



SLOVENSKI STANDARD
SIST EN 302 245 V2.2.1:2022

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Oddajniška oprema za storitve svetovnega digitalnega radia (DRM) - Harmonizirani standard za dostop do radijskega spektra

Transmitting equipment for the Digital Radio Mondiale (DRM) service - Harmonised Standard for access to radio spectrum

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**Transmitting equipment for the
Digital Radio Mondiale (DRM) service;
Harmonised Standard for access to radio spectrum**

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Foreword

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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.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.

National transposition dates

Date of adoption of this EN:	17 May 2022
Date of latest announcement of this EN (doa):	31 August 2022
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	28 February 2023
Date of withdrawal of any conflicting National Standard (dow):	29 February 2024

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 technical characteristics and methods of measurements for transmitting equipment for the Digital Radio Mondiale (DRM) sound broadcasting service operating in the LF band, MF band, HF band and VHF band.

NOTE: The relationship between the present document and essential requirements of article 3.2 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.

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- [1] ETSI ES 201 980 (V4.2.1) (01-2021): "Digital Radio Mondiale (DRM); System Specification".

2.2 Informative references

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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] Void.
- [i.3] Void.
- [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.

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in Directive 2014/53/EU [i.1] and the following apply:

amplitude imbalance: error caused by different amplification of the I and Q signals

antenna port: port of an apparatus which is designed, in normal operation, to be connected to an antenna using coaxial cable

broadcasting service: radiocommunication service in which the transmissions are intended for direct reception by the general public

NOTE: This service may include sound transmissions, television transmissions or other types of transmission.

channel bandwidth: frequency band of defined width (as a multiple of the carrier grid) including safety margin for operation on adjacent channels, located symmetrically around a carrier frequency in the carrier grid

dBc: decibels relative to the unmodulated carrier power of the emission

NOTE: In the cases which do not have a carrier, for example in some digital modulation schemes where the carrier is not accessible for measurement, the reference level equivalent to dBc is decibels relative to the mean power P.

DRM transmitter: device comprising a DRM exciter, RF amplifier and RF system filter

enclosure port: physical boundary of the apparatus through which electromagnetic fields may radiate or impinge

NOTE: In the case of integral antenna equipment, this port is inseparable from the antenna port.

harmonic: component of order greater than 1 of the Fourier series of a periodic quantity

harmonic number: integral number given by the ratio of the frequency of a harmonic to the fundamental frequency

NOTE: Second harmonic = $2 \times$ fundamental frequency.

intermodulation products: unwanted frequencies resulting from intermodulation between carriers or harmonics of emission, or between any oscillations generated to produce the carrier

mean power: average power supplied to the antenna port by a transmitter during an interval of time sufficiently long compared with the lowest frequency encountered in the modulation envelope taken under normal operating conditions

necessary bandwidth: width of the frequency band which is sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions

out-of-band emissions: emission on a frequency or frequencies immediately outside the necessary bandwidth which results from the modulation process, but excluding spurious emissions

quadrature error: error caused by phase shift between the I and Q signals

rated output power: mean power that the transmitter delivers at its antenna port under specified conditions of operation

reference bandwidth: bandwidth in which the emission level is specified

RF system filter: filter connected to the output of the RF amplifier to control output spectrum

NOTE: The RF system filter may be internal or external to the transmitter casing.

spurious emissions: emission on a frequency or frequencies which are outside the necessary bandwidth and the level of which may be reduced without affecting the corresponding transmission of information

NOTE: Spurious emissions include harmonic emissions, parasitic emissions, intermodulation products and frequency conversion products but exclude out-of-band emissions.

unwanted emissions: spurious emissions and out-of-band emissions

3.2 Symbols

For the purposes of the present document, the following symbols apply:

Hz	Hertz (cycles per second)
μ	micro, 10 ⁻⁶
V	Volt
W	Watt

3.3 Abbreviations

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

DC	Direct Current
DRM	Digital Radio Mondiale
EFTA	European Free Trade Association
EN	European Norm
EUT	Equipment Under Test
HF	High Frequency
I	In-phase component of a signal
LF	Low Frequency
MER	Modulation Error Ratio
MF	Medium Frequency
N	Noise power
OFDM	Orthogonal Frequency Division Multiplex
Q	Quadrature phase component of a signal
QAM	Quadrature Amplitude Modulation
RF	Radio Frequency
VHF	Very High Frequency

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4 Technical requirements specifications

4.1 Environmental profile

The technical requirements of the present document apply under the environmental profile for operation of the equipment, which shall be in accordance with its intended use. The equipment shall comply with all the technical requirements of the present document at all times when operating within the boundary limits of the operational environmental profile defined by its intended use.

4.2 Conformance requirements

4.2.1 Rated output power

4.2.1.1 Definition

The rated output power is the mean power that the transmitter shall deliver at its antenna port.

4.2.1.2 Limit

The mean output power shall be within -0,5 dB of the rated output power under normal operating conditions as defined by the manufacturer.