

?UVYg_Uca fYÿUnUHYYj]n]g_Y]b'nj c_cj bY'g][bUYHf']bHfU_hj bY'gHcf]hj Y!'%'&"
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Cable networks for television signals, sound signals and interactive services - Part 1-2:
Performance requirements for signals delivered at the system outlet in operation (IEC
60728-1-2:2009)

STANDARD PREVIEW
Kabelnetze für Fernsehsignale, Tonsignale und interaktive Dienste - Teil 1-2:
Leistungsanforderungen an Signale der Teilnehmeranschlussdose im realen Betrieb
(IEC 60728-1-2:2009)

<https://standards.iteh.ai/catalog/standards/sist/8022f480-67ec-4ae9-8840-621199999999/iec-60728-1-2-2009>
Réseaux de distribution par câbles pour signaux de télévision, signaux de radiodiffusion
sonