....	38
4.2.3.2    Void.....	39
4.2.3.3    Void.....	39
4.2.3.4    Limits .....	39
4.2.3.4.1    ACLR Limits .....	39
4.2.3.4.2    Cumulative ACLR test requirement in non-contiguous spectrum limits.....	40
4.2.3.5    Conformance .....	41
4.2.4    Transmitter spurious emissions.....	42
4.2.4.1    Definition .....	42
4.2.4.2    Limits .....	42
4.2.4.2.1    Spurious emissions .....	42
4.2.4.2.2    Co-existence with other systems .....	42
4.2.4.2.3    Protection of the BS receiver of own or different BS .....	44
4.2.4.2.4    Co-existence with Home BS operating in other bands .....	44
4.2.4.3    Conformance .....	45
4.2.5    Base Station maximum output power .....	45
4.2.5.1    Definition .....	45
4.2.5.2    Limit.....	46
4.2.5.3    Conformance .....	46
4.2.6    Transmitter intermodulation .....	46
4.2.6.1    Definition .....	46
4.2.6.2    Limit.....	46
4.2.6.3    Conformance .....	47

4.2.7	Receiver spurious emissions .....	47
4.2.7.1	Definition .....	47
4.2.7.2	Limit.....	47
4.2.7.3	Conformance .....	48
4.2.8	Blocking characteristics.....	48
4.2.8.1	Definition .....	48
4.2.8.2	Limit.....	48
4.2.8.3	Conformance .....	51
4.2.9	Receiver intermodulation characteristics .....	51
4.2.9.1	Definition .....	51
4.2.9.2	Limit.....	51
4.2.9.3	Conformance .....	55
4.2.10	Adjacent Channel Selectivity (ACS) and narrow-band blocking .....	55
4.2.10.1	Definition .....	55
4.2.10.2	Limit.....	55
4.2.10.3	Conformance .....	59
4.2.11	Home BS output power for adjacent UTRA channel protection.....	59
4.2.11.1	Definition .....	59
4.2.11.2	Limit.....	59
4.2.11.3	Conformance .....	60
4.2.12	Home BS output power for adjacent E-UTRA channel protection.....	60
4.2.12.1	Definition and applicability.....	60
4.2.12.2	Limit.....	60
4.2.12.3	Conformance .....	61
4.2.13	Home BS output power for co-channel E-UTRA protection.....	61
4.2.13.1	Definition and applicability.....	61
4.2.13.2	Limit.....	62
4.2.13.3	Conformance .....	63
4.2.14	Reference sensitivity level .....	63
4.2.14.1	Definition and applicability.....	63
4.2.14.2	Limits .....	63
4.2.14.3	Conformance .....	64
5	Testing for compliance with technical requirements.....	64
5.1	Environmental conditions for testing .....	64
5.2	Interpretation of the measurement results .....	65
5.3	Essential radio test suites.....	66
5.3.0	Introduction.....	66
5.3.1	Operating band unwanted emissions .....	66
5.3.1.0	General .....	66
5.3.1.1	Initial conditions .....	66
5.3.1.2	Procedure .....	67
5.3.1.3	Test requirement .....	67
5.3.2	Adjacent Channel Leakage power Ratio (ACLR) .....	67
5.3.2.1	Initial conditions .....	67
5.3.2.2	Procedure .....	68
5.3.2.3	Test requirement .....	68
5.3.3	Transmitter spurious emissions.....	68
5.3.3.0	General .....	68
5.3.3.1	Initial conditions .....	68
5.3.3.2	Procedure .....	69
5.3.3.3	Test requirements .....	69
5.3.4	Base Station maximum output power .....	69
5.3.4.0	General .....	69
5.3.4.1	Initial conditions .....	69
5.3.4.2	Procedure .....	70
5.3.4.3	Test requirement .....	70
5.3.5	Transmitter intermodulation .....	70
5.3.5.0	General .....	70
5.3.5.1	Initial conditions .....	70
5.3.5.2	Procedures.....	70
5.3.5.3	Test requirement .....	71

