



SLOVENSKI STANDARD
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Standard elektromagnetne združljivosti (EMC) za radijsko opremo in storitve - 28. del: Posebni pogoji za brezžične digitalne video povezave - Harmonizirani standard za elektromagnetno združljivost

ElectroMagnetic Compatibility (EMC) standard for radio equipment and services - Part 28: Specific conditions for wireless digital video links - Harmonised Standard for ElectroMagnetic Compatibility

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HARMONISED EUROPEAN STANDARD

**ElectroMagnetic Compatibility (EMC)
standard for radio equipment and services;
Part 28: Specific conditions for wireless digital video links;
Harmonised Standard for ElectroMagnetic Compatibility**

[SIST EN 301 489-28 V2.1.1:2025](https://standards.iteh.ai/catalog/standards/sist/c9dccc5b-c48d-44ab-b30b-7e67c63c79ae/sist-en-301-489-28-v2-1-1-2025)

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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.3] 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.1].

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 28 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 2024
Date of latest announcement of this EN (doa):	28 February 2025
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 August 2025
Date of withdrawal of any conflicting National Standard (dow):	31 August 2026

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).

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1 Scope

The present document specifies the applicable test conditions, performance assessment and performance criteria for wireless digital video links operating in the frequency band 1,3 GHz to 50 GHz and the associated ancillary equipment, in respect of electromagnetic compatibility.

Technical specifications related to the antenna port and emissions from the enclosure port of the radio equipment are not included in the present document. Such technical specifications are found in the relevant product standard for the effective use of the radio spectrum, see table 1.

Table 1: Radio Technologies in scope of the present document

Technology	ETSI Standard
Wireless Video Links operating in the 1,3 GHz to 50 GHz frequency band	ETSI EN 302 064 [i.2]

Technical specifications related to conducted emission EMC requirements below 9 kHz on the AC mains port of radio equipment are not included in the present document.

NOTE 1: Such technical specifications are normally found in the relevant product family standards for AC mains powered equipment (e.g. EN IEC 61000-3-2/A2 [i.4] and EN 61000-3-3/A2 [i.5]).

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

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://standards.iteh.ai> <https://standards.iteh.ai/standards/EN-301-489-28-v2-1-1-2025>
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The following referenced documents are necessary for the application of the present document.

- [1] [ETSI EN 301 489-1 \(V2.2.3\) \(11-2019\)](https://standards.iteh.ai/standards/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".

2.2 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.

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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] [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.2] ETSI EN 302 064: "Wireless Digital Video Links operating in the 1,3 GHz to 50 GHz frequency band; Harmonised Standard for access to radio spectrum".
- [i.3] [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.4] [EN IEC 61000-3-2:\(2019\)/A2:\(2024\)](#): "Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)", (produced by CENELEC).
- [i.5] [EN 61000-3-3:\(2013\)/A2:\(2021\)](#): "Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection", (produced by CENELEC).

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.

integral antenna: antenna designed to be connected to the equipment without the use of a 50 Ω external connector and considered to be part of the equipment

NOTE: An integral antenna may be fitted internally or externally to the equipment.

quasi-error-free: transmission error rate less than one uncorrected event per hour, which corresponds to a specific BER threshold for each signal type

switching range: maximum frequency range over which the receiver or transmitter can be operated without reprogramming or realignment

3.2 Symbols

Void.

3.3 Abbreviations

For the purpose of the present document, the following abbreviations apply:

AC	Alternating Current
BER	Bit Error Rate
DC	Direct Current
DVB-S2	Digital Video Broadcast - Satellite (second generation)
DVB-T	Digital Video Broadcast - Terrestrial
DVB-T2	Digital Video Broadcast - Terrestrial (second generation)
EFTA	European Free Trade Association
EMC	ElectroMagnetic Compatibility
EUT	Equipment Under Test
FEC	Forward Error Correction
LDPC	Low Density Parity Check
LONM	Loss Of Noise Margin
QEF	Quasi-Error-Free
RF	Radio Frequency
TS	Transport Stream

4 Test conditions

4.1 General

For the purposes of the present document, the test conditions of ETSI EN 301 489-1 [1], clause 4 shall apply as appropriate. Further product related test conditions for wideband data communications systems are specified in clauses 4.2 to 4.3.

Whenever the EUT is provided with a detachable antenna, it shall be tested with the antenna fitted in a manner typical of normal intended use.

For immunity tests, if the equipment is of a category which permits it, a communications link shall be established at the start of the test and maintained during the test.

The environmental classification and the emission and immunity requirements used in the present document are as stated in ETSI EN 301 489-1 [1], except for any special conditions included in the present document.

The test conditions shall be as follows:

- the transmitter shall be operated at its normal maximum RF output power modulated with a test signal which represents the normal operation of the equipment for its intended use (see clause 4.2.1);
- for standalone receivers or receivers of transceivers operating in simplex mode, the wanted RF input signal, coupled to the receiver, shall be modulated with a test signal which represents the normal operation of the equipment for its intended use (see clause 4.2.3);