BSI Standards Publication

Electromagnetic compatibility (EMC)

Part 6-3: Generic standards — Emission standard for equipment in residential environments

bsi.

AVA Documents
Document Sharing Hub

Full document details: BS EN IEC 61000-6-3:2021

National foreword

This British Standard is the UK implementation of EN IEC 61000-6-3:2021. It is identical to IEC 61000-6-3:2020. It supersedes BS EN 61000-6-3:2007+A1:2011, which will be withdrawn on 26 March 2024.

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.

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2021
Published by BSI Standards Limited 2021

ISBN 978 0 580 84577 2

ICS 33.100.10

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 March 2021.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: BS EN IEC 61000-6-3:2021

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61000-6-3

March 2021

ICS 33.100.10

Supersedes EN 61000-6-3:2007 and all of its amendments and corrigenda (if any)

English Version

Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for equipment in residential environments (IEC 61000-6-3:2020)

Compatibilité électromagnétique (CEM) - Partie 6-3: Normes génériques - Norme sur l'émission relative aux appareils utilisés dans les environnements résidentiels (IEC 61000-6-3:2020)

Elektromagnetische Verträglichkeit (EMV) - Teil 6-3: Fachgrundnormen - Störaussendung für Wohnbereich, Geschäfts- und Gewerbebereiche sowie Kleinbetriebe (IEC 61000-6-3:2020)

This European Standard was approved by CENELEC on 2020-09-03. 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 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 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

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

© 2021 CENELEC All rights of exploitation in any form and by any means reserved worldwide for CENELEC Members.

Ref. No. EN IEC 61000-6-3:2021 E

Documents
Document Sharing Hub

Full document details: BS EN IEC 61000-6-3:2021

European foreword

The text of document CIS/H/400/CDV, future edition 3 of IEC 61000-6-3, prepared by CISPR SC H "Limits for the protection of radio services" of CISPR "International special committee on radio interference" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61000-6-3:2021.

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) 2021-09-26
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-03-26

This document supersedes EN 61000-6-3:2007 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.

Endorsement notice

The text of the International Standard IEC 61000-6-3:2020 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 61000-6-1	NOTE Harmonized as EN IEC 61000-6-1
IEC 61000-6-2:2016	NOTE Harmonized as EN IEC 61000-6-2:2019 (not modified).
IEC 61000-6-4	NOTE Harmonized as EN IEC 61000-6-4.
IEC 61000-6-8	NOTE Harmonized as EN IEC 61000-6-8.
IEC 61158-1:2019	NOTE Harmonized as EN IEC 61158-1:2019 (not modified).
CISPR 11:2015	NOTE Harmonized as EN 55011:2016 (modified).
CISPR 14-2	NOTE Harmonized as EN 55014-2.
CISPR 35	NOTE Harmonized as EN 55035.

AVA Documents
Document Sharing Hub

Full document details: BS EN IEC 61000-6-3:2021

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 61000-3-2	2018	Electromagnetic compatibility (EMC) - Part 3–2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)	EN IEC 61000-3-2	2019
IEC 61000-3-3	2013	Electromagnetic compatibility (EMC) - Part 3–3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤16 A per phase and not subject to conditional connection	EN 61000-3-3	2013
+ A1	2017		+ A1	2019
IEC 61000-3-11	2017	Electromagnetic compatibility (EMC) - Part 3–11: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems - Equipment with rated current ≤ 75 A and subject to conditional connection	EN IEC 61000-3-11	2019
IEC 61000-3-12	2011	Electromagnetic compatibility (EMC) - Part 3–12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≤ 75 A per phase	EN 61000-3-12	2011
IEC 61000-4-20	2010	Electromagnetic compatibility (EMC) - Part 4–20: Testing and measurement techniques - Emission and immunity testing in transverse electromagnetic (TEM) waveguides	EN 61000-4-20	2010

