SLOVENSKI STANDARD
SIST EN 61000-4-6:2009

01-september-2009

Elektromagnetna združljivost (EMC) - 4-6. del: Preskusne in merilne tehnike - Odpornost proti motnjam po vodnikih, ki jih inducirajo radiofrekvenčna polja (IEC 61000-4-6:2008)

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

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

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

Ta slovenski standard je istoveten z: **EN 61000-4-6:2009**

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EN 61000-4-6

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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 61000-4-6:2008)

Compatibilité électromagnétique (CEM) - Partie 4-6: Techniques d'essai et de mesure - Immunité aux perturbations conduites, induites par les champs radioélectriques (CEI 61000-4-6:2008)

Elektromagnetische Verträglichkeit (EMV) - Teil 4-6: Prüf- und Messverfahren - Störfestigkeit gegen leitungsgeführte Störgrößen, induziert durch hochfrequente Felder (IEC 61000-4-6:2008)

This European Standard was approved by CENELEC on 2009-03-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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CENELEC

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

Central Secretariat: avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 77B/571/FDIS, future edition 3 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 was approved by CENELEC as EN 61000-4-6 on 2009-03-01.

This European Standard supersedes EN 61000-4-6:2007 + corrigendum August 2007 + IS1:2009.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2009-12-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2012-03-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61000-4-6:2008 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	Harmonized as EN 61000-4-3:2006 (not modified).
CISPR 16-1-2	NOTE	Harmonized as EN 55016-1-2:2004 (not modified).
CISPR 20	NOTE	Harmonized as EN 55020:2007 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-161	-[1)]	International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility	-	-

[1)] Undated reference.

IEC 61000-4-6

Edition 3.0 2008-10

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BASIC EMC PUBLICATION

PUBLICATION FONDAMENTALE EN CEM

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

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

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROMAGNETIC COMPATIBILITY (EMC) –

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

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 61000-4-6 has been prepared by subcommittee 77B: High-frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

This standard forms part 4-6 of IEC 61000. It has the status of a basic EMC publication in accordance with IEC Guide 107, *Electromagnetic compatibility – Guide to the drafting of electromagnetic compatibility publications*.

This third edition of IEC 61000-4-6 cancels and replaces the second edition published in 2003, Amendment 1 (2004) and Amendment 2 (2006).This edition constitutes a technical revision.

The document 77B/571/FDIS, circulated to the National Committees as Amendment 3, led to the publication of the new edition.

The text of this standard is based on the second edition, its Amendment 1, Amendment 2 and on the following documents:

FDIS	Report on voting
77B/571/FDIS	77B/577/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.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the maintenance result date indicated on the IEC web site 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.

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 : 61000-6-1).

This part is an international standard which gives immunity requirements and test procedure 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 and object

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 9 kHz up to 80 MHz. Equipment not having at least one conducting cable (such as mains supply, signal line or earth connection) which can couple the equipment to the disturbing RF fields is excluded.

NOTE 1 Test methods are defined in this part for measuring 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 radio-frequency 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. 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 referenced documents are indispensable for the application 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) – Chapter 161: Electromagnetic compatibility*

3 Terms and definitions

For the purposes of this part of IEC 61000, the terms and definitions given in IEC 60050-161 as well as the following definitions 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

[IEV 161-04-27]

NOTE The construction should be in accordance with CISPR 16-1-2.

3.2
auxiliary equipment
AE
equipment necessary to provide the equipment under test (EUT) with the signals required for normal operation and equipment to verify the performance of the EUT

3.3
clamp injection
clamp injection is obtained by means of a clamp-on "current" injecting device on the cable:

– **current clamp**: a transformer, the secondary winding of which consists of the cable into which the injection is made;

– **electromagnetic clamp** (EM clamp): injection device with combined capacitive and inductive coupling

3.4
common-mode impedance
ratio of the common mode voltage and the common-mode current at a certain port

NOTE This common mode impedance can be determined by applying a unity common mode voltage between the terminal(s) or screen of that port and a reference plane (point). The resulting common mode current is then measured as the vectorial sum of all currents flowing through these terminal(s) or screen (see also Figures 8a and 8b).

3.5
coupling factor
ratio given by the open-circuit voltage (e.m.f.) obtained at the EUT port of the coupling (and decoupling) device divided by the open-circuit voltage obtained at the output of the test generator

3.6
coupling network
electrical circuit for transferring energy from one circuit to another with a defined impedance

NOTE Coupling and decoupling devices can be integrated into one box (coupling and decoupling network (CDN)) or they can be in separate networks.

3.7
coupling/decoupling network
CDN
electrical circuit incorporating the functions of both the coupling and decoupling networks

3.8
decoupling network
electrical circuit for preventing test signals applied to the EUT from affecting other devices, equipment or systems that are not under test

3.9
test generator
generator (RF generator, modulation source, attenuators, broadband power amplifier and filters) capable of generating the required test signal (see Figure 3)

3.10
electromotive force
e.m.f.
voltage at the terminals of the ideal voltage source in the representation of an active element

[IEV 131-01-38:1978]