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BSI Standards Publication

Electromagnetic compatibility (EMC)

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

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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 It supersedes BS EN 61000-4-3:2006+A2:2010, which will be withdrawn on 13 October 2023.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.

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

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

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EUROPÄISCHE NORM

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

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)

This European Standard was approved by CENELEC on 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.

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

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

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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-10-13

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

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

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

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(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.

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

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CONTENTS

FOREWORD	6
INTRODUCTION	8
1 Scope	9
2 Normative references	9
3 Terms, definitions and abbreviated terms	9
3.1 Terms and definitions	9
3.2 Abbreviated terms	13
4 General	14
5 Test levels and frequency ranges	14
5.1 Selection of test level	14
5.2 Test frequency ranges	16
6 Test equipment	17
6.1 Test instrumentation	17
6.2 Description of the test facility	17
6.3 Uniform field area (UFA)	18
6.3.1 Characteristics of the UFA	18
6.3.2 Constant field strength level setting method	23
6.3.3 Constant power level setting method	24
7 Test setup	25
7.1 General	25
7.2 Arrangement of table-top equipment	26
7.3 Arrangement of floor-standing equipment	28
7.4 Arrangement of wiring	29
7.5 Arrangement of human body-mounted equipment	30
8 Test procedure	30
8.1 General	30
8.2 Laboratory reference conditions	30
8.2.1 General	30
8.2.2 Climatic conditions	30
8.2.3 Electromagnetic conditions	30
8.3 Execution of the test	30
8.4 Step sizes	32
9 Evaluation of test results	32
10 Test report	32
Annex A (informative) Rationale for the choice of modulation for tests related to the protection against RF emissions from digital radio services	34
A.1 Summary of available modulation methods	34
A.2 Experimental results	35
A.3 Secondary modulation effects	38
A.4 Conclusion	38
Annex B (informative) Field generating antennas	39
B.1 Biconical antenna	39
B.2 Log-periodic antenna	39
B.3 Combination antennas	39
B.4 Horn antenna and double ridge wave guide antenna	39

This is a preview of "BS EN IEC 61000-4-3:2020". [Click here to purchase the full version from the ANSI store.](#)

Annex C (informative) Use of anechoic chambers	40
C.1 General anechoic chamber information	40
C.2 Use of ferrite-lined chambers at frequencies above 1 GHz	40
C.2.1 Problems caused by the use of ferrite-lined chambers for radiated field immunity tests at frequencies above 1 GHz	40
C.2.2 Solutions to reduce reflections	41
Annex D (informative) Amplifier compression and non-linearity	42
D.1 Objective of limiting amplifier distortion	42
D.2 Possible problems caused by harmonics and saturation	42
D.3 Limiting the harmonic content in the field	42
D.4 Effect of linearity characteristic on the immunity test	43
D.4.1 General	43
D.4.2 Evaluation method of the linearity characteristic	43
Annex E (informative) Guidance for product committees on the selection of test levels	47
E.1 General	47
E.2 Test levels related to general purposes	47
E.3 Test levels related to the protection against RF emissions from digital radio telephones	48
E.4 Special measures for fixed transmitters	49
Annex F (informative) Selection of test methods	50
Annex G (informative) Cable layout details	52
G.1 Intentions of EUT setup for radiated immunity test	52
G.2 Cable in the field	52
G.3 Cables leaving the test area	52
G.4 Turning the EUT cabinets	52
Annex H (informative) Examples of test setups for large and heavy EUTs	54
H.1 EUTs with bottom fed cables	54
H.2 EUTs with overhead cables	55
H.3 EUTs with multiple cables and AEs	56
H.4 Large EUTs with side fed cables and multiple UFA windows	57
Annex I (informative) Testing with multiple signals	58
I.1 General	58
I.2 Intermodulation	58
I.3 Power requirements	59
I.4 Level setting requirements	60
I.5 Linearity and harmonics checks	60
I.6 EUT performance criteria with multiple signals	60
Annex J (informative) Measurement uncertainty due to test instrumentation	61
J.1 General	61
J.2 Uncertainty budgets for level setting	61
J.2.1 Definition of the measurand	61
J.2.2 MU contributors of the measurand	61
J.2.3 Calculation examples for expanded uncertainty	62
J.2.4 Explanation of terms	63
J.3 Application	64
J.4 Reference documents	64
Annex K (informative) Calibration method for E-field probes	65
K.1 Overview	65

