



BSI Standards Publication

## Electromagnetic compatibility (EMC)

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

## National foreword

This British Standard is the UK implementation of EN IEC 61000-4-3:2020. It is identical to IEC 61000-4-3:2020. It supersedes BS EN 61000-4-3:2006+A2:2010, which will be withdrawn on 13 October 2023.

The UK participation in its preparation was entrusted to Technical Committee GEL/210/11, EMC - Standards Committee.

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English Version

**Electromagnetic compatibility (EMC) - Part 4-3 : Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test (IEC 61000-4-3:2020)**

Compatibilité électromagnétique (CEM) - Partie 4-3 :  
Techniques d'essai et de mesure - Essai d'immunité aux  
champs électromagnétiques rayonnés aux fréquences  
radioélectriques  
(IEC 61000-4-3:2020)

Elektromagnetische Verträglichkeit (EMV) - Teil 4-3: Prüf-  
und Messverfahren - Prüfung der Störfestigkeit gegen  
hochfrequente elektromagnetische Felder  
(IEC 61000-4-3:2020)

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## European foreword

The text of document 77B/830/FDIS, future edition 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 approved by CENELEC as EN IEC 61000-4-3:2020.

The following dates are fixed:

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- latest date by which the national standards conflicting with the (dow) 2023-10-13 document have to be withdrawn

This document supersedes EN 61000-4-3:2006 and all of its amendments and corrigenda (if any).

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## Endorsement notice

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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                  |

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**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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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

IEC 61000 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 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**

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 document 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 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.

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 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 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.

This document is an independent test method. It is not possible to use other test methods as substitutes for claiming compliance with this document.

#### **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.

IEC 60050-161, *International Electrotechnical Vocabulary (IEV) – Part 161: Electromagnetic compatibility* (available at [www.electropedia.org](http://www.electropedia.org))

#### **3 Terms, definitions and abbreviated terms**

##### **3.1 Terms and definitions**

For the purposes of this document, the terms and definitions given in IEC 60050-161 and the following apply.