

**Elektromagnetiline ühilduvus. Osa 6-1: Erialased
põhistandardid. Häiringukindlus olme-, kaubandus-
ja väiketööstuskeskkondades**

Electromagnetic compatibility (EMC) Part 6-1: Generic
standards - Immunity for residential, commercial and
light-industrial environments

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 61000-6-1:2007 sisaldab Euroopa standardi EN 61000-6-1:2007 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 21.06.2004 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 12.01.2007.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 61000-6-1:2007 consists of the English text of the European standard EN 61000-6-1:2007.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 21.06.2004 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 12.01.2007.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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Võtmesõnad: elektromagnetiline ühilduvus, häiringukindlus, kaubandus, väiketööstus, ühilduvus

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Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
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English version

**Electromagnetic compatibility (EMC) -
Part 6-1: Generic standards -
Immunity for residential, commercial
and light-industrial environments
(IEC 61000-6-1:2005)**

Compatibilité électromagnétique (CEM) -
Partie 6-1: Normes génériques -
Immunité pour les environnements
résidentiels, commerciaux
et de l'industrie légère
(CEI 61000-6-1:2005)

Elektromagnetische Verträglichkeit
(EMV) -
Teil 6-1: Fachgrundnormen -
Störfestigkeit für Wohnbereich,
Geschäfts- und Gewerbebereiche
sowie Kleinbetriebe
(IEC 61000-6-1:2005)

This European Standard was approved by CENELEC on 2006-12-01. 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.

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of the International Standard IEC 61000-6-1:2005, prepared by IEC TC 77, Electromagnetic compatibility, was submitted to the formal vote and was approved by CENELEC as EN 61000-6-1 on 2006-12-01 without any modification.

This European Standard supersedes EN 61000-6-1:2001 + IS1:2005.

Specific technical changes have been introduced to Tables 1 to 4. The frequency range for tests according to EN 61000-4-3 has been extended above 1 GHz according to technologies used in this frequency area. The use of TEM waveguide testing according to EN 61000-4-20 has been introduced for certain products and the testing requirements according to EN 61000-4-11 have been amended significantly.

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) 2007-12-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2009-12-01

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directives EMC (89/336/EEC), EMC (2004/108/EC) and RTTED (1999/5/EC). See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61000-6-1:2005 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 61000-4-1 | NOTE Harmonized as EN 61000-4-1:2000 (not modified). |
| IEC 61000-4-20 | NOTE Harmonized as EN 61000-4-20:2003 (not modified). |
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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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-161	- ¹⁾	International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility	-	-
IEC 61000-4-2	- ¹⁾	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995 ²⁾
IEC 61000-4-3	- ¹⁾	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2006 ²⁾
IEC 61000-4-4	- ¹⁾	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2004 ²⁾
IEC 61000-4-5	- ¹⁾	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2006 ²⁾
IEC 61000-4-6	- ¹⁾	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	-	-
IEC 61000-4-8	- ¹⁾	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8	1993 ²⁾
IEC 61000-4-11	- ¹⁾	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	2004 ²⁾
CISPR 22 (mod)	- ¹⁾	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement	EN 55022	2006 ²⁾

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

Annex ZZ (informative)

Coverage of Essential Requirements of EC Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers the essential requirements as given in Article 4(b) of the EC Directive 89/336/EEC and Annex I Article 1(b) of the EC Directive 2004/108/EC, and the essential requirements of Article 3.1(b) (immunity only) of the EC Directive 1999/5/EC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directives concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electromagnetic compatibility (EMC) –
Part 6-1: Generic standards – Immunity for residential, commercial and
light-industrial environments**

**Compatibilité électromagnétique (CEM) –
Partie 6-1: Normes génériques – Immunité pour les environnements résidentiels,
commerciaux et de l'industrie légère**



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La Commission Electrotechnique Internationale (CEI) est la première organisation mondiale qui élabore et publie des normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

