
Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments (IEC 61000-6-1:1997)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 61000-6-1:2002](https://standards.iteh.ai/catalog/standards/sist/ae6a72d0-f5c0-4f8d-bf10-fd9a4560a6aa/sist-en-61000-6-1-2002)

<https://standards.iteh.ai/catalog/standards/sist/ae6a72d0-f5c0-4f8d-bf10-fd9a4560a6aa/sist-en-61000-6-1-2002>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61000-6-1:2002

<https://standards.iteh.ai/catalog/standards/sist/ae6a72d0-f5c0-4f8d-bf10-fd9a4560a6aa/sist-en-61000-6-1-2002>

EUROPEAN STANDARD

EN 61000-6-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2001

ICS 33.100

Supersedes EN 50082-1:1997

English version

**Electromagnetic compatibility (EMC)
Part 6-1: Generic standards -
Immunity for residential, commercial and
light-industrial environments
(IEC 61000-6-1:1997, modified)**

Compatibilité électromagnétique (CEM)
Partie 6-1: Normes génériques -
Immunité pour les environnements
résidentiels, commerciaux et de
l'industrie légère
(CEI 61000-6-1:1997, modifiée)

Elektromagnetische Verträglichkeit (EMV)
Teil 6-1: Fachgrundnormen -
Störfestigkeit -
Wohnbereich, Geschäfts- und
Gewerbebereiche sowie Kleinbetriebe
(IEC 61000-6-1:1997, modifiziert)

STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61000-6-1:2002

<https://standards.iteh.ai/catalog/standards/sist/aefa72d0-f5c0-4f8d-bf10-fd9a4560a6aa/sist-en-61000-6-1-2002>

This European Standard was approved by CENELEC on 2001-07-03. 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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 61000-6-1:1997, prepared by IEC TC 77, Electromagnetic compatibility, together with the common modifications prepared by the Technical Committee CENELEC TC 210, Electromagnetic compatibility (EMC), was submitted to the formal vote and was approved by CENELEC as EN 61000-6-1 on 2001-07-03.

This European Standard supersedes EN 50082-1:1997.

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) 2002-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2004-07-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 61000-6-1:2002](https://standards.iteh.ai/catalog/standards/sist/ae7a72d0-f5c0-4f8d-bf10-fd9a4560a6aa/sist-en-61000-6-1-2002)

<https://standards.iteh.ai/catalog/standards/sist/ae7a72d0-f5c0-4f8d-bf10-fd9a4560a6aa/sist-en-61000-6-1-2002>

Endorsement notice

The text of the International Standard IEC 61000-6-1:1997 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

2 Normative references

Replace the text of clause 2 by:

NOTE Normative references to international publications are listed in annex ZA (normative).

Make the normative references **undated**.

Delete ENV 50204:1995 and the relevant note.

3 Definitions

3.5 Replace by:

3.5

functional earth port

cable port other than signal, control or power port, intended for connection to earth for purposes other than electrical safety

Table 1 Immunity – Enclosure port

Delete row 1.3.

Renumber row 1.4 as 1.3.

Delete notes 3 and 4 and the corresponding reference to note 3 in row 1.2, sixth column.

<https://standards.iteh.ai/catalog/standards/sist/aefa72d0-f5c0-4f8d-bf10-f19a4560a6aa/sist-en-61000-6-1-2002>

Table 2 Immunity – Ports for signal lines and control lines

Delete note 3 and the corresponding reference to note 3 in row 2.1, sixth column.

Table 3 Immunity – DC input and d.c. output power ports

Delete note 3 and the corresponding reference to note 3 in row 3.1, sixth column.

Renumber note 4 as note 3.

Renumber the references to note 4 as note 3 in rows 3.2 and 3.3, sixth column.

Table 4 Immunity – Input and output a.c. power ports

Delete note 3 and the corresponding reference in row 4.1, sixth column.

Table 5 Immunity – Functional earth ports

In row 5.2 **add** "Capacitive clamp used" in the column Remarks.

Delete note 3 and the corresponding reference in row 5.1 sixth column.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter.

When there is an undated reference to a generic, product or product-family standard which has been listed in the OJEC, then either the latest edition or (if the date of cessation of presumption of conformity associated with the latest edition has not expired) the superseded edition may be applied. After the date of cessation of presumption of conformity, the latest edition shall be applied.

