

SLOVENSKI STANDARD
SIST EN 61000-4-2:1997/A2:2002
01-maj-2002

Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test – Basic publication; Amendment 2 (IEC 61000-4-2:1995/A2:2000)

Electromagnetic compatibility (EMC) -- Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test

Elektromagnetische Verträglichkeit (EMV) -- Teil 4-2: Prüf- und Meßverfahren - Störfestigkeit gegen die Entladung statischer Elektrizität

Compatibilité électromagnétique (CEM) -- Partie 4-2: Techniques d'essai et de mesure - Essai d'immunité aux décharges électrostatiques

Ta slovenski standard je istoveten z: EN 61000-4-2:1995/A2:2001

ICS:

33.100.20 Imunost Immunity

SIST EN 61000-4-2:1997/A2:2002 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61000-4-2:1997/A2:2002

<https://standards.iteh.ai/catalog/standards/sist/b9597e03-487f-4c9d-8a18-1cb30fcdc21/sist-en-61000-4-2-1997-a2-2002>

EUROPEAN STANDARD

EN 61000-4-2/A2

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2001

ICS 33.100.20

English version

**Electromagnetic compatibility (EMC)
Part 4-2: Testing and measurement techniques -
Electrostatic discharge immunity test
(IEC 61000-4-2:1995/A2:2000)**

Compatibilité électromagnétique (CEM)
Partie 4-2: Techniques d'essai
et de mesure -
Essais d'immunité aux décharges
électrostatiques
(CEI 61000-4-2:1995/A2:2000)

Elektromagnetische Verträglichkeit (EMV)
Teil 4-2: Prüf- und Meßverfahren -
Störfestigkeit gegen die Entladung
statischer Elektrizität
(IEC 61000-4-2:1995/A2:2000)

iteh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 61000-4-2:1997/A2:2002](https://standards.iteh.ai/catalog/standards/sist/b9597e03-487f-4c9d-8a18-1cb30fcdc21/sist-en-61000-4-2-1997-a2-2002)

<https://standards.iteh.ai/catalog/standards/sist/b9597e03-487f-4c9d-8a18-1cb30fcdc21/sist-en-61000-4-2-1997-a2-2002>

This amendment A2 modifies the European Standard EN 61000-4-2:1995; it was approved by CENELEC on 2000-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, 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 documents 77B/291+292/FDIS, future amendment 2 to IEC 61000-4-2:1995, 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 amendment A2 to EN 61000-4-2:1995 on 2000-12-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2001-09-01
- latest date by which the national standards conflicting
with the amendment have to be withdrawn (dow) 2003-12-01

Endorsement notice

The text of amendment 2:2000 to the International Standard IEC 61000-4-2:1995 was approved by CENELEC as an amendment to the European Standard without any modification.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 61000-4-2:1997/A2:2002](https://standards.iteh.ai/catalog/standards/sist/b9597e03-487f-4c9d-8a18-1cb30fcdc21/sist-en-61000-4-2-1997-a2-2002)

<https://standards.iteh.ai/catalog/standards/sist/b9597e03-487f-4c9d-8a18-1cb30fcdc21/sist-en-61000-4-2-1997-a2-2002>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61000-4-2:1997/A2:2002

<https://standards.iteh.ai/catalog/standards/sist/b9597e03-487f-4c9d-8a18-1cb30fcdc21/sist-en-61000-4-2-1997-a2-2002>

**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC**

61000-4-2

1995

AMENDEMENT 2
AMENDMENT 2
2000-11

PUBLICATION FONDAMENTALE EN CEM
BASIC EMC PUBLICATION

Amendement 2

Compatibilité électromagnétique (CEM) –

Partie 4-2:

Techniques d'essai et de mesure –

Essai d'immunité aux décharges électrostatiques

(standards.iteh.ai)

Amendment 2 <https://standards.iteh.ai/catalog/standards/sist/b9597e03-487f-4c9d-8a18-1cb30f6dcf21/sist-en-61000-4-2-1997-a2-2002>

