

SLOVENSKI STANDARD
SIST EN 50083-2:1999/A1:1999
01-april-1999

Cabled distribution systems for television, sound and interactive multimedia signals -- Part 2: Electromagnetic compatibility for equipment - Amendment A1

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

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Ta slovenski standard je istoveten z: EN 50083-2:1995/A1:1997

ICS:

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

SIST EN 50083-2:1999/A1:1999 **en**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 50083-2/A1

March 1997

ICS 29.020; 33.060.40

Descriptors: Telecommunications, television broadcasting, sound broadcasting, communication cables, electronic components, television systems, electromagnetic compatibility

English version

**Cabled distribution systems for television,
sound and interactive multimedia signals
Part 2: Electromagnetic compatibility for equipment**

Systèmes de distribution par câbles
destinés aux signaux de radiodiffusion
sonore, de télévision et multimédias
interactifs

Kabelverteilsysteme für Fernseh-,
Ton- und interaktive Multimedia-Signale
Teil 2: Elektromagnetische
Verträglichkeit von Geräten

Partie 2: Compatibilité
électromagnétique pour les matériels

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This amendment A1 modifies the European Standard EN 50083-2:1995; it was approved by CENELEC on 1996-12-09. 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, 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

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Ref. No. EN 50083-2:1995/A1:1997 E

Foreword

This amendment to the European Standard EN 50083-2:1995 was prepared by Technical Committee CENELEC TC 209, Cabled distribution systems for television, sound and interactive multimedia signals.

The text of the draft was submitted to the Unique Acceptance Procedure (UAP) and was approved by CENELEC as amendment A1 to EN 50083-2 on 1996-12-09.

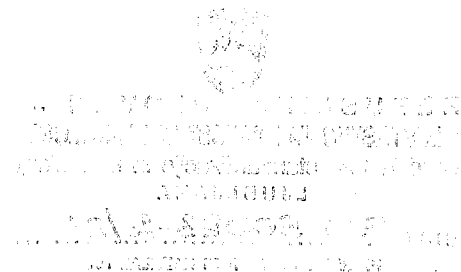
The following dates were fixed:

- 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) 1997-09-01

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Replace the title of this standard by:

Cabled distribution systems for television, sound and interactive multimedia signals
Part 2: Electromagnetic compatibility for equipment

CONTENTS

Add new subclause 1.1 and 1.2:

- 1.1 General
- 1.2 Specific scope of this part 2

Replace clause 3 by:

- 3 Terms, definitions, symbols and abbreviations

Add new subclauses 3.1, 3.2 and 3.3:

- 3.1 Terms and definitions
- 3.2 Symbols
- 3.3 Abbreviations

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- 1 Scope**

Replace the present scope by the following new one:

- 1 Scope**

- 1.1 General**

Standards of the EN 50083 series deal with cabled distribution systems for television, sound and interactive multimedia signals including equipment

- for headend-reception, processing and distribution of sound and television signals and their associated data signals and
- for processing, interfacing and transmitting all kinds of interactive multimedia signals

using all applicable transmission media.

They cover all kinds of systems such as

- CATV-systems,
- MATV- and SMATV-systems,
- individual receiving systems

and all kinds of equipment installed in such systems.

The extent of these standards is from the antennas, special signal source inputs to the headend or other interface points to the system up to the system outlet or the terminal input, where no system outlet exists.

The standardization of any user terminals (i.e. tuners, receivers, decoders, multimedia terminals etc.) is excluded.

1.2 Specific scope of this part 2

This standard

- applies to the radiation characteristics and immunity to electromagnetic disturbance of active and passive equipment for the reception, processing and distribution of television, sound and interactive multimedia signals as dealt with in the following parts of EN 50083 series:

- EN 50083-3 "Active coaxial wideband distribution equipment"
- EN 50083-4 "Passive coaxial wideband distribution equipment"
- EN 50083-5 "Headend equipment"
- EN 50083-6 "Optical equipment"

- covers the following frequency ranges.

Disturbance voltage injected into the mains		9 kHz to 30 MHz
Radiation from active equipment	(5 MHz) ¹⁾	30 MHz to 25 GHz
Immunity of active equipment		150 kHz to 25 GHz
Screening effectiveness of passive equipment	(5 MHz) ¹⁾	30 MHz to 3,0 GHz(25 GHz) ¹⁾

- specifies requirements for maximum allowed radiation, minimum immunity and minimum screening effectiveness
- describes test methods for conformance tests.

Coaxial cables for cabled distribution systems do not fall under the scope of this standard. Reference is made to the European standard series EN 50117 "Coaxial cables used in cabled distribution networks".

Standardization in the field of "Electromagnetic compatibility" for any user terminals (e.g. tuners, receivers, decoders, multimedia terminals etc.) is covered by the European Standards EN 55013 and EN 55020.

2 Normative references

Add the following new references to European standards:

EN 61000-3-2 1995 Electromagnetic compatibility (EMC)
Part 3: Limits - Section 2: Limits for harmonic current
emissions (equipment input current up to and including
16 A per phase)

Replace HD 481.3S1 by EN 61000-4-3

EN 61000-4-3 1996 Title to be completed

3 Terms and definitions

Replace the title by:

3 Terms, definitions, symbols and abbreviations

Replace the numbers of the following subclauses:

<https://standards.iteh.ai/catalog/standards/sist/c55351ea-c4e8-4e23-88c3-3076/sist-en-50083-2-1999-a1-1999>

old number	new number
3.1	3.1.1
3.2	3.1.2
3.3	3.1.3
3.4	3.1.4
3.5	3.1.5
3.6	3.1.6
3.7	3.1.7
3.8	3.1.8
3.9	3.1.9
3.10	3.1.10
3.11	3.1.11
3.12	3.1.12
3.13	3.1.13
3.14	3.1.14
3.15	3.1.15
3.16	3.1.16
3.17	3.1.17
3.18	3.1.18

Add the new title of subclause 3.1:

3.1 Terms and definitions

3.1.17 Replace the text by:

The output frequency range of the outdoor unit which is comprised of the frequency band between 950 MHz and 3 GHz or parts thereof.

