

# Electromagnetic compatibility (EMC) —

**Part 4-3: Testing and measurement  
techniques — Radiated,  
radio-frequency, electromagnetic  
field immunity test**

ICS 33.100.20

# National foreword

This British Standard is the UK implementation of EN 61000-4-3:2006+A2:2010. It is identical to IEC 61000-4-3:2006, incorporating amendments 1:2007 and 2:2010. It supersedes BS EN 61000-4-3:2006+A1:2008 which will be withdrawn on 1 July 2013.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by **A1** ~~A1~~.

National Annex NA (informative) reproduces CENELEC interpretation sheet 1 (February 2009).

The UK participation in its preparation was entrusted by Technical Committee GEL/210, EMC — Policy Committee, to Subcommittee GEL/210/12, EMC basic, generic and low frequency phenomena Standardization.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

**Compliance with a British Standard cannot confer immunity from legal obligations.**

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English version

**Electromagnetic compatibility (EMC)**  
**Part 4-3: Testing and measurement techniques -**  
**Radiated, radio-frequency, electromagnetic field immunity test**  
(IEC 61000-4-3:2006+A1:2007, A2:2010)

Compatibilité électromagnétique (CEM)  
Partie 4-3: Techniques d'essai  
et de mesure -  
Essai d'immunité aux champs  
électromagnétiques rayonnés  
aux fréquences radioélectriques  
(CEI 61000-4-3:2006+A1:2007, A2:2010)

Elektromagnetische Verträglichkeit (EMV)  
Teil 4-3: Prüf- und Messverfahren -  
Prüfung der Störfestigkeit  
gegen hochfrequente  
elektromagnetische Felder  
(IEC 61000-4-3:2006+A1:2007, A2:2010)

This European Standard was approved by CENELEC on 2006-03-01. 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, 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**

## Foreword

The text of document 77B/485/FDIS, future edition 3 of IEC 61000-4-3, prepared by SC 77B, High frequency phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61000-4-3 on 2006-03-01.

This European Standard supersedes EN 61000-4-3:2002 + A1:2002 + IS1:2004.

The test frequency range may be extended up to 6 GHz to take account of new services. The calibration of the field as well as the checking of power amplifier linearity of the immunity chain are specified.

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) 2006-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2009-03-01

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 61000-4-3:2006 was approved by CENELEC as a European Standard without any modification.

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## Foreword to amendment A1

The text of document 77B/546/FDIS, future amendment 1 to IEC 61000-4-3:2006, prepared by SC 77B, High frequency phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 61000-4-3:2006 on 2008-02-01.

The following dates were 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) 2008-11-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2011-02-01

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## Endorsement notice

The text of amendment 1:2007 to the International Standard IEC 61000-4-3:2006 was approved by CENELEC as an amendment to the European Standard without any modification.

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### **Foreword to amendment A2**

The text of document 77B/626/FDIS, future amendment 2 to IEC 61000-4-3:2006, prepared by SC 77B, High frequency phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A2 to EN 61000-4-3:2006 on 2010-07-01.

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 amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2011-04-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2013-07-01

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### **Endorsement notice**

The text of amendment 2:2010 to the International Standard IEC 61000-4-3:2006 was approved by CENELEC as an amendment to the European Standard without any modification.

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## INTRODUCTION

This standard is part of the IEC 61000 series, according to the following structure:

### **Part 1: General**

General considerations (introduction, fundamental principles)  
Definitions, terminology

### **Part 2: Environment**

Description of the environment  
Classification of the environment  
Compatibility levels

### **Part 3: Limits**

Emission limits  
Immunity limits (in so far as they do not fall under the responsibility of the product committees)

### **Part 4: Testing and measurement techniques**

Measurement techniques  
Testing techniques

### **Part 5: Installation and mitigation guidelines**

Installation guidelines  
Mitigation methods and devices

### **Part 6: Generic standards**

### **Part 9: Miscellaneous**

Each part is further subdivided into several parts, published either as international standards or as technical specifications or technical reports, some of which have already been published as sections. Others will be published with the part number followed by a dash and a second number identifying the subdivision (example: 61000-6-1).

This part is an International Standard which gives immunity requirements and test procedures related to radiated, radio-frequency, electromagnetic fields.



## ELECTROMAGNETIC COMPATIBILITY (EMC) –

### Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test

#### 1 Scope and object

This part of IEC 61000 is applicable to the immunity requirements of electrical and electronic equipment to radiated electromagnetic energy. It establishes test levels and the required test procedures.

The object of this standard is to establish a common reference for evaluating the immunity of electrical and electronic equipment when subjected to radiated, radio-frequency electromagnetic fields. The test method documented in this part of IEC 61000 describes a consistent method to assess the immunity of an equipment or system against a defined phenomenon.

NOTE 1 As described in IEC Guide 107, this is a basic EMC publication for use by product committees of the IEC. As also stated in Guide 107, the IEC product committees are responsible for determining whether this immunity test standard should be applied or not, and if applied, they are responsible for determining the appropriate test levels and performance criteria. TC 77 and its sub-committees are prepared to co-operate with product committees in the evaluation of the value of particular immunity tests for their products.

This part deals with immunity tests related to the protection against RF electromagnetic fields from any source.

Particular considerations are devoted to the protection against radio-frequency emissions from digital radiotelephones and other RF emitting devices.

NOTE 2 Test methods are defined in this part for evaluating the effect that electromagnetic radiation has on the equipment concerned. The simulation and measurement of electromagnetic radiation is not adequately exact for quantitative determination of effects. The test methods defined are structured for the primary objective of establishing adequate repeatability of results at various test facilities for qualitative analysis of effects.

This standard is an independent test method. Other test methods may not be used as substitutes for claiming compliance with this standard.

#### 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 60050(161), *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*

IEC 61000-4-6, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*