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- Just Published CEI: www.iec.ch/online_news/justpub

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- Electropedia: www.electropedia.org

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Electromagnetic compatibility (EMC) –
Part 6-1: Generic standards – Immunity for residential, commercial and
light-industrial environments**

**Compatibilité électromagnétique (CEM) –
Partie 6-1: Normes génériques – Immunité pour les environnements
résidentiels, commerciaux et de l'industrie légère**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROMAGNETIC COMPATIBILITY (EMC) –**Part 6-1: Generic standards –
Immunity for residential, commercial
and light-industrial 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.
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International Standard IEC 61000-6-1 has been prepared by IEC technical committee 77: Electromagnetic compatibility.

This second edition cancels and replaces the first edition published in 1997. It constitutes a technical revision. Specific technical changes have been introduced to Tables 1 to 4. The frequency range for tests according to IEC 61000-4-3 has been extended above 1 GHz according to technologies used in this frequency area. The use of TEM waveguide testing according to IEC 61000-4-20 has been introduced for certain products and the testing requirements according to IEC 61000-4-11 have been amended significantly.

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

FDIS	Report on voting
77/294A/FDIS	77/300/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.

The publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication 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 (insofar 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).

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 6-1: Generic standards – Immunity for residential, commercial and light-industrial environments

1 Scope and object

This part of IEC 61000 for EMC immunity requirements applies to electrical and electronic apparatus intended for use in residential, commercial and light-industrial environments. Immunity requirements in the frequency range 0 Hz to 400 GHz are covered. No tests need to be performed at frequencies where no requirements are specified.

This generic EMC immunity standard is applicable if no relevant dedicated product or product-family EMC immunity standard exists.

This standard applies to apparatus intended to be directly connected to a low-voltage public mains network or connected to a dedicated DC source which is intended to interface between the apparatus and the low-voltage public mains network. This standard applies also to apparatus which is battery operated or is powered by a non-public, but non-industrial, low-voltage power distribution system if this apparatus is intended to be used in the locations described below.

The environments encompassed by this standard are residential, commercial and light-industrial locations, both indoor and outdoor. The following list, although not comprehensive, gives an indication of locations which are included:

- residential properties, for example houses, apartments;
- retail outlets, for example shops, supermarkets;
- business premises, for example offices, banks;
- areas of public entertainment, for example cinemas, public bars, dance halls;
- outdoor locations, for example petrol stations, car parks, amusement and sports centres;
- light-industrial locations, for example workshops, laboratories, service centres.

Locations which are characterised by being supplied directly at low voltage from the public mains network are considered to be residential, commercial or light-industrial.

The object of this standard is to define the immunity test requirements for apparatus specified in the scope in relation to continuous and transient, conducted and radiated disturbances including electrostatic discharges.

The immunity requirements have been selected to ensure an adequate level of immunity for apparatus at residential, commercial and light-industrial locations. The levels do not, however, cover extreme cases, which may occur at any location, but with an extremely low probability of occurrence. Not all disturbance phenomena have been included for testing purposes in this standard but only those considered as relevant for the equipment covered by this standard. These test requirements represent essential electromagnetic compatibility immunity requirements.

NOTE 1 Information on other disturbance phenomena is given in IEC 61000-4-1.

Test requirements are specified for each port considered.

NOTE 2 Safety considerations are not covered by this standard.

NOTE 3 In special cases, situations will arise where the levels of disturbances may exceed the test levels specified in this standard; for example where a hand-held transmitter is used in proximity to an apparatus. In these instances, special mitigation measures may have to be employed.

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*

IEC 61000-4-2, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test*

IEC 61000-4-3, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 3: Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test*

IEC 61000-4-5, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 5: Surge immunity test*

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

IEC 61000-4-8, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 8: Power frequency magnetic field immunity test*

IEC 61000-4-11, *Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests*

CISPR 22, *Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement*