

© Copyright SEK. Reproduction in any form without permission is prohibited.

Bedömning av elektrisk och elektronisk lågeffektutrustnings överensstämmelse med de grundläggande begränsningarna avseende exponering för elektromagnetiska fält (10 MHz till 300 GHz)

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)

Som svensk standard gäller europastandarden EN 62479:2010. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62479:2010.

Nationellt förord

Europastandarden EN 62479:2010

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 62479, First edition, 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)**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 50371, utgåva 1, 2002, gäller ej fr o m 2013-09-01.

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

SEK Svensk Elstandard

Box 1284
164 29 Kista
Tel 08-444 14 00
www.elstandard.se

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, modified)

Evaluation 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)
(CEI 62479:2010, modifiée)

Beurteilung der Übereinstimmung von elektronischen und elektrischen Geräten kleiner Leistung mit den Basisgrenzwerten für die Sicherheit von Personen in elektromagnetischen Feldern (10 MHz bis 300 GHz)
(IEC 62479:2010, modifiziert)

This European Standard was approved by CENELEC on 2010-09-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 106/198/FDIS, future edition 1 of IEC 62479, prepared by IEC TC 106, Methods for the assessment of electric, magnetic and electromagnetic fields associated with human exposure, was submitted to the IEC-CENELEC parallel vote.

A draft amendment to the European Standard was prepared by the Technical Committee CENELEC TC 106X, Electromagnetic fields in the human environment. It was submitted to the Unique Acceptance Procedure.

The combined texts were approved by CENELEC as EN 62479 on 2010-09-01.

This European Standard supersedes EN 50371:2002.

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

The following dates were 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) | 2011-09-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2013-09-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62479:2010 was approved by CENELEC as a European Standard with agreed common modifications as given below.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

ISO/IEC 17025:2005 NOTE Harmonized as EN ISO/IEC 17025:2005 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62311 (mod)	-	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)	EN 62311	-

CONTENTS

1	Scope.....	5
2	Normative references	5
3	Terms and definitions	5
4	Conformity assessment methods	8
4.1	General considerations.....	8
4.2	Low-power exclusion level ($P_{\max}$)	9
4.3	Exposure to multiple transmitting sources	10
5	EMF assessment report.....	10
5.1	General considerations.....	10
5.2	Equipment-related information.....	10
6	Use of measurement uncertainty in the evaluation of compliance to limits	10
	Annex A (informative) Derivation of low-power exclusion level from ICNIRP and IEEE exposure limits	12
	Annex B (informative) Derivation of alternative low-power exclusion levels for wireless devices used close to the body	14
	Annex C (informative) Compliance requirement for a pulsed field.....	17
	Annex D (informative) Topics from ISO/IEC 17025 relevant for EMF assessment reports	18
	Bibliography.....	19
	Figure 1 – Routes to show compliance with low-power exclusion level.....	9
	Table A.1 – Example values of SAR-based $P_{\max}$ for some cases described by ICNIRP, IEEE Std C95.1-1999 and IEEE Std C95.1-2005.....	13
	Table B.1 – Some typical frequency bands of portable wireless devices and corresponding low-power exclusion levels $P_{\max}'$ predicted using Equations (B.1) through (B.9)	16

**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)**

1 Scope

This International Standard provides simple conformity assessment methods for low-power electronic and electrical equipment to an exposure limit relevant to electromagnetic fields (EMF). If such equipment cannot be shown to comply with the applicable EMF exposure requirements using the methods included in this standard for EMF assessment, then other standards, including IEC 62311 or other (EMF) product standards, may be used for conformity assessment.

2 Normative references

The following referenced documents are indispensable for the application 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.

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