SLOVENSKI STANDARD
SIST EN 50083-2:2012/oprA2:2019

01-september-2019

Kabelska omrežja za televizijske signale, zvokovne signale in interaktivne storitve - 2. del: Elektromagnetna združljivost opreme

Cable networks for television signals, sound signals and interactive services - Part 2: Electromagnetic compatibility for equipment

Kabelnetze für Fernsehsignale, Tonsignale und interaktive Dienste - Teil 2: Elektromagnetische Verträglichkeit von Geräten

Réseaux de distribution par câbles pour signaux de télévision, signaux de radiodiffusion sonore et services interactifs - Partie 2: Compatibilité électromagnétique pour les matériels

Ta slovenski standard je istoveten z: **EN 50083-2:2012/prA2**

ICS:

33.060.40	Kabelski razdelilni sistemi	Cabled distribution systems
33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general

SIST EN 50083-2:2012/oprA2:2019 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
EN 50083-2:2012

prA2

June 2019

ICS 33.060.40

English Version

Cable networks for television signals, sound signals and interactive services - Part 2: Electromagnetic compatibility for equipment

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This draft amendment prA2, if approved, will modify the European Standard EN 50083-2:2012; it is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2019-09-06.

It has been drawn up by CLC/TC 209.

If this draft becomes an amendment, 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.

This draft amendment was established by CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (EN 50083-2:2012/prA2:2019) has been prepared by CLC/TC 209 "*Cable networks for television signals, sound signals and interactive services*".

This document is currently submitted to the Enquiry.

The following dates are proposed:

• latest date by which the existence of this document has to be announced at national level	(doa)	dor + 6 months
• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	dor + 12 months
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	dor + 36 months (to be confirmed or modified when voting)

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

1 Modifications to Clause 2, "Normative references"

Replace the references to EN 55013, EN 55020 EN 61000-3-2, EN 61000-4-4, EN 61000-4-6, ETSI EN 300 386 with the following ones:

EN 55013 + A1	2013 2016	Sound and television broadcast receivers and associated equipment — Radio disturbance characteristics — Limits and methods of measurement (CISPR 13:2009, modified + AMD1:2015, modified)
EN 55020 +IS1 +IS2 +A11 +IS3 +A12	2007 2009 2010 2011 2014 2016	Sound and television broadcast receivers and associated equipment — Immunity characteristics — Limits and methods of measurement (CISPR 20:2006)
EN 55032	2015	Electromagnetic compatibility of multimedia equipment — Emission Requirements (CISPR 32:2015)
EN IEC 60728-3	2018	Cable networks for television signals, sound signals and interactive services — Part 3: Active wideband equipment for cable networks (TA 5) (IEC 60728-3:2017)
EN 61000-3-2	2014	Electromagnetic compatibility (EMC) — Part 3-2: Limits — Limits for harmonic current emissions (equipment input current ≤ 16 A per phase) (IEC 61000-3-2:2014)
EN 61000-4-4	2012	Electromagnetic compatibility (EMC) — Part 4-4: Testing and measurement techniques — Electrical fast transient/burst immunity test (IEC 61000-4-4:2012)
EN 61000-4-6 + AC	2014	Electromagnetic compatibility (EMC) — Part 4-6: Testing and measurement techniques — Immunity to conducted disturbances, induced by radio-frequency fields (IEC 61000-4-6:2013)
ETSI EN 300 386 V2.1.1	2016	Electromagnetic compatibility and Radio spectrum Matters (ERM); Telecommunication network equipment; ElectroMagnetic Compatibility (EMC) requirements

Replace EN 60728-3 with EN IEC 60728-3 throughout the text.

Replace EN 55013 with EN 55032 throughout the text, with the exception of subclause 4.3.1

Replace ETSI EN 300 386 V1.5.1 (2010) with ETSI EN 300 386 V2.1.1 (2016)

2 Modification to subclause 4.1, "General operating conditions"

Replace the whole text of "4.1 General operating conditions" with:

"Measurements shall be, unless otherwise specified, carried out with the rated performance of the equipment under test and at standard room temperature.

The equipment shall be tested including all those sub-assemblies with which it would be used.

All operating conditions and configurations that are only temporarily present while adjustment or service is being made shall not be tested."

3 Modification to subclause 4.2.1.3.3, "Operating conditions"

Replace the text of the first paragraph with:

"The equipment under test shall be operated in accordance with the equipment specification and tested under conditions that maximise the disturbance voltages."

4 Modification to subclause 4.3.1, "Introduction"

Replace the sentence “In the frequency range 30 MHz to 1 000 MHz, the ‘absorbing clamp’ method of EN 55013 is used.” *with:*

“In the frequency range 30 MHz to 1 000 MHz[4], the ‘absorbing clamp’ method[5] described in EN 55013: 2013 + A1:2016 is used.”

5 Modification to subclause 4.3.3.1.4, "Operating conditions"

Replace the whole text of “4.3.3.1.4, Operating conditions” with:

“The equipment under test shall operate in accordance with the equipment specification and under conditions that maximise the radiation. The maximum rated output level shall be used for the test and stated on the equipment or accompanying data sheet.”

6 Modification to subclause 4.3.3.3.3, "Operating conditions"

Replace the text of the first paragraph with:

“The equipment under test shall operate in accordance with its specifications and under conditions that maximise the radiation. The maximum rated output level shall be used for the test and stated on the equipment or accompanying data sheet by the manufacturer.”

7 Modification to subclause 4.4.2, "Performance criterion"

Replace the whole text of “4.4.2 Performance criterion” with:

“4.4.2 Performance criteria

4.4.2.1 General

4.4.2.1.1 Performance criterion A

The apparatus shall continue to operate as intended during and after the test.