This is a preview of "BS EN IEC 61000-4-3:2020". [Click here to purchase the full version from the ANSI store.](#)

K.2	Probe calibration requirements	65
K.2.1	General	65
K.2.2	Calibration frequency range	65
K.2.3	Frequency steps	65
K.2.4	Field strength	66
K.3	Requirements for calibration instrumentation	66
K.3.1	General	66
K.3.2	Harmonics and spurious signals	66
K.3.3	Linearity check for probe	67
K.3.4	Determination of the gain of the standard horn antennas	68
K.4	Field probe calibration in anechoic chambers	69
K.4.1	Calibration environments	69
K.4.2	Validation of anechoic chambers for field probe calibration	69
K.4.3	Probe calibration procedure	75
K.5	Other probe calibration environments and methods	77
K.5.1	General	77
K.5.2	Field probe calibration using TEM cells	77
K.5.3	Field probe calibration using waveguide chambers	78
K.5.4	Field probe calibration using open-ended waveguides	79
K.5.5	Calibration of field probes by gain transfer method	79
K.6	Reference documents	79
	Bibliography	81
	Figure 1 – Definition of the 80 % amplitude modulated (AM) test signal and the waveshapes occurring	16
	Figure 2 – Example of suitable test facility	18
	Figure 3 – Level setting setup	19
	Figure 4 – Dimensions of sixteen-point uniform field area	20
	Figure 5 – Minimum UFA size having a fifth grid point in the centre	21
	Figure 6 – Measuring setup	23
	Figure 7 – Example of EUT setup and cable layout for table top EUT having a cable that leaves the test setup	26
	Figure 8 – Example of EUT setup (top view)	28
	Figure C.1 – Multiple reflections in an existing small anechoic chamber	41
	Figure C.2 – Most of the reflected waves are eliminated (applies for top and side view)	41
	Figure D.1 – Amplifier linearity measurement setup	44
	Figure D.2 – Example of linearity curve	45
	Figure D.3 – Example of gain deviation	45
	Figure H.1 – Example of a test setup for EUT with bottom fed underground cables (CMADs not shown)	54
	Figure H.2 – Example of a test setup for EUTs with overhead cables	55
	Figure H.3 – Example of a setup of EUTs with multiple cables and AEs	56
	Figure H.4 – Large EUTs with side fed cables and multiple UFAs	57
	Figure I.1 – Test frequencies f_1 and f_2 and intermodulation frequencies of the second and third order	58
	Figure J.1 – Example of influences upon level setting	62
	Figure K.1 – Example of linearity for probe	68

This is a preview of "BS EN IEC 61000-4-3:....". [Click here to purchase the full version from the ANSI store.](#)

Figure K.2 – Setup for measuring net power to a transmitting device	70
Figure K.3 – Test setup for chamber validation test.....	72
Figure K.4 – Detail for measurement position ΔL	72
Figure K.5 – Example of data adjustment.....	73
Figure K.6 – Example of the test layout for antenna and probe	74
Figure K.7 – Test setup for chamber validation test.....	74
Figure K.8 – Example of alternative chamber validation data	75
Figure K.9 – Field probe calibration layout.....	76
Figure K.10 – Field probe calibration layout (top view).....	76
Figure K.11 – Cross-sectional view of a waveguide chamber	78
Table 1 – Test levels.....	15
Table 2 – Amplitude modulation characteristics at output of signal generator.....	15
Table 3 – Requirements for uniform field area for application of full illumination and partial illumination.....	22
Table A.1 – Comparison of modulation methods	35
Table A.2 – Relative interference levels	36
Table A.3 – Relative immunity levels.....	37
Table E.1 – Examples of test levels, associated protection distances and performance criteria	48
Table J.1 – Level setting process	62
Table J.2 – Test process.....	63
Table K.1 – Calibration field strength level.....	66
Table K.2 – Example for the probe linearity check.....	67

This is a preview of "BS EN IEC 61000-4-3:....". [Click here to purchase the full version from the ANSI store.](#)

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.

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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.

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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.

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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)

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.