AVA Documents
Document Sharing Hub

Full document details: BS EN IEC 61000-6-3:2021

CISPR 14-1	2016	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission	EN 55014-1	2017
-	-		+ A11	2020
CISPR 16-1-1	2019	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1–1: Radio disturbance and immunity measuring apparatus - Measuring apparatus	EN IEC 55016-1-1	2019
CISPR 16-1-2	2014	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1–2: Radio disturbance and immunity measuring apparatus - Coupling devices for conducted disturbance measurements	EN 55016-1-2	2014
+ A1	2017		+ A1	2018
CISPR 16-1-4	2019	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1–4: Radio disturbance and immunity measuring apparatus - Antennas and test sites for radiated disturbance measurements	EN IEC 55016-1-4	2019
CISPR 16-1-5	2014	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1–5: Radio disturbance and immunity measuring apparatus - Antenna calibration sites and reference test sites for 5 MHz to 18 GHz	EN 55016-1-5	2015
+ A1	2016		+ A1	2017
CISPR 16-1-6	2014	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1–6: Radio disturbance and immunity measuring apparatus - EMC antenna calibration	EN 55016-1-6	2015
+ A1	-		+ A1	-
CISPR 16-2-1	2014	Specification for radio disturbance and immunity measuring apparatus and methods - Part 2–1: Methods of measurement of disturbances and immunity - Conducted disturbance measurements	EN 55016-2-1	2014
+ A1	2017		+ A1	2017
CISPR 16-2-3	2016	Specification for radio disturbance and immunity measuring apparatus and methods - Part 2–3: Methods of measurement of disturbances and immunity - Radiated disturbance measurements	EN 55016-2-3	2017

AVA Documents
Document Sharing Hub

CISPR 16-4-2	2011	Specification for radio disturbance and immunity measuring apparatus and methods - Part 4–2: Uncertainties, statistics and limit modelling - Measurement instrumentation uncertainty	EN 55016-4-2	2011
+ A1	2014		+ A1	2014
+ A2	2018		+ A2	2018
CISPR 32	2015	Electromagnetic compatibility of multimedia equipment - Emission requirements	EN 55032	2015
-	-		+ A11	2020

Documents
Document Sharing Hub

This page deliberately left blank

Documents
Document Sharing Hub

Full document details: BS EN IEC 61000-6-3:2021

CONTENTS

FOREWORD 3
INTRODUCTION 5
1 Scope 6
2 Normative references 6
3 Terms, definitions and abbreviated terms 8
3.1 Terms and definitions 8
3.2 Abbreviated terms 10
4 Classification of equipment 11
5 Measurements and conditions during testing 11
6 Documentation for the user 12
7 Applicability 12
8 Requirements 13
9 Measurement uncertainty 13
10 Compliance with this document 13
11 Emission test details 13
Annex A (informative) Classification of equipment and mapping to the immunity standards 19
Annex B (normative) Testing of DC powered systems 20
Annex C (informative) Rationale for alternative test levels at the DC power port 22
C.1 General 22
C.2 Necessity of alternative test methods in generic standards 22
C.3 Limit justification in table clause 5.2 22
C.3.1 Proportional relation approach 22
C.3.2 Current-to-voltage conversion approach 23
C.3.3 Setting the final limit 24
Bibliography 25

Figure 1 – Example of ports 8
Figure C.1 – Equivalent circuit of test set up for measurement of disturbance voltages 23

Table 1 – Test arrangements of EUT 12
Table 2 – Required highest frequency for radiated measurement 14
Table 3 – Requirements for radiated emissions, enclosure port 15
Table 4 – Requirements for conducted emissions, low voltage AC mains port 16
Table 5 – Requirements for conducted emissions, DC power port 17
Table 6 – Requirements for conducted emissions, other wired ports 18
Table A.1 – Examples of emission and immunity requirements against product type and intended use 19
Table B.1 – Conducted emission requirements of DC powered equipment 20
Table B.2 – Conditional requirements for the start frequency of test at DC power ports for tests defined in table clause B1.4 to B1.7 21
Table C.1 – DC power port, terminal disturbance voltage limits for class B GCPCs, measured on a test site, proportion relation approach 23
Table C.2 – DC power port, terminal disturbance voltage limits for class B GCPCs, measured on a test site, current-to-voltage conversion approach 24

AVA Documents
Document Sharing Hub
Full document details: BS EN IEC 61000-6-3:2021

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 6-3: Generic standards – Emission standard for equipment in residential environments

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.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
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 61000-6-3 has been prepared by CISPR subcommittee H: Limits for the protection of radio services.

This third edition cancels and replaces the second edition published in 2006 and its Amendment 1:2010. This edition constitutes a technical revision.

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

a) alternative method for measuring conducted emissions on DC ports;
b) limits and requirements applicable only to equipment intended to be used in residential locations;
c) more stringent limits for DC power ports.

Documents
Document Sharing Hub

Full document details: BS EN IEC 61000-6-3:2021

The text of this document is based on the following documents:

CDV	Report on voting
CIS/H/400/CDV	CIS/H/413/RVC

Full information on the voting for the approval of this document 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.

Documents
Document Sharing Hub

Full document details: BS EN IEC 61000-6-3:2021