



BSI Standards Publication

# Electromagnetic compatibility (EMC)

Part 4-6: Testing and measurement  
techniques — Immunity to conducted  
disturbances, induced by radio-frequency  
fields

**National foreword**

This British Standard is the UK implementation of EN 61000-4-6:2014. It is identical to IEC 61000-4-6:2013. It supersedes BS EN 61000-4-6:2009 which will be withdrawn on 27 November 2016.

The UK participation in its preparation was entrusted by Technical Committee GEL/210, EMC - Policy committee, to Subcommittee GEL/210/12, EMC basic, generic and low frequency phenomena Standardization.

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

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English version

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

Compatibilité électromagnétique (CEM) -  
 Partie 4-6: Techniques d'essai et de  
 mesure - Immunité aux perturbations  
 conduites, induites par les champs  
 radioélectriques  
 (CEI 61000-4-6:2013)

Elektromagnetische Verträglichkeit (EMV)  
 - Teil 4-6: Prüf- und Messverfahren -  
 Störfestigkeit gegen leitungsgeführte  
 Störgrößen, induziert durch hochfrequente  
 Felder  
 (IEC 61000-4-6:2013)

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 Comité Européen de Normalisation Electrotechnique  
 Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 77B/691/FDIS, future edition 4 of IEC 61000-4-6, 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 61000-4-6:2014.

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) 2014-08-27
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-11-27

This document supersedes EN 61000-4-6:2009.

EN 61000-4-6:2014 includes the following significant technical changes with respect to EN 61000-4-6:2009:

- a) use of the CDNs;
- b) calibration of the clamps;
- c) reorganization of Clause 7 on test setup and injection methods;
- d) Annex A which is now dedicated to EM and decoupling clamps;
- e) Annex G which now addresses the measurement uncertainty of the voltage test level;
- f) informative Annexes H, I and J which are new.

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

## Endorsement notice

The text of the International Standard IEC 61000-4-6:2013 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 61000-4-3	NOTE	Harmonised as EN 61000-4-3.
CISPR 16-1-2	NOTE	Harmonised as EN 55016-1-2.
CISPR 16-1-4	NOTE	Harmonised as EN 55016-1-4.
CISPR 20	NOTE	Harmonised as EN 55020.

## **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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050 (Series)	-	International Electrotechnical Vocabulary (IEV)	-	-

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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 conducted disturbances induced by radio-frequency fields.

## ELECTROMAGNETIC COMPATIBILITY (EMC) –

### Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields

#### 1 Scope

This part of IEC 61000 relates to the conducted immunity requirements of electrical and electronic equipment to electromagnetic disturbances coming from intended radio-frequency (RF) transmitters in the frequency range 150 kHz up to 80 MHz. Equipment not having at least one conducting wire and/or cable (such as mains supply, signal line or earth connection) which can couple the equipment to the disturbing RF fields is excluded from the scope of this publication.

NOTE 1 Test methods are defined in this part of IEC 61000 to assess the effect that conducted disturbing signals, induced by electromagnetic radiation, have on the equipment concerned. The simulation and measurement of these conducted disturbances are not adequately exact for the quantitative determination of effects. The test methods defined are structured for the primary objective of establishing adequate repeatability of results at various facilities for quantitative analysis of effects.

The object of this standard is to establish a common reference for evaluating the functional immunity of electrical and electronic equipment when subjected to conducted disturbances induced by RF 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.

NOTE 2 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 should be applied or not, and if applied, they are responsible for determining the appropriate test levels and performance criteria.

#### 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 (all parts), *International Electrotechnical Vocabulary (IEV)* (available at <http://www.electropedia.org>)

#### 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

Note 1 to entry: The construction should be in accordance with CISPR 16-1-2.

[SOURCE: IEC 60050-161:1990, 161-04-27]