



SLOVENSKI STANDARD
SIST EN 55011:1995/A2:1998
01-september-1998

Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment - Amendment A2 (CISPR 11:1990/A2:1996, modified)

Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment

Grenzwerte und Meßverfahren für Funkstörungen von industriellen, wissenschaftlichen und medizinischen Hochfrequenzgeräten (ISM-Geräten)

Limites et méthodes de mesure des caractéristiques de perturbations radioélectriques des appareils industriels, scientifiques et médicaux (ISM) à fréquence radioélectrique

Ta slovenski standard je istoveten z: EN 55011:1991/A2:1996

ICS:

33.100.99 Drugi vidiki v zvezi z EMC Other aspects related to EMC

SIST EN 55011:1995/A2:1998 en

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EUROPEAN STANDARD

EN 55011/A2

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ICS 33.100

Descriptors: Electrical equipment, industrial equipment, medical equipment, radio disturbance, measurement, characteristic, limit

English version

Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment (CISPR 11:1990/A2:1996 + corrigendum 1996)

Limites et méthodes de mesure des caractéristiques de perturbations radioélectriques des appareils industriels, scientifiques et médicaux (ISM) à fréquence radioélectrique (CISPR 11:1990/A2:1996 + corrigendum 1996)

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This amendment A2 modifies the European Standard EN 55011:1991; it was approved by CENELEC on 1996-10-01. 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.

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Urad RS za standardizacijo in meroslovje
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European Committee for Electrotechnical Standardization
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PREVZET PO METODI RAZGLASITVE

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

-09- 1996

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Ref. No. EN 55011:1991/A2:1996 E

Foreword

The text of document CISPR/B/148/FDIS, future amendment 2 to the International Standard CISPR 11:1990, prepared by CISPR SC B, Interference relating to industrial, scientific and medical radio-frequency apparatus, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A2 to EN 55011:1991 on 1996-03-05.

The text of CISPR/B/147/FDIS, which was included in amendment 2 to CISPR 11:1990, was submitted to the CENELEC formal vote and was approved by CENELEC for inclusion in amendment A2 to EN 55011:1991 on 1996-10-01.

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) 1997-09-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) -

NOTE: The limit values in the frequency range 9 kHz to 150 kHz are considered to be "provisional limits" which may be modified after some years of experience.

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The text of amendment 2:1996 (including corrigendum August 1996) to the International Standard CISPR 11:1990 was approved by CENELEC as an amendment to the European Standard without any modification.



COMMISSION
ÉLECTROTECHNIQUE
INTERNATIONALE

CISPR
11

1990

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

AMENDEMENT 2
AMENDMENT 2

1996-03

COMITÉ INTERNATIONAL SPÉCIAL DES PERTURBATIONS RADIOÉLECTRIQUES
INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

Amendement 2

**Limites et méthodes de mesure
des caractéristiques de perturbations
électromagnétiques des appareils industriels,
scientifiques et médicaux (ISM)
à fréquence radioélectrique**

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Amendment 2

**Limits and methods of measurement
of electromagnetic disturbance characteristics
of industrial, scientific and medical (ISM)
radio-frequency equipment**

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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FOREWORD

This amendment has been prepared by CISPR sub-committee B: Interference relating to industrial, scientific and medical radio-frequency apparatus.

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

FDIS	Report on voting
CISPR/B/147/FDIS	CISPR/B/158/RVD
CISPR/B/148/FDIS	CISPR/B/159/RVD

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

Page 9

Add, after 2.4, the following new subclause 2.5:

2.5 A click is a disturbance which exceeds the limit of continuous disturbance no longer than 200 ms and which is separated from a subsequent disturbance by at least 200 ms. Both intervals are related to the level of the limit of continuous disturbance.

A click may contain a number of impulses, in which case the relevant time is that from the beginning of the first to the end of the last impulse.

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Page 11

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4.1 *Separation into groups*

Add, at the end of the existing text, the following new text:

Excluded from the testing requirements and limits of this publication are components and subassemblies not intended to perform any stand-alone ISM function.

Page 13

5.1.1 *Frequency band 9 kHz to 150 kHz*

Add, at the end of this subclause, the following new text:

, except for induction cooking appliances.

Add, at the end of the existing text, the following new text:

For Class A Group 2 ISM equipment *in situ*, no limits apply unless otherwise specified in this publication.

Page 15

5.1.2 Frequency band 150 kHz to 30 MHz

Insert, immediately under the title of this subclause, the following subtitle:

Continuous disturbance

Replace the second paragraph by the following text:

For Class A Group 2 ISM equipment *in situ*, no limits apply unless otherwise specified in this publication.