5.3.6	Receiver spurious emissions .....	71
5.3.6.0	General .....	71
5.3.6.1	Initial conditions .....	71
5.3.6.2	Procedure .....	72
5.3.6.3	Test requirement .....	72
5.3.7	Blocking characteristics .....	72
5.3.7.0	General .....	72
5.3.7.1	Initial conditions .....	72
5.3.7.2	Procedure .....	73
5.3.7.3	Test requirement .....	73
5.3.8	Receiver intermodulation characteristics .....	74
5.3.8.0	General .....	74
5.3.8.1	Initial conditions .....	74
5.3.8.2	Procedures .....	74
5.3.8.3	Test requirement .....	74
5.3.9	Adjacent Channel Selectivity (ACS) and narrow-band blocking .....	75
5.3.9.0	General .....	75
5.3.9.1	Initial conditions .....	75
5.3.9.2	Procedure for Adjacent Channel Selectivity .....	75
5.3.9.3	Procedure for narrow-band blocking .....	75
5.3.9.4	Test requirement .....	76
5.3.10	Home BS output power for adjacent UTRA channel protection .....	76
5.3.10.1	Initial conditions .....	76
5.3.10.2	Procedure .....	76
5.3.10.3	Test requirement .....	77
5.3.11	Home BS output power for adjacent E-UTRA channel protection .....	77
5.3.11.1	Initial conditions .....	77
5.3.11.2	Procedure .....	77
5.3.11.3	Test requirement .....	78
5.3.12	Home BS output power for co-channel E-UTRA protection .....	78
5.3.12.1	Initial conditions .....	78
5.3.12.2	Procedure .....	78
5.3.12.3	Test requirement .....	79
5.3.13	Reference sensitivity level .....	79
5.3.13.0	General .....	79
5.3.13.1	Initial conditions .....	79
5.3.13.2	Procedure .....	79
5.3.13.3	Test requirement .....	80
<b>Annex A (informative):      Relationship between the present document and the essential requirements of Directive 2014/53/EU .....</b>		<b>81</b>
<b>Annex B (normative):      Base Station configurations .....</b>		<b>83</b>
B.1	Reception with multiple receiver antenna connectors, receiver diversity .....	83
B.2	Duplexers .....	83
B.3	Power supply options .....	83
B.4	Ancillary RF amplifiers .....	84
B.5	BS using antenna arrays .....	84
B.5.0	General .....	84
B.5.1	Receiver tests .....	85
B.5.2	Transmitter tests .....	85
B.6	Transmission with multiple transmitter antenna connectors .....	86
B.7	BS with integrated Iuant BS modem .....	86
<b>Annex C (informative):      Environmental profile specification .....</b>		<b>87</b>
<b>Annex D (informative):      Bibliography .....</b>		<b>88</b>

<b>Annex E (informative):</b>	<b>Change history .....</b>	<b>89</b>
History .....		90

# 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 Harmonised European Standard (EN) has been produced by ETSI Technical Committee Mobile Standards Group (MSG).

For non EU countries the present document may be used for regulatory (Type Approval) purposes.

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.1] to provide one voluntary means of conforming to the essential requirements of Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC [i.2].

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in table A-1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

The present document is part 14 of a multi-part deliverable. Full details of the entire series can be found in part 1 [i.7].

<b>National transposition dates</b>	
Date of latest announcement of this EN (doa):	31 July 2017
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 January 2017
Date of withdrawal of any conflicting National Standard (dow):	31 January 2018

## 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.

## Introduction

The present document is part of a set of standards developed by ETSI that are designed to fit in a modular structure to cover radio equipment within the scope of the Radio Equipment Directive [i.2]. The present document is produced following the guidance in ETSI EG 203 336 [i.3] as applicable.

