SLOVENSKI STANDARD
SIST EN 301 489-52 V1.2.1:2022

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Standard elektromagnetne združljivosti (EMC) za radijsko opremo in storitve - 52. del: Posebni pogoji za celično komunikacijsko uporabniško (UE) radijsko in pomožno opremo - Harmonizirani standard za elektromagnetno združljivost

ElectroMagnetic Compatibility (EMC) standard for radio equipment and services - Part 52: Specific conditions for Cellular Communication User Equipment (UE) radio and ancillary equipment - Harmonised Standard for ElectroMagnetic Compatibility

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ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 52: Specific conditions for Cellular Communication User Equipment (UE) radio and ancillary equipment; Harmonised Standard for ElectroMagnetic Compatibility

Reference

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Foreword

This Harmonised European Standard (EN) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.4] 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 52 of a multi-part deliverable. Full details of the entire series can be found in part 1 [1].

National transposition dates	
Date of adoption of this EN:	19 November 2021
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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.

1 Scope

The present document specifies the applicable test conditions, performance assessment, and performance criteria for Cellular Communication User Equipment (UE), including Customer Premise Equipment (CPE), Set Top Box (STB) containing cellular communication technologies, and the associated ancillary equipment in respect of ElectroMagnetic Compatibility (EMC) for equipment utilizing the technologies in table 1.

Table 1: Technologies User Equipment (UE) radio and ancillary equipment Cellular Communication

Cellular Mobile Communication Technology	Technology Generation	Standard Set	ETSI Standard
Global System for Mobile communications (GSM)	2G/3G	IMT-2000 SC single carrier	ETSI EN 301 511 [i.9]
CDMA Multi-Carrier (cdma2000)	2G/3G	IS-95/CDMA2000 - IMT-MC multi carrier	ETSI EN 301 908-4 [i.10]
CDMA Direct Spread (UTRA FDD)	3G	IMT-2000 Direct Spread	ETSI EN 301 908-2 [i.11]
Evolved Universal Terrestrial Radio Access (E-UTRA)	4G	IMT-advanced	ETSI EN 301 908-13 [i.12]
New Radio (NR)	5G	IMT-2020	ETSI TS 138 521-1 [15], ETSI TS 138 521-3 [16]

Technical specifications related to the antenna port of radio equipment and radiated emissions from the enclosure port of radio equipment and combinations of radio and associated ancillary equipment are not included in the present document. Such technical specifications are normally found in the relevant product standards for the effective use of the radio spectrum.

NOTE 1: The relationship between the present document and essential requirements of article 3.1(b) of Directive 2014/53/EU [i.2] is given in annex A.

NOTE 2: The present document does not cover the radio base stations as specified in ETSI EN 301 489-50 [i.13].

2 References

2.1 Normative 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 https://docbox.etsi.org/Reference/.

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

[1] ETSI EN 301 489-1 (V2.2.3) (11-2019): "ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard for ElectroMagnetic Compatibility".

[2] ETSI TS 134 108 (V15.2.0) (10-2019): "Universal Mobile Telecommunications System (UMTS); LTE; Common test environments for User Equipment (UE); Conformance testing (3GPP TS 34.108 version 15.2.0 Release 15)".

[3] ETSI TS 125 101 (V16.1.0) (11-2020): "Universal Mobile Telecommunications System (UMTS); User Equipment (UE) radio transmission and reception (FDD) (3GPP TS 25.101 version 16.1.0 Release 16)".

[4] ETSI TS 134 109 (V16.0.0) (07-2020): "Universal Mobile Telecommunications System (UMTS); Terminal logical test interface; Special conformance testing functions (3GPP TS 34.109 version 16.0.0 Release 16)".

[5] ETSI EN 300 296-1 (V1.4.1) (08-2013): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Radio equipment using integral antennas intended primarily for analogue speech; Part 1: Technical characteristics and methods of measurement".

[6] Recommendation ITU-T P.64 (06/2019): "Determination of sensitivity/frequency characteristics of local telephone systems".

[7] Recommendation ITU-T P.76 (11/1988): "Determination of loudness ratings; fundamental principles".

[8] ETSI TS 125 102 (V16.0.0) (08-2020): "Universal Mobile Telecommunications System (UMTS); User Equipment (UE) radio transmission and reception (TDD) (3GPP TS 25.102 version 16.0.0 Release 16)".

[9] ETSI TS 136 101 (V14.18.0) (05-2021): "LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception (3GPP TS 36.101 version 14.18.0 Release 14)".

[10] ETSI TS 136 508 (V16.8.0) (06-2021): "LTE; Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); Common test environments for User Equipment (UE) conformance testing (3GPP TS 36.508 version 16.8.0 Release 16)".

[11] ETSI TS 136 509 (V16.0.0) (05-2021): "LTE; Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); Special conformance testing functions for User Equipment (UE) (3GPP TS 36.509 version 16.0.0 Release 16)".

[12] ETSI TS 136 521-1 (V16.8.1) (06-2021): "LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Conformance testing (3GPP TS 36.521-1 version 16.8.1 Release 16)".

[13] ETSI TS 138 508-1 (V16.7.0) (06-2021): "5G; 5GS; User Equipment (UE) conformance specification; Part 1: Common test environment (3GPP TS 38.508-1 version 16.7.0 Release 16)".