<https://standards.iteh.ai/catalog/standards/sist/b9597e03-487f-4c9d-8a18-1cb30f6dcf21/sist-en-61000-4-2-1997-a2-2002>

Electromagnetic compatibility (EMC) –

Part 4-2:

Testing and measurement techniques –

Electrostatic discharge immunity test

© IEC 2000 Droits de reproduction réservés — Copyright - all rights reserved

International Electrotechnical Commission
Telefax: +41 22 919 0300

3, rue de Varembe Geneva, Switzerland
e-mail: inmail@iec.ch IEC web site <http://www.iec.ch>



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

G

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

FOREWORD

This amendment has been prepared by subcommittee 77B: High frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

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

FDIS	Reports on voting
77B/291+292/FDIS	77B/298+299/RVD

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

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2002. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

iTeh STANDARD PREVIEW (standards.iteh.ai)

Page 25

Add, after subclause 7.1.2, the following new subclause:

<https://standards.iteh.ai/catalog/standards/sist/b9597e03-487f-4c9d-8a18-1c6910002173/sist-en-61000-4-2-1997-a2-2002>

7.1.3 Test method for ungrounded equipment

The test method described in this subclause is applicable to equipment or part(s) of equipment whose installation specifications or design preclude connection to any grounding system. Equipment, or parts thereof, includes portable, battery-operated and double-insulated equipment (class II equipment).

Rationale: Ungrounded equipment, or ungrounded part(s) of equipment, cannot discharge itself similarly to class I mains-supplied equipment. If the charge is not removed before the next ESD pulse is applied, it is possible that the EUT or part(s) of the EUT be stressed up to twice the intended test voltage. Therefore, double-insulated equipment could be charged at an unrealistically high charge, by accumulating several ESD discharges on the capacitance of the class II insulation, and then discharge at the breakdown voltage of the insulation with a much higher energy.

The general test set-up shall be identical to the ones described in 7.1.1 and 7.1.2 respectively.

To simulate a single ESD event (either by air or by contact discharge), the charge on the EUT shall be removed prior to each applied ESD pulse.

The charge on the metallic point or part to which the ESD pulse is to be applied, for example, connector shells, battery charge pins, metallic antennae, shall be removed prior to each applied ESD test pulse.

When one or several metallic accessible parts are subject to the ESD test, the charge shall be removed from the point where the ESD pulse is to be applied, as no guarantee can be given about the resistance between this and other accessible points on the product.

A cable with 470 k Ω bleeder resistors, similar to the one used with the horizontal and vertical coupling planes, shall be used; see 7.1.

As the capacitance between EUT and HCP (table-top) and between EUT and GRP (floor-standing) is determined by the size of the EUT, the cable with bleeder resistors may remain installed during the ESD test when functionally allowed. In the discharge cable, one resistor shall be connected as close as possible, preferably less than 20 mm from the EUT test point. The second resistor shall be connected near the end of the cable attached to the HCP for table-top equipment (see figure 8), or GRP for floor-standing equipment (see figure 9).

The presence of the cable with the bleeder resistors can influence the test results of some equipment. In case of dispute, a test with the cable disconnected during the ESD pulse takes precedence over the test with the cable installed during the test, provided that the charge has sufficiently decayed between the successive discharges.

As an alternative, the following options can be used:

- the time interval between successive discharges shall be extended to the time necessary to allow natural decay of the charge from the EUT;
- a carbon fibre brush with bleeder resistors (for example, 2 \times 470 k Ω) in the grounding cable;
- an air-ionizer to speed-up the "natural" discharging process of the EUT to its environment.

The ionizer shall be turned off when applying an air-discharge test. The use of any alternative method shall be reported in the test report.

NOTE In case of dispute concerning the charge decay, the charge on the EUT can be monitored by a non-contacting electric field meter. When the charge has decayed below 10 % of the initial value, the EUT is considered to be discharged.

The tip of the ESD generator shall be held normal (perpendicular) to the surface of the EUT.

7.1.3.1 Table-top equipment

For table-top equipment, the EUT is placed on the horizontal coupling plane on top of the insulating foil (0,5 mm thick), as described in 7.1.1 and figure 5.

When a metallic accessible part, to which the ESD pulse is to be applied, is available on the EUT, this part shall be connected to the HCP via the cable with bleeder resistors; see figure 8.

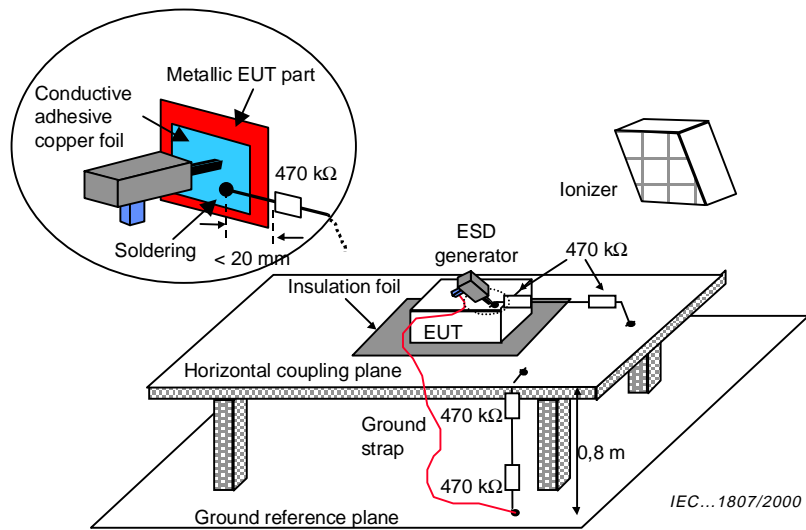


Figure 8 – Test set-up for ungrounded table-top equipment

7.1.3.2 Floor-standing equipment

STANDARD PREVIEW
(standards.iteh.ai)

Floor-standing equipment without any metallic connection to the ground reference plane shall be installed similarly to 7.1.2 and figure 6.

<https://standards.iteh.ai/catalog/standards/sist/b9597e03-487f-4c9d-8a18-11d111111111/61000-4-2:1997/A2:2002>

A cable with bleeder resistors shall be used between the metallic accessible part, to which the ESD pulse is to be applied, and the ground reference plane (GRP); see figure 9.

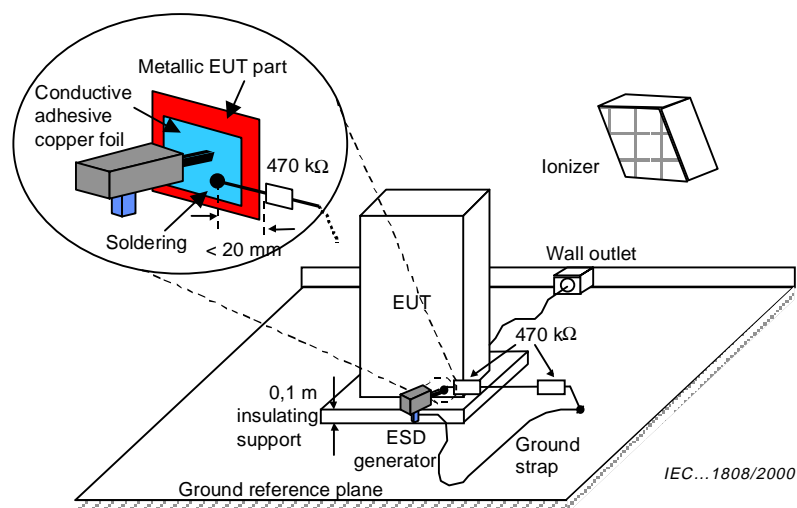


Figure 9 – Test set-up for ungrounded floor-standing equipment