Table IIB

Insert, after table IIB, the subtitle: "Discontinuous disturbance" and also add the following text:

For diagnostic X-ray generators, operating in intermittent mode, the limit for clicks shall be the quasi-peak limit, as formulated in table IIA or table IIB for continuous disturbance, increased by 20 dB.

Page 17

Add the new subclause 5.1.3 as follows:

5.1.3 Induction cooking appliances for domestic or commercial use

For induction cooking appliances for domestic or for commercial use (group 2 class B equipment), the limits of table IIC apply.

Table IIC – Main terminal disturbance voltage for induction cooking appliances

Frequency range MHz	Induction cooking appliance limits dB(μV)	
	Quasi-peak	Average
0,009 to 0,050	110	–
0,050 to 0,1485	90 Decreasing linearly with logarithm of frequency to 80	
0,1485 to 0,5	66 Decreasing linearly with logarithm of frequency to 56	56 Decreasing linearly with logarithm of frequency to 46
0,5 to 5	56	46
5 to 30	60	50

NOTE – The mains terminal disturbance voltage limits for a 100/110 V rated system are under consideration.

Renumber the present subclause 5.1.3 as 5.1.4.

Table III

Add, immediately after table III, the following text:

NOTE – For Group 1 Class A and B equipment, intended to be permanently installed in X-ray shielded locations, an increase in the electromagnetic radiation disturbance limits of 12 dB for tests conducted on a test site is allowed.

Such equipment which does not meet the table III limits is labelled as "Class A + 12" or "Class B + 12". The installation instructions should contain the following warning:

"Warning: This equipment is allowed to be installed only in X-ray protected rooms, which provide an attenuation of at least 12 dB for radio disturbances from 30 MHz to 1 GHz."

5.2.1 Frequency band 9 kHz to 150 kHz

Add, at the end of this subclause, the following new text:

, except for induction cooking appliances.

5.2.2 Frequency band 150 kHz to 1 GHz

Add, after the first sentence, the following new text:

For induction cooking appliances falling within group 2 class B, the limits are specified in tables IIIA and IIIB.

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Add the following new tables IIIA and IIIB after table III.

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Table IIIA –Limits of the magnetic field induced current in a 2 m loop antenna around the device under test

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Frequency range MHz	Limits in dB(μA) Quasi-peak	
	Horizontal component	Vertical component
0,009 to 0,070	88	106
0,070 to 0,1485	88 Decreasing linearly with logarithm of frequency to 58	106 Decreasing linearly with logarithm of frequency to 76
0,1485 to 30	58 Decreasing linearly with logarithm of frequency to 22	76 Decreasing linearly with logarithm of frequency to 40

NOTE – The limits of table IIIA apply to induction cooking appliances for domestic use which have a diagonal dimension of less than 1,6 m.
Measurement is performed using the "Van Veen loop method" as described in 7.5 of CISPR 16-2.

Table IIIB – Limits of the magnetic field strength

Frequency range MHz	Limits in dB(μ A/m) at 3 m distance Quasi-peak
0,009 to 0,070	69
0,070 to 0,1485	69 Decreasing linearly with logarithm of frequency to 39
0,1485 to 4,0	39 Decreasing linearly with logarithm of frequency to 3
4,0 to 30	3

NOTE – The limits of table IIIB apply to induction cooking appliances for commercial use and those for domestic use with a diagonal diameter of more than 1,6 m.
Measurements are performed at 3 m distance with a 0,6 m loop antenna as described in 15.2.1 of CISPR 16-1. The antenna shall be vertically installed, with the lower edge of the loop at 1 m height above the floor.

Page 19

Table IV

Replace the existing table by the following new table IV:

Table IV – Electromagnetic radiation disturbance limits for Group 2 Class B equipment measured on a test site

Frequency band MHz	Quasi-peak electric field measurement distance 10 m dB(μ V/m)	Quasi-peak magnetic field measurement distance 3 m dB(μ A/m)
0,15 – 30	–	39 decreasing linearly with logarithm of frequency to 3
30 – 80,872	30	–
80,872 – 81,848	50	–
81,848 – 134,786	30	–
134,786 – 136,414	50	–
136,414 – 230	30	–
230 – 1000	37	–

Table V, Electromagnetic radiation disturbance limits for Group 2, Class A equipment

Change the headings of table V as follows:

Frequency range MHz	Limits with measuring distance D	
	Distance D from exterior wall of the building dB (μ V/m)	On a test site D = 30 m from the equipment dB (μ V/m)