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**Splošni standard za oceno skladnosti nizkonapetostne elektronske in električne opreme glede na mejne vrednosti izpostavljenosti ljudi elektromagnetnemu sevanju (10 MHz - 300 GHz)**

Generic standard for assessment of low power electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)

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Norme de produit pour l'évaluation de la conformité des appareils électriques et électroniques de faible puissance aux restrictions de base concernant l'exposition des personnes aux champs électromagnétiques (10 MHz à 300 GHz)

**Ta slovenski standard je istoveten z: EN 50663:2017**

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29.020	Elektrotehnika na splošno	Electrical engineering in general
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**SIST EN 50663:2018**

**en**

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EUROPEAN STANDARD

**EN 50663**

NORME EUROPÉENNE

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English Version

## Generic standard for assessment of low power electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (10 MHz - 300 GHz)

Norme de produit pour l'évaluation de la conformité des appareils électriques et électroniques de faible puissance aux restrictions de base concernant l'exposition des personnes aux champs électromagnétiques (10 MHz à 300 GHz)

Produktnorm für die Beurteilung der Übereinstimmung von elektronischen und elektrischen Geräten kleiner Leistung mit den Basisgrenzwerten für die Exposition von Personen gegenüber elektromagnetischen Feldern (10 MHz bis 300 GHz)

This European Standard was approved by CENELEC on 2017-08-07. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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## European foreword

This document (EN 50663:2017) has been prepared by the Technical Committee CENELEC/TC 106X "Electromagnetic fields in the human environment".

The following dates are fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2018-08-07
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2020-08-07

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under mandates (M/511 and M/536) given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of the Radio Equipment Directive 2014/53/EU and the Low Voltage Directive 2014/35/EU.

For relationships with EU Directives, see informative Annexes ZZA and ZZB, which are an integral part of this document.

This European Standard is intended to be read in conjunction with EN 62479:2010 "Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure restrictions for to electromagnetic fields (10 MHz to 300 GHz)".

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## EN 50663:2017 (E)

## 1 Scope

This European Standard provides simple conformity assessment methods for low-power electronic and electrical equipment operating at frequencies between 10 MHz and 300 GHz to an electromagnetic field (EMF) exposure limit. If such equipment cannot be shown to comply with the applicable EMF exposure requirements using the exposure assessment methods in this standard, then other EMF product standards may be used for conformity assessment.

NOTE Other standards can apply to equipment covered by this document. In particular, this document is not designed to evaluate the electromagnetic compatibility with other equipment; nor does it reflect any product safety requirements other than those specifically related to human exposure to electromagnetic fields.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 62479:2010, *Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz) (IEC 62479:2010)*

EN 62311:2008, *Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz) (IEC 62311:2007)*

Council Recommendation 1999/519/EC of 12 July 1999, *on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz)*, Official Journal, L199, of 1999-7-30, p.59-70

Directive 2013/35/EU of 26 June 2013, *on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields)*. Official Journal, L179, of 2013-6-29, p. 1–21

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## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### basic restrictions

restrictions on exposure of the general public to electric, magnetic and electromagnetic fields that are based directly on established health effects and biological considerations

### 3.2

#### exposure limit values

restrictions on exposure of workers to electric, magnetic and electromagnetic fields that are based directly on established health effects and biological considerations

### 3.3

#### worker

person exposed to electromagnetic fields under the conditions defined in Directive 2013/35/EU

## 4 Exposure conditions

Equipment which meets the limits for general public exposure as given in this document (Clause 5) will automatically meet the limits for workers.

Equipment which meets the limits for workers will not necessarily meet the limits for the general public and, unless intended only for workers' use when at work, equipment shall also be tested against general public limits.

Equipment intended only for use by workers when at work shall have this condition clearly identified in the user instructions. This use condition shall be identified in the test report.

All intended operating conditions as well as the reasonably foreseeable conditions of human exposure from the equipment shall be taken into account in the evaluation.

The reasonably foreseeable conditions of exposure should be based on realistic exposure and/or installation parameters representative of all readily-predictable human and system behaviour such as the duration of exposure, time varying of transmitted power, simultaneously operated frequency bands and time averaging as defined in normative limits.

## 5 Normative limits

### 5.1 Equipment used by the general public

The basic restrictions for frequencies above 10 MHz in Table 1 of Annex II of Council Recommendation 1999/519/EC shall be applied. Notes 1, 6, 7 and 8 of this Table also shall be applied.

### 5.2 Equipment used only by workers

The exposure limit values in Tables A1, A2 and A3 of of Annex III of Directive 2013/35/EU shall be applied. Notes A1-1, A2-1 and A3-1 to those Tables also shall be applied.

## 6 Evaluation of compliance

Equipment complying with the requirements for the general public is deemed to comply with the requirements for workers without further testing.

The conformity assessment to demonstrate equipment compliance shall be made according to EN 62479:2010, 4.1 and Clause 6.

If routes B, C or D of 4.1 of EN 62479:2010 are followed then the values of  $P_{max}$ , as described in 4.2 of EN 62479:2010 and given in Annex A of EN 62479:2010, shall be replaced by those in Table 1 below.

**Table 1 — Values of  $P_{max}$**

Exposure tier	Region of body	$P_{max}$ (mW)
General public	Head and trunk	20
	Limbs	40
Workers	Head and trunk	100
	Limbs	200

## 7 Assessment uncertainty

The uncertainty of the assessment shall be calculated as defined in EN 62479:2010, Clause 6.

## 8 Evaluation report

The evaluation report shall be made according to EN 62311:2008, Clause 9.

## Annex ZZA (informative)

### Relationship between this European standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered

This European standard has been prepared under a Commission's standardization request relating to harmonized standards in the field of the Low Voltage Directive, M/511, to provide one voluntary means of conforming to safety objectives of Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding safety objectives of that Directive, and associated EFTA regulations.

**Table ZZA.1 — Correspondence between this European standard and Annex I of Directive 2014/35/EU**

Safety objectives of Directive 2014/35/EU	Clause(s) / subclause(s) of this EN	Remarks / Notes
Annex I (2) (a) and (b)	5 Normative limits	Annex I (2) of Directive 2014/35/EU requires that measures of a technical nature shall be laid down in order to ensure that: (a) persons and domestic animals are adequately protected against the danger of physical injury or other harm which might be caused by direct or indirect contact; (b) temperatures, arcs or radiation which would cause a danger, are not produced; This document only provides health and safety protection against exposure to electromagnetic fields. Compliance with the requirements of this standard provides health and safety protection, in accordance with Annex I (2) (a) and (b) of Directive 2014/35/EU, against exposure to electromagnetic fields only. It does not address any other essential requirement of Directive 2014/53/EU than Annex I (2) (a) and (b) of Directive 2014/35/EU. The degree of the protection of health and safety of persons and of domestic animals and the protection of property provided by this standard is that provided by the limits selected.
Annex I (2) (a) and (b)	6 Evaluation of compliance	
Annex I (2) (a) and (b)	8 Evaluation report	
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Recital 25 Annex I (2) (a) and (b)	4 Exposure conditions	In accordance with Recital 25 and Annex I of Directive 2014/35/EU, for the essential requirements set out in Annex I (2) (a) and (b), the assessment also takes into account reasonably foreseeable operating conditions.



**WARNING 1:** Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

**WARNING 2:** Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

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