Add new subclauses 3.1.19 and 3.1.20:

3.1.19 individual receiving system

A system designed to provide television and sound signals to an individual household.

3.1.20 spurious signals

All unwanted signals in the frequency range of interest.

Add new subclause 3.2:

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3.2 Symbols

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Add new subclause 3.3:

3.3 Abbreviations

AC	alternating current
ALC	automatic level control
AM	amplitude modulation
BSS	broadcast satellite services
CATV	Community Antenna Tele television (system)
COFDM	Coherent Orthogonal Frequency Division Multiplex
CW	continuous wave
DBS	direct broadcast satellite
DSR	digital satellite radio
EMC	electromagnetic compatibility
emf	electromagnetic force
EMI	electromagnetic interference
FM	frequency modulation
FSS	fixed satellite services
IF	intermediate frequency
LNB	low noise broadband-converter
MATV	Master Antenna Television (system)
QAM	quadrature amplitude modulation
QPSK	quadrature phase shift keying

RF	radio frequency
SAT	satellite
S-channel	special channel
SMATV	Satellite Master Antenna Television (system)
TV	television
VHF	very high frequency
VSB	vestigial side band

NOTE: Only the abbreviations used in the English version of this part of EN 50083 are mentioned in this subclause. The German and the French versions of this part may use other abbreviations. Refer to 3.3 of each language version for details.

4 Methods of measurements

4.1.2 *Replace the text by:*

If the input current rating is within the scope of EN 61000-3-2, the limits and test methods of this standard shall apply.

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4.2.1 *Replace the second indent of subclause "Single channel equipment" by:*

- at any other frequency where disturbance can occur.

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4.2.1 *Add to subclause "Wideband equipment" a new second indent:*

- at any other frequency where disturbance can occur.

4.2.1 *Replace the third indent of subclause "Frequency converters" by:*

- at any local oscillator harmonic, and any other frequencies where disturbance can occur.

4.2.2.3 *Add to subclause "Equipment layout and connections" the following new paragraph after the second presently existing paragraph:*

If no input signal is required (e.g. for measurements of local oscillator radiated power), the input shall be terminated by means of a well screened load. For measurements of local oscillator power at the input of the outdoor unit see 4.2.2.4.

4.2.2.4 Replace the second paragraph and the note by:

If a suitable interface at the input of the outdoor unit (e.g.R120, C120) is available, the local oscillator power can be measured by a power meter combined with a corresponding adapter.

4.3 Replace the text by:

Introduction

Any RF signal entering the equipment may produce interference. Unwanted signals can appear at the output of the equipment when disturbance frequencies, entering because of poor immunity

- generate intermodulation products with the wanted signal and other signals being distributed or transfer their modulation through crossmodulation to the wanted signal
- beat with oscillator signals or their harmonics or with other signals being distributed
- fall in the nominal frequency ranges of the equipment.

NOTE: Some interference can be avoided by a judicious choice of distributed channels.

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Performance criterion

For the scope of this standard, the immunity level will correspond to the level of the incident electromagnetic disturbance, which produces a just 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.

NOTE 1: It is assumed that the just perceptible interference corresponds to an in-channel RF wanted-to-unwanted signal ratio of:

60 dB	for AM-VSB-TV and FM radio
35 dB	for FM-TV
under consideration	for DSR, QPSK, QAM, COFDM

when measured at the output of the equipment under test.

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

Replace subclause 4.3.1 by:

4.3.1 Measurement of the external immunity to ambient fields

4.3.1.1 Out-of-band immunity (modulated interfering signal)

The method of measurement described hereafter is based on the method described in IEC 728-1:1986/A1:1992.

For frequencies between 150 kHz and 150 MHz the open stripline method is used. For frequencies between 150 MHz and 3 GHz measurements are made on a test site using a radiated field.

Methods of measurement for the frequency range 3 GHz to 25 GHz are under consideration.

Equipment required

The test equipment required for the measurement of the out-of-band immunity of equipment is listed below.

- (standards.iteh.ai)
- a signal generator covering the frequency range of interest (one wanted signal generator and one or two pilot-signal generators as required)
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 - two power RF generators covering the frequency range of interest and of sufficient output power to feed the transmitting antenna (two unwanted signal generators)
 - an open stripline as described in EN 55020 for the frequency range 150 kHz to 150 MHz or calibrated transmitting antennas suitable for the frequency range 150 MHz to 3 GHz
 - a measuring receiver or spectrum analyser
 - suitable combiners, test cables, and terminating loads all of which shall be well-matched and well-screened.

NOTE: Test equipment for connection to the unit under test shall be of 75 Ω impedance or provided with appropriate matching pads.

Test frequencies

For single channel equipment, measurements shall be carried out using a disturbance field at frequencies outside the nominal frequency ranges of the equipment under test (figures 13 and 14). For converters the disturbance field shall be at frequencies outside both the input and output nominal frequency ranges.