



SLOVENSKI STANDARD
SIST EN 55024:2000

01-april-2000

Information technology equipment - Immunity characteristics - Limits and methods of measurement (CISPR 24:1997, modified)

Information technology equipment - Immunity characteristics - Limits and methods of measurement

Einrichtungen der Informationstechnik - Störfestigkeitseigenschaften - Grenzwerte und Messverfahren

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Appareils de traitement de l'information - Caractéristiques d'immunité - Limites et méthodes de mesure

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Ta slovenski standard je istoveten z: EN 55024:1998

ICS:

33.100.20	Imunost	Immunity
35.020	Informacijska tehnika in tehnologija na splošno	Information technology (IT) in general

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en

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EUROPEAN STANDARD

EN 55024

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 1998

ICS 33.100

Descriptors: Data processing equipment, telecommunication terminals, facsimile equipment, photocopying machines, printers, cash registers, vending machines, local area networks, electromagnetic immunity, radio disturbances, electrostatic discharge tests, characteristics, measurements, limits

English version

Information technology equipment - Immunity characteristics
Limits and methods of measurement
(CISPR 24:1997, modified)

Appareils de traitement de l'information

Einrichtungen der Informationstechnik

Caractéristiques d'immunité

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Limites et méthodes de mesure

Grenzwerte und Prüfverfahren

(CISPR 24:1997, modifiée)

(CISPR 24:1997, modifiziert)

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This European Standard was approved by CENELEC on 1998-08-01. 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.

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 the International Standard CISPR 24:1997, prepared by CISPR SC G, Interference relating to information technology equipment, together with common modifications prepared by SC 210A, EMC Products, of Technical Committee CENELEC TC 210, EMC, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 55024 on 1998-08-01.

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) 1999-02-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2001-07-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annexes A, B, C, D, E, F, G and ZA are normative.
Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard CISPR 24:1997 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS**1 Scope and object**

Add after the first sentence:

Harmonized standards prepared by ETSI, which cover the immunity requirements for telecommunications network equipment take precedence over this standard.

2 Normative references

Delete the references to ITU-T recommendations K15, K17, K20, K21 and K22.

4 Immunity test requirements4.2.3 *Replace the first paragraph by:*

The frequency range for the radiated field test is 80 MHz to 1000 MHz.

4.2.3.2 *Replace the text by:* (standards.iteh.ai)

The test procedure shall be in accordance with IEC 61000-4-6.

4.2.5 *Delete "or, if appropriate, ITU-T K20, K21 or K22".*

Table 1 In row 1.1, *delete* "or 60".
In row 1.2, *delete* " \leq " (column 3) and "and ³⁾" (column 6).
Delete note 3.

Table 2 *Replace by:*

Table 2: Immunity, signal ports and telecommunications ports

	Environmental phenomenon	Test specification	Units	Basic standard	Remarks	Performance criterion
2.1	Radio-frequency continuous conducted	0,15-80 3 80	Mhz V (unmodulated, r.m.s) % AM (1 kHz)	IEC 61000-4-6	See ¹⁾ and ³⁾	A
2.2	Surge Line to Ground	1 1,2/50 (8/20)	kV (peak) Tr/Th μ s	IEC 61000-4-5	See ²⁾ and ⁴⁾	B
2.3	Fast transients	0,5 5/50 5	kV (peak) Tr/Th ns Repetition frequency kHz	IEC 61000-4-4	See ³⁾	B

NOTES:

1) The frequency range is scanned as specified. However, when specified in Annex A, an additional comprehensive functional test shall be carried out at a limited number of frequencies. The selected frequencies for conducted tests are: 0,2; 1; 7,1; 13,56; 21; 27,12 and 40,68 Mhz ($\pm 1\%$).

2) Applicable only to ports which according to the manufacturer's specification may connect directly to outdoor cables.

3) Applicable only to cables which according to the manufacturer's specification supports communication on cable lengths greater than 3 m.

4) Where normal functioning cannot be achieved because of the impact of the CDN on the EUT, no test shall be required.

Table 3 *Delete note 3 and the reference thereto in row 3.1.*

Table 4 *Delete note 3 and the reference thereto in row 4.1.*

Annex A Telecommunications terminal equipment

A.2.2 In the third paragraph of Measurement method 2, *replace* "An A-law coded" by "An A-law or μ -law coded".

Add at the end of that same paragraph:

For coded signals other than A-law or μ -law, equivalent levels will be required or measurement method 1 shall be applied.