# 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
28	Transmit	758 MHz to 803 MHz
	Receive	703 MHz to 748 MHz
32 (note 1) (note 2)	Transmit	1 452 MHz to 1 496 MHz
	Receive	N/A
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

NOTE 1: Restricted to E-UTRA operation when carrier aggregation is configured. The downlink operating band is paired with the uplink operating band (external) of the carrier aggregation configuration that is supporting the configured Pcell.

NOTE 2: Radio equipment in band 32 is only allowed to operate between 1 452 MHz and 1 492 MHz.

The present document covers requirements for E-UTRA Base Stations for 3GPP Release 8, 9, 10 and 11. This includes the requirements for E-UTRA Base Station operating bands and E-UTRA CA operating bands from 3GPP Release 12.

The present document covers the essential requirements of article 3.2 of Directive 2014/53/EU [i.2] under the conditions identified in annex A.

# 2 References

## 2.1 Normative references

References are specific, identified by date of publication and/or edition number or version number. Only the cited version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <https://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.

The following referenced documents are necessary for the application of the present document.

- [1] ETSI TS 136 141 (V11.14.0) (01-2016): "LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) conformance testing (3GPP TS 36.141 version 11.14.0 Release 11)".
- [2] ETSI TS 125 104 (V11.12.0) (01-2016): "Universal Mobile Telecommunications System (UMTS); Base Station (BS) radio transmission and reception (FDD) (3GPP TS 25.104 version 11.12.0 Release 11)".
- [3] ETSI TS 125 105 (V11.9.0) (01-2016): "Universal Mobile Telecommunications System (UMTS); Base Station (BS) radio transmission and reception (TDD) (3GPP TS 25.105 version 11.9.0 Release 11)".
- [4] ETSI TS 136 104 (V11.14.0) (01-2016): "LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) radio transmission and reception (3GPP TS 36.104 version 11.14.0 Release 11)".
- [5] ETSI TS 125 141 (V11.12.0) (01-2016): "Universal Mobile Telecommunications System (UMTS); Base Station (BS) conformance testing (FDD) (3GPP TS 25.141 version 11.12.0 Release 11)".
- [6] ETSI TS 136 211 (V11.6.0) (10-2014): "LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); Physical channels and modulation (3GPP TS 36.211 version 11.6.0 Release 11)".
- [7] ETSI EN 301 908-18 (V11.1.2) (04-2017): "IMT cellular networks; Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU; Part 18: E-UTRA, UTRA and GSM/EDGE Multi-Standard Radio (MSR) Base Station (BS)".

## 2.2 Informative 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.

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

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] Commission Implementing Decision C(2015) 5376 final of 4.8.2015 on a standardisation request to the European Committee for Electrotechnical Standardisation and to the European Telecommunications Standards Institute as regards radio equipment in support of Directive 2014/53/EU of the European Parliament and of the Council.
- [i.2] Directive 2014/53/EU of the European parliament and of the council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.
- [i.3] ETSI EG 203 336 (V1.1.1) (08-2015): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Guide for the selection of technical parameters for the production of Harmonised Standards covering article 3.1(b) and article 3.2 of Directive 2014/53/EU".
- [i.4] Recommendation ITU-R SM.329-12 (09-2012): "Unwanted emissions in the spurious domain".
- [i.5] ETSI TR 100 028 (all parts) (V1.4.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".
- [i.6] ETSI TS 136 104 (V12.10.0) (01-2016): "LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) radio transmission and reception (3GPP TS 36.104 version 12.10.0 Release 12)".
- [i.7] ETSI EN 301 908-1 (V11.1.1): "IMT cellular networks; Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU; Part 1: Introduction and common requirements".

[i.8] ETSI TS 136 214 (V11.1.0) (02-2013): "LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer; Measurements (3GPP TS 36.214 version 11.1.0 Release 11)".

---

koniec náhľadu – text d'alej pokračuje v platenej verzii STN