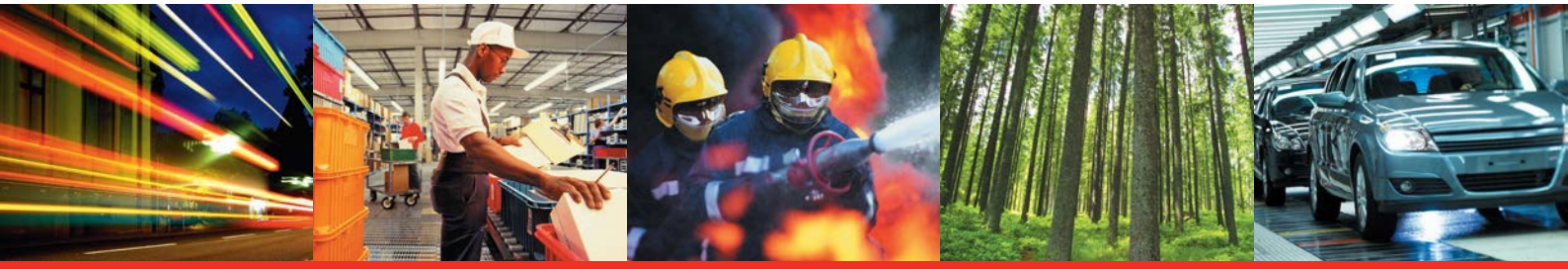
BS EN IEC 61000-4-3:2020 — Tracked Changes

with BS EN 61000-4-3:2006+A2:2010
Incorporating corrigendum October 2009



BSI Standards Publication

Electromagnetic compatibility (EMC)

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

bsi.

IMPORTANT — PLEASE NOTE

This is a tracked changes copy and uses the following colour coding:

Text example 1 — indicates added text (in green)

~~Text example 2~~ — indicates removed text (in red)

 — indicates added graphic figure or table

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About Tracked Changes

This document is a PDF containing a Tracked Changes version of BS EN IEC 61000-4-3, which compares BS EN IEC 61000-4-3:2020 with BS EN 61000-4-3:2006+A2:2010.

The original version of BS EN IEC 61000-4-3:2020, appended at the end of this document, should be considered the version of record for this publication.

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Amendments/corrigenda issued since publication

Date	Text affected

National foreword

This British Standard is the UK implementation of ~~EN 61000-4-3:2006+A2:2010~~EN IEC 61000-4-3:2020. It is identical to ~~IEC 61000-4-3:2006~~IEC 61000-4-3:2020~~, incorporating amendments 1:2007 and 2:2010.~~ It supersedes ~~BS EN 61000-4-3:2006+A1:2008~~ BS EN 61000-4-3:2006+A2:2010, which will be withdrawn on ~~1 July 2013~~13 October 2023.

~~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~~to Technical Committee GEL/210/11, EMC - ~~Policy~~Standards Committee~~, to Subcommittee GEL/210/12, EMC basic, generic and low frequency phenomena Standardization~~.

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

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

ISBN ~~978 0 580 69858 3~~978 0 539 15923 3

ICS 33.100.20

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

This British Standard was published under the authority of the Standards Policy and Strategy Committee on ~~31 July 2006~~30 November 2020.

Amendments/corrigenda issued since publication

Date	Comments
30 May 2008	Implementation of IEC amendment 1:2007 with CENELEC endorsement A1:2008
31 October 2009	Addition of CENELEC interpretation sheet 1 (February 2009) in National Annex NA
31 August 2010	Implementation of IEC amendment 2:2010 with CENELEC endorsement A2:2010

Date	Text affected
30 November 2020	Replacement of web version of document

NORME EUROPÉENNE

EUROPÄISCHE NORM

~~EN IEC 61000-4-3~~

~~July 2010~~October 2020

ICS 33.100.20

Supersedes ~~EN 61000-4-3:2002 + A1:2002 + IS1:2004~~
EN 61000-4-3:2006, EN 61000-4-3:2006/IS1:2009and all of its amendments and corrigenda (if any)

English ~~version~~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~~IEC 61000-4-3:2020)

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~~IEC 61000-4-3:2020)

