SLOVENSKI STANDARD
SIST EN 61000-4-6:2014

01-april-2014

Nadomešča:
SIST EN 61000-4-6:2009

Elektromagnetna združljivost (EMC) - 4-6. del: Preskusne in merilne tehnike - Odpornost proti motnjam po vodnikih, ki jih inducirajo radiofrekvenčna polja (IEC 61000-4-6:2013)

Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Conducted disturbances, induced by radio-frequency fields immunity test

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

Ta slovenski standard je istoveten z: **EN 61000-4-6:2014**

ICS:

33.100.20 Imunost Immunity

SIST EN 61000-4-6:2014 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61000-4-6

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ICS 33.100.20

Supersedes EN 61000-4-6:2009

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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CENELEC

European Committee for Electrotechnical Standardization
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• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2016-11-27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.

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

IEC 61000-4-6

Edition 4.0 2013-10

INTERNATIONAL STANDARD

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colour inside

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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.

It forms Part 4-6 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 2008 and constitutes a technical revision.

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

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.

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

FDIS	Report on voting
77B/691/FDIS	77B/704/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 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.

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.

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]

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

3.4
clamp injection device
clamp-on “current” injecting device on a cable being either a current clamp or an electromagnetic clamp

3.4.1
current clamp
transformer, the secondary winding of which consists of the cable into which the injection is made

3.4.2
electromagnetic clamp
EM clamp
injection device with combined capacitive and inductive coupling

3.5
common mode impedance
ratio of the common mode voltage and the common mode current at a certain port

Note 1 to entry: 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)).

3.6
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

3.7
coupling network
electrical circuit for transferring energy from one circuit to another with a defined impedance

Note 1 to entry: Coupling and decoupling devices can be integrated into one box (coupling and decoupling network (CDN)) or they can be in separate networks.

3.8
coupling/decoupling network
CDN
electrical circuit incorporating the functions of both the coupling and decoupling networks

3.9
decoupling network
decoupling device
electrical circuit for preventing test signals applied to the EUT from affecting other devices, equipment or systems that are not under test