



**NSAI**  
Standards

Irish Standard  
I.S. EN 61000-4-31:2017

# Electromagnetic compatibility (EMC) - Part 4-31: Testing and measurement techniques - AC mains ports broadband conducted disturbance immunity test

**I.S. EN 61000-4-31:2017**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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*This document is based on:*

EN 61000-4-31:2017

*Published:*

2017-02-24

*This document was published under the authority of the NSAI and comes into effect on:*

2017-03-14

ICS number:

NOTE: If blank see CEN/CENELEC cover page

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## National Foreword

I.S. EN 61000-4-31:2017 is the adopted Irish version of the European Document EN 61000-4-31:2017, Electromagnetic compatibility (EMC) - Part 4-31: Testing and measurement techniques - AC mains ports broadband conducted disturbance immunity test

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EUROPEAN STANDARD

**EN 61000-4-31**

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2017

ICS 33.100.20

English Version

**Electromagnetic compatibility (EMC) -  
Part 4-31: Testing and measurement techniques - AC mains  
ports broadband conducted disturbance immunity test  
(IEC 61000-4-31:2016)**

Compatibilité électromagnétique (CEM) -  
Partie 4-31: Techniques d'essai et de mesure - Essai  
d'immunité aux perturbations conduites à large bande sur  
les accès d'alimentation secteur en courant alternatif  
(IEC 61000-4-31:2016)

Elektromagnetische Verträglichkeit (EMV) -  
Teil 4-31: Prüf- und Messverfahren - Prüfung der  
Störfestigkeit gegen leitungsgeführte breitbandige  
Störgrößen an Wechselstrom-Netzanschlüssen  
(IEC 61000-4-31:2016)

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Comité Européen de Normalisation Electrotechnique  
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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## **EN 61000-4-31:2017**

### **European foreword**

The text of document 77B/758/FDIS, future edition 1 of IEC 61000-4-31, 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 61000-4-31:2017.

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) 2017-08-24
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-02-24

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In the official version, for Bibliography, the following note has to be added for the standard indicated:

CISPR 16-1-2      NOTE      Harmonized as EN 55016-1-2.

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When 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](http://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 (IEV) - Chapter 161: Electromagnetic compatibility	-	-
IEC 61000-4-6	2013	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	2014

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**IEC 61000-4-31**

Edition 1.0 2016-07

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**



**BASIC EMC PUBLICATION**  
**PUBLICATION FONDAMENTALE EN CEM**

**Electromagnetic compatibility (EMC) –  
Part 4-31: Testing and measurement techniques – AC mains ports broadband  
conducted disturbance immunity test**

**Compatibilité électromagnétique (CEM) –  
Partie 4-31: Techniques d'essai et de mesure – Essai d'immunité aux  
perturbations conduites à large bande sur les accès d'alimentation secteur en  
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**IEC 61000-4-31**

Edition 1.0 2016-07

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**



BASIC EMC PUBLICATION  
PUBLICATION FONDAMENTALE EN CEM

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**Electromagnetic compatibility (EMC) –  
Part 4-31: Testing and measurement techniques – AC mains ports broadband  
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perturbations conduites à large bande sur les accès d'alimentation secteur en  
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ICS 33.100.20

ISBN 978-2-8322-3564-5

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTROMAGNETIC COMPATIBILITY (EMC) –****Part 4-31: Testing and measurement techniques –  
AC mains ports broadband conducted disturbance immunity test**

## FOREWORD

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International Standard IEC 61000-4-31 has been prepared by subcommittee 77B: High-frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

This standard forms Part 4-31 of the IEC 61000 series. It has the status of a basic EMC publication in accordance with IEC Guide 107.

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

FDIS	Report on voting
77B/758/FDIS	77B/760/RVD

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

This publication 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 publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

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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 procedure related to conducted broadband disturbances.

## ELECTROMAGNETIC COMPATIBILITY (EMC) –

### Part 4-31: Testing and measurement techniques – AC mains ports broadband conducted disturbance immunity test

#### 1 Scope and object

This part of IEC 61000 relates to the conducted immunity of electrical and electronic equipment to electromagnetic disturbances coming from intended and/or unintended broadband signal sources in the frequency range 150 kHz up to 80 MHz.

The object of this standard is to establish a common reference to evaluate the immunity of electrical and electronic equipment when subjected to conducted disturbances caused by intended and/or unintended broadband signal sources on AC mains ports. The test method documented in this standard describes a consistent method to assess the immunity of an equipment or system against a defined phenomenon.

Equipment not having at least one AC mains port is excluded. The power ports not intended to be connected to AC mains distribution networks are not considered as “AC mains ports” and therefore are excluded.

This standard is applicable only to single phase equipment having rated input current  $\leq 16$  A; the application of the broadband disturbance to multiple phase equipment and/or equipment with rated input current  $> 16$  A is under consideration.

NOTE As described in IEC Guide 107, this standard 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 is to 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.

#### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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))*

IEC 61000-4-6:2013, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

#### 3 Terms and definitions

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

##### 3.1

##### **artificial hand**

electrical network simulating the impedance of the human body under average operational conditions between a hand-held electrical appliance and earth

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