[14] ETSI TS 138 101-1 (V16.7.0) (05-2021): "5G; NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone (3GPP TS 38.101-1 version 16.7.0 Release 16)".

[15] ETSI TS 138 521-1 (V16.6.0) (02-2021): "5G; NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Range 1 standalone (3GPP TS 38.521-1 version 16.6.0 Release 16)".

[16] ETSI TS 138 521-3 (V16.5.0) (11-2020): "5G; NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios (3GPP TS 38.521-3 version 16.5.0 Release 16)".

[17] EN 55035:2017 + A11:2020: "Electromagnetic compatibility of multimedia equipment - Immunity requirements" (produced by CENELEC).

[18] ETSI TS 100 910 (V8.20.0): "Digital cellular telecommunications system (Phase 2+); Radio Transmission and Reception (3GPP TS 05.05 version 8.20.0 Release 1999)".

[19] Void.

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] ETSI TR 121 905 (V15.1.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Vocabulary for 3GPP Specifications (3GPP TR 21.905 version 15.1.0 Release 15)".

[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 TR 125 990 (V3.0.0): "Universal Mobile Telecommunications System (UMTS); Vocabulary (3G TR 25.990 version 3.0.0 Release 1999)".

[i.4] 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.5] ETSI GTS 05.08 (V3.8.0) (01-1995): "European digital cellular telecommunications system (Phase 1); Radio Subsystem Link Control (GSM 05.08)".

NOTE: The technical content of ETSI I-ETS 300 034-1 has been transferred into ETSI GTS 05.08 (V3.8.0).

[i.6] ETSI GTS 05.08-DCS (V3.0.0) (01-1995): "European digital cellular telecommunications system (Phase 1); Radio Subsystem Link Control; (GSM 05.08 - DCS-1800)".

NOTE: The technical content of ETSI I-ETS 300 034-2 has been transferred into ETSI GTS 05.08-DCS (V3.0.0).

[i.7] ETSI ETS 300 578 (Edition 13) (03-1999): "Digital cellular telecommunications system (Phase 2) (GSM); Radio subsystem link control (GSM 05.08 version 4.22.1)".

[i.8] Void.

[i.9] ETSI EN 301 511 (V12.5.1) (03-2017): "Global System for Mobile communications (GSM); Mobile Stations (MS) equipment; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU".

[i.10] ETSI EN 301 908-4 (V6.2.1) (06-2013): "IMT cellular networks; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive; Part 4: CDMA Multi-Carrier (cdma2000) User Equipment (UE)".

[i.11] ETSI EN 301 908-2 (V11.1.2) (08-2017): "IMT cellular networks; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU; Part 2: CDMA Direct Spread (UTRA FDD) User Equipment (UE)".

[i.12] ETSI EN 301 908-13 (V11.1.2) (07-2017): "IMT cellular networks; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU; Part 13: Evolved Universal Terrestrial Radio Access (E-UTRA) User Equipment (UE)".

[i.13] ETSI EN 301 489-50 (V2.2.1) (04-2019): "ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 50: Specific conditions for Cellular Communication Base Station (BS), repeater and ancillary equipment; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU".

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in ETSI EN 301 489-1 [1] and the following apply:

ancillary equipment: electrical or electronic equipment, that is intended to be used with a receiver or transmitter

NOTE 1: It is considered as an ancillary equipment if:

- the equipment is intended for use with a receiver or transmitter to provide additional operational and/or control features to the radio equipment (e.g. to extend control to another position or location);
- the ancillary equipment cannot be used without being connected to radio equipment to provide user functions independently of a receiver or transmitter; and
- the receiver or transmitter, to which it is connected, is capable of providing some intended operation such as transmitting and/or receiving without the ancillary equipment (i.e. it is not a sub-unit of the main equipment essential to the main equipment basic functions).

NOTE 2: An example of ancillary equipment would be a docking station for radio equipment whose interface is dedicated to a particular product or range of products.

bearer: information transmission path of defined characteristics for transfer of user data or predefined test data

camped on a cell: UE is in idle mode and has completed the cell selection/reselection process and has chosen a cell

NOTE 1: The UE monitors system information and (in most cases) paging information.

NOTE 2: The services may be limited and the PLMN may not be aware of the existence of the UE within the chosen cell.

channel bandwidth: RF bandwidth supporting a single E-UTRA RF carrier with the transmission bandwidth configured in the uplink or downlink of a cell

NOTE: The channel bandwidth is measured in MHz and is used as a reference for transmitter and receiver RF requirements.

critical stored data: data that is essential for an EUT to perform a primary function in accordance with that EUT's specification

NOTE: This may include data previously stored by the user.

data application ancillary: ancillary which provides, sends and/or receives data access to UMTS services via UE

end-user data: manufacturer defined data patterns for data transfer testing

NOTE: Represents EUT's typical user application data pattern (e.g. photo, video, text file, message) in its characteristics.

fixed equipment: equipment intended for use in a fixed location and fitted with one or more antennas

NOTE: The equipment may be fitted with either antenna socket(s) or integral antenna(s) or both.

idle mode:

- For UTRA/EUTRA equipment: state of User Equipment (UE) when switched on but with no Radio Resource Control (RRC) connection.
- For GSM: mode of operation of a receiver or a transceiver, where the Equipment Under Test (EUT) is powered, available for service and available to respond to a request to set up a call.