



**NSAI**  
Standards

Irish Standard  
I.S. EN 50400:2006

Basic standard to demonstrate the compliance of fixed equipment for radio transmission (110 MHz - 40 GHz) intended for use in wireless telecommunication networks with the basic restrictions or the reference levels related to general public exposure to radio frequency electromagnetic fields, when put into service

## I.S. EN 50400:2006

*Incorporating amendments/corrigenda issued since publication:*

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EN 50400:2006/A1:2012

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**I.S. EN 50400:2006**



Corrigendum to EN 50400:2006

English version

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Following decision of BT 139, item 2.6.1, replace in the Swiss A-deviation for EN 50400:2006 "This product standard must not be applied" with "This basic standard must not be applied".

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October 2011

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**Basic standard to demonstrate the compliance of fixed equipment for radio transmission (110 MHz - 40 GHz) intended for use in wireless telecommunication networks with the basic restrictions or the reference levels related to general public exposure to radio frequency electromagnetic fields, when put into service**

Norme de base pour démontrer la conformité des équipements fixes de transmission radio (110 MHz - 40 GHz) destinés à une utilisation dans les réseaux de communication sans fil, aux restrictions de base ou aux niveaux de référence relatives à l'exposition des personnes aux champs électromagnétiques de fréquence radio, lors de leur mise en service

Grundnorm zum Nachweis der Übereinstimmung von stationären Einrichtungen für Funkübertragungen (110 MHz bis 40 GHz), die zur Verwendung in schnurlosen Telekommunikationsnetzen vorgesehen sind, bei ihrer Inbetriebnahme mit den Basisgrenzwerten oder den Referenzwerten bezüglich der Exposition der Allgemeinbevölkerung gegenüber hochfrequenten elektromagnetischen Feldern

This amendment A1 modifies the European Standard EN 50400:2006; it was approved by CENELEC on 2012-08-29. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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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# 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**

This document (EN 50400:2006/A1:2012) has been prepared by CLC/TC 106X, "Electromagnetic fields in the human environment".

The following dates are fixed:

- latest date by which the amendment has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2013-08-29
- latest date by which the national standards conflicting  
with the amendment have to be withdrawn (dow) 2015-08-29

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EUROPEAN STANDARD

**EN 50400**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2006

ICS 17.220.20; 33.070.01

English version

**Basic standard to demonstrate the compliance of fixed equipment  
for radio transmission (110 MHz - 40 GHz)  
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This European Standard was approved by CENELEC on 2005-12-06. 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, 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

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

**I.S. EN 50400:2006**

EN 50400:2006

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**Foreword**

This European Standard was prepared by Technical Committee CENELEC TC 106X, Electromagnetic fields in the human environment.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50400 on 2005-12-06.

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This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.



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## 1 Scope

This basic standard applies to Base Stations as defined in Clause 4, operating in the frequency range 110 MHz to 40 GHz.

The objective of this basic standard is to specify, for such equipment and when it is put into service in its operational environment, the methods to assess the value of the Total Exposure Ratio or to establish whether the Total Exposure Ratio is less than or equal to one in relevant areas where the general public has access.

## 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.

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 L 199 of 30 July 1999)

EN 50383, Basic standard for the calculation and measurement of electromagnetic field strength and SAR related to human exposure from radio base stations and fixed terminal stations for wireless telecommunication systems (110 MHz - 40 GHz)

EN ISO/IEC 17025:2000, General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:1999)

ISO "Guide to the expression of uncertainty in measurement": Ed.1 1995

International Commission on Non-Ionizing Radiation Protection (1998), Guidelines for limiting exposure in time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz)  
Health physics 74, 494-522

## 3 Physical quantities, units and constants

### 3.1 Quantities

The internationally accepted SI-units are used throughout the standard.

<u>Quantity</u>	<u>Symbol</u>	<u>Unit</u>	<u>Dimensions</u>
Electric field strength	E	volt per meter	V/m
Electric flux density	D	coulomb per square meter	C/m <sup>2</sup>
Frequency	f	hertz	Hz
Magnetic field strength	H	ampere per meter	A/m
Magnetic flux density	B	tesla (Vs /m <sup>2</sup> )	T
Mass density	$\rho$	kilogram per cubic meter	kg/m <sup>3</sup>
Permeability	$\mu$	Henry per meter	H/m
Permittivity	$\epsilon$	farad per meter	F/m
Specific absorption rate	SAR	watt per kilogram	W/kg
Wavelength	$\lambda$	meter	m

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