Elektromagnetische Verträglichkeit (EMV) - Teil 4-3: Prüfund Messverfahren - Prüfung der Störfestigkeit gegen hochfrequente elektromagnetische Felder
(~~IEC 61000-4-3:2006+A1:2007, A2:2010~~IEC 61000-4-3:2020)

This European Standard was approved by CENELEC on ~~2006-03-01~~2020-10-13. 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~~ 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 ~~Central Secretariat~~CEN-CENELEC Management Centre 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

~~Central Secretariat: rue~~CEN-CENELEC Management Centre: Rue de ~~Stassart 35~~la Science 23, B - ~~1050~~1040 Brussels

~~Foreword~~European foreword

The text of document 77B/~~485~~830/FDIS, future edition ~~3~~4 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~~EN IEC 61000-4-3:2020.

~~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 acount 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~~are fixed:

• latest date by which the ~~EN~~document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	~~2006-12-01~~ 2021-07-13
• latest date by which the national standards conflicting with the ~~EN~~document have to be withdrawn	(dow)	~~2009-03-01~~ 2023-10-13

~~Annex ZA has been added by CENELEC.~~

~~Endorsement notice~~

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

~~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~~

~~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.~~

~~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~~

~~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.~~

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

Endorsement notice

The text of the International Standard IEC 61000-4-3:2020 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61000-4 series	NOTE	Harmonized as EN 61000-4 series
IEC 61000-4-6	NOTE	Harmonized as EN 61000-4-6
IEC 61000-4-20:2010	NOTE	Harmonized as EN 61000-4-20:2010 (not modified)
IEC 61000-4-21	NOTE	Harmonized as EN 61000-4-21
IEC 61000-4-22	NOTE	Harmonized as EN 61000-4-22
IEC 61000-4-39	NOTE	Harmonized as EN 61000-4-39
CISPR 16-1-4	NOTE	Harmonized as EN IEC 55016-1-4

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60050-161	-	International Electrotechnical Vocabulary. Chapter 161: Electromagnetic compatibility	-	-

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTROMAGNETIC COMPATIBILITY (EMC) –

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

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61000-4-3 has been prepared by subcommittee 77B: High frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

It forms part 4-3 of IEC 61000. It has the status of a basic EMC publication in accordance with IEC Guide 107.

This fourth edition cancels and replaces the third edition published in 2006, Amendment 1:2007 and Amendment 2:2010. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) testing using multiple test signals has been described;
b) additional information on EUT and cable layout has been added;
c) the upper frequency limitation has been removed to take account of new services;
d) the characterization of the field as well as the checking of power amplifier linearity of the immunity chain are specified.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
77B/830/FDIS	77B/825/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61000 series, published under the general title *Electromagnetic compatibility (EMC)*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

~~This standard is part of the~~ IEC 61000 ~~series,~~is published in separate parts 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: IEC 61000-6-1).

This part is an ~~International Standard~~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~~document is to establish a common reference for evaluating the immunity of electrical and electronic equipment when subjected to radiated, radio-frequency ~~electro-magnetic~~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~~RF electromagnetic fields from RF sources not in close proximity to the EUT. The test environment is specified in Clause 6.

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.~~

NOTE 2 Immunity testing against RF sources in close proximity to the EUT is defined in IEC 61000-4-39.

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

NOTE ~~2~~3 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~~in this basic document have the primary objective of establishing an adequate reproducibility of testing configuration and repeatability of test results at various test facilities ~~for qualitative analysis of effects~~.

This ~~standard~~document is an independent test method. ~~Other~~It is not possible to use other test methods ~~may not be used~~ as substitutes for claiming compliance with this ~~standard~~document.

2 Normative references

The following ~~referenced~~ documents are ~~indispensable for~~ referred to in the ~~application~~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.

IEC 60050-161, *International Electrotechnical Vocabulary (IEV) – ~~Chapter~~Part 161: ~~Electro-magnetic compatibility~~*

~~IEC 61000-4-6, Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields~~available at www.electropedia.org)

3 Terms, definitions and abbreviated terms

~~3~~3.1 Terms and definitions

For the purposes of this ~~part of IEC 61000~~document, the ~~following~~terms and definitions~~, together with those~~given in IEC 60050-161 and the following apply.