Annex B Data processing equipment

B.2.2 *At the end of the second paragraph delete* "or 60 Hz".

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Annex ZA (normative)**Normative references to international publications
with their corresponding European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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)	1990	International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility	-	-
IEC 60318	1970	An IEC artificial ear of the wide band type, for the calibration of earphones used in audiometry	-	-
IEC 61000-4-2	1995	Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques -- Section 2: Electrostatic discharge immunity test	EN 61000-4-2	1995
IEC 61000-4-3 (mod)	1995	Section 3: Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	1996
IEC 61000-4-4	1995	Section 4: Electrical fast transient/burst immunity test	EN 61000-4-4	1995
IEC 61000-4-5	1995	Section 5: Surge immunity test	EN 61000-4-5	1995
IEC 61000-4-6	1996	Section 6: Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	1996
IEC 61000-4-8	1993	Section 8: Power frequency magnetic field immunity test	EN 61000-4-8	1993
IEC 61000-4-11	1994	Section 11: Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	1994
CISPR 22 (mod)	1997	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement	EN 55022	1998
ISO 9241-3	1992	Ergonomic requirements for office work with visual display terminals (VDTs) Part 3: Visual display requirements	-	-

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ITU-T Recommendation I.241.1		Telephony	-	-
ITU-T Recommendation I.411		Integrated service digital network (ISDN) - User network interfaces	-	-

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INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

**Appareils de traitement de l'information –
Caractéristiques d'immunité –
Limites et méthodes de mesure**

**Information technology equipment –
Immunity characteristics –
Limits and methods of measurement**

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International Electrotechnical Commission
Telefax: +41 22 919 0300

e-mail: inmail@iec.ch

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



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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For price, see current catalogue*

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INFORMATION TECHNOLOGY EQUIPMENT –
IMMUNITY CHARACTERISTICS –
LIMITS AND METHODS OF MEASUREMENT**

FOREWORD

- 1) The formal decisions or agreements of the CISPR on technical matters, prepared by subcommittees on which all the National Committees and other member organizations of the CISPR having a special interest therein are represented, express, as nearly as possible, an international consensus on the subject dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees and other member organizations of the CISPR in that sense.
- 3) In order to promote international unification, the CISPR expresses the wish that all National Committees should adopt the text of the CISPR recommendation for their national rules in so far as national conditions will permit. Any divergence between the CISPR recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

International Standard CISPR 24 has been prepared by CISPR subcommittee G: Interference relating to information technology equipment.

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

FDIS	Report on voting
CISPR/G/113/FDIS	CISPR/G/120A/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.

Annexes A, B, C, D, E, F and G form an integral part of this standard.

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INTRODUCTION

This CISPR publication establishes uniform requirements for the electromagnetic immunity of information technology equipment. The test methods are given in the referenced Basic EMC Immunity Standards. This publication specifies applicable tests, test levels, product operating conditions and assessment criteria.

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INFORMATION TECHNOLOGY EQUIPMENT – IMMUNITY CHARACTERISTICS – LIMITS AND METHODS OF MEASUREMENT

1 Scope and object

This CISPR publication applies to information technology equipment (ITE) as defined in CISPR 22.

Procedures are defined for the measurement of ITE and limits are specified which are developed for ITE and within the frequency range from 0 Hz to 400 GHz.

The object of this publication is to establish requirements which will provide an adequate level of intrinsic immunity so that the equipment will operate as intended in its environment.

For exceptional environmental conditions, special mitigation measures may be required.

Owing to testing and performance assessment considerations, some tests are specified in defined frequency bands or at selected frequencies. Equipment which fulfils the requirements at these frequencies is deemed to fulfil the requirements in the entire frequency range from 0 Hz to 400 GHz for electromagnetic phenomena.

The object of this publication is to define the immunity test requirements for equipment defined in the scope in relation to continuous and transient, conducted and radiated disturbances, including electrostatic discharges (ESD).

The test requirements are specified for each port considered.

NOTES

- 1 Safety considerations are not covered in this publication.
- 2 In special cases, situations will arise where the level of disturbance may exceed the levels specified in this publication, for example where a hand-held transmitter is used in proximity to an equipment. In these instances special mitigation measures may have to be employed.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the publication referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

IEC 60050(161): 1990, *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*

IEC 60318: 1970, *An IEC artificial ear, of the wideband type, for the calibration of earphones used in audiometry*