When there is an undated reference to a basic standard, then either the latest edition or (if the date of withdrawal of conflicting standards associated with the latest edition has not expired) the superseded edition may be applied. After the date of withdrawal, the latest edition shall be applied.

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

NORME
INTERNATIONALE

CEI
IEC

INTERNATIONAL
STANDARD

61000-6-1

Première édition
First edition
1997-07

Compatibilité électromagnétique (CEM) –

Partie 6:

Normes génériques –

**Section 1: Immunité pour les environnements
résidentiels, commerciaux et
de l'industrie légère**

Electromagnetic compatibility (EMC) –

Part 6:

Generic standards –

**Section 1: Immunity for residential, commercial
and light-industrial environments**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

© IEC 1997 Droits de reproduction réservés — Copyright - all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur. SIST EN 61000-6-1:2002
<https://standards.iteh.ai/catalog/standards/sist/en-61000-6-1/2002>
No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission
Telefax: +41 22 919 0300

e-mail: inmail@iec.ch

3, rue de Varembé Geneva, Switzerland
IEC web site <http://www.iec.ch>



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

N

Pour prix, voir catalogue en vigueur
For price, see current catalogue

CONTENTS

	Page
FOREWORD	5
INTRODUCTION	7
 Clause	
1 Scope and object	9
2 Normative references	11
3 Definitions	13
4 Description of locations	13
5 Performance criteria	15
6 Conditions during testing	15
7 Product documentation	17
8 Applicability	17
9 Immunity test requirements	17
 Tables	
1 Immunity – Enclosure port	19
2 Immunity – Ports for signal lines and control lines	21
3 Immunity – DC input and d.c. output power ports	23
4 Immunity – Input and output a.c. power ports	25
5 Immunity – Functional earth ports	27

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 61000-6-1:2002](https://standards.iteh.ai/catalog/standards/sist/aefa72d0-f5c0-4f8d-bf10-fd9a4560a6aa/sist-en-61000-6-1-2002)

<https://standards.iteh.ai/catalog/standards/sist/aefa72d0-f5c0-4f8d-bf10-fd9a4560a6aa/sist-en-61000-6-1-2002>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROMAGNETIC COMPATIBILITY (EMC) –

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

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61000-6-1 has been prepared by IEC technical committee 77: Electromagnetic compatibility.

It takes into account the draft European Standard prEN 50082-1, October 1996, drawn up by CENELEC technical committee 210: EMC.

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

FDIS	Report on voting
77/181/FDIS	77/189/RVD

[SIST EN 61000-6-1:2002](https://standards.iteh.ai/catalog/standards/sist/aef72d0-5c0-4f8d-bf10-4d24560a6aa/sist-cir-61000-6-1-2002)

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

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 sections which can be published either as International Standards or technical reports.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 61000-6-1:2002](https://standards.iteh.ai/catalog/standards/sist/aefa72d0-f5c0-4f8d-bf10-fd9a4560a6aa/sist-en-61000-6-1-2002)

<https://standards.iteh.ai/catalog/standards/sist/aefa72d0-f5c0-4f8d-bf10-fd9a4560a6aa/sist-en-61000-6-1-2002>

ELECTROMAGNETIC COMPATIBILITY (EMC) –

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

1 Scope and object

This section of IEC 61000-6 for EMC immunity requirements applies to electrical and electronic apparatus intended for use in residential, commercial and light-industrial environments, as described in clause 4, for which no dedicated product or product-family immunity standard exists.

Immunity requirements in the frequency range 0 Hz to 400 GHz are covered.

Where a relevant dedicated product or product-family EMC immunity standard exists, it shall take precedence over all aspects of this generic standard.

This standard applies to apparatus intended to be directly connected to a low-voltage public mains network or connected to a dedicated d.c. 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 in clause 4.

Apparatus intended to be connected to an industrial power network and apparatus intended to be operated in an industrial environment are covered by the industrial generic standard, IEC 61000-6-2.

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

These test requirements represent essential electromagnetic compatibility immunity requirements.

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.

<https://standards.iteh.ai/catalog/standards/sist/aefa72d0-f5c0-4f8d-bf10->

Test requirements are specified for each port considered.

NOTE – 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.