No unacceptable degradation of performance or loss of function is implicit, when the requirements of 4.4.2.2 are met, and the apparatus is used as intended.

4.4.2.1.2 Performance criterion B

The apparatus shall continue to operate as intended after the test. During the test measurement of performance is not relevant.

No unacceptable degradation of performance or loss of function is implicit, when the requirements of 4.4.2.2 are met, and the apparatus is used as intended.

4.4.2.2 In-channel wanted-to-unwanted signal ratio requirements

For the scope of this standard, the immunity level shall correspond to the level of the maximum incident electromagnetic disturbance, which produces no perceptible interference at the output of the equipment under test, when a specified operating level is present at the input or output of the equipment under test.

No perceptible interference corresponds to an in-channel RF wanted-to-unwanted signal ratio of at least:

— 60 dB for AM-VSB-TV and FM radio,

— 35 dB for FM-TV and DVB-S/QPSK,

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[4] Due to different channel spacing plans in use, this upper frequency limit may not be exactly 1 000 MHz but some megahertz higher, e.g. 1 006 MHz. The notation 1 000 MHz in this standard is intended to include such small deviations.

[5] The use of the “absorbing clamp” method provides for consistent and reliable measurements. Measurements based on TEM cell or Triaxial techniques are subject to environmental effects and shall not be used.

— 35 dB for digitally modulated TV (DVB-T/COFDM)

— 35 dB for digitally modulated TV and data signals (DVB-C/QAM)

when measured at the output of the equipment under test.

NOTE 1 The value for digitally modulated TV and data signals (cable transmissions) is derived from the minimum requirement of 32 dB for the RF signal-to-noise ratio SD,RF/N of 256 QAM modulated signals at the system outlet (EN 60728-1:2014, Table 13) with a surplus of 3 dB. It covers also the requirements of 64 QAM and COFDM signals taking into account that those signals partly use lower minimum signal levels.

NOTE 2 For compliance testing, it is not necessary to measure the actual level of immunity, but only to ensure that the immunity requirements of Clause 5 are complied with."

8 Modification to subclause 4.4.3.1.6, "Out-of-band immunity"

Replace the whole text of "4.4.3.1.6 Out-of-band immunity" with:

"For the scope of this standard, the external immunity level will correspond to the maximum level of the incident electromagnetic disturbance outside the nominal frequency ranges, which produces no perceptible interference (see 4.4.2) at the output of the equipment under test, when the maximum output level, as defined and published by the manufacturer, is present at the output."

9 Modification to subclause 4.4.3.2.6, "Test conditions"

Replace the text of the fourth paragraph with:

"A wanted signal with the lowest specified input level shall be applied to the input. If no input level is specified the wanted signal shall be applied with a level of 70 dB(µV) and with a level of 59 dB(µV) for digitally modulated signals in the frequency range 790 MHz to 862 MHz."

10 Modification to subclause 4.6.2, "Performance criterion B (according to EN 61000-6-1:2007)"

Replace the whole text of "4.6.2 Performance criterion B (according to EN 61000-6-1: 2007)" with:

"4.6.2 **Performance criterion B**

Performance criterion B is specified in 4.4.2."

11 Modification to subclause 4.7, "Electrical fast transient/burst immunity test for AC power ports"

Replace the whole text of "4.7 Electrical fast transient/burst immunity test for AC power ports" with:

"The test method and the procedure shall be those given in EN 61000-4-4, according to EN 61000-6-1:2007, Table 4, item 4.5: Fast transients.

Performance criterion B is according to 4.4.2."

12 Modification to subclause 5.4.1.1, "Out-of-band immunity (modulated interfering signal)"

Replace the text of the first paragraph with:

"The limits of out-of-band immunity are laid down in Table 7. They show the lowest level/field strength for compliance with performance criterion A, given in 4.4.2. Measurement shall be made in accordance with 4.4.3.1."

13 Modification to subclause 5.4.1.2, "In-band immunity (unmodulated interfering signal)"

Replace the text of the second paragraph with:

"The limits of in-band immunity are laid down in Table 8. They show the lowest level/field strength for compliance with performance criterion A, given in 4.4.2. Measurement shall be made in accordance with 4.4.3.2."

14 Modification to subclause 5.5, "Screening effectiveness of passive equipment"

Replace the text of Note 1 with:

NOTE 1 "For the specification of the limit values for the screening effectiveness it is based on, that the average interfering field strength at the passive equipment will be 106 dB(µV/m). Using a coupling factor of about 11 dB (at 175 MHz) and an average signal level in cable networks of 70 dB(µV), a screening effectiveness of 85 dB is necessary to achieve an RF carrier-to-interference signal ratio of 60 dB (analogue modulation of the wanted signal)."

15 Modification to subclause 5.6, "Electrostatic discharge immunity test for active equipment"

Replace the whole text of "5.6 Electrostatic discharge immunity test for active equipment" with:

"The requirements for electrostatic discharge immunity test for active equipment are laid down in Table 12. Measurements shall be made in accordance with 4.6.

Table 12 — Requirements for electrostatic discharge immunity test for active equipment

Port	Charge voltage kV	Performance criterion
Enclosure	**4**	**B**

"

16 Modification to subclause 5.7, "Electrical fast transient/burst immunity test for AC power ports"

Replace the whole text of "5.7 Electrical fast transient/burst immunity test for AC power ports" with:

"The requirements for electrical fast transient/burst immunity test are laid down in Table 13. Measurements shall be made in accordance with 4.7.

Table 13 — Requirements for electrical fast transient/burst immunity test

Port	Charge voltage kV	Performance criterion
AC power	**1**	**B**

"

17 Modification to the Annex ZZ, "Coverage of Essential Requirements of EU Directives"

Replace the whole Annex ZZ with the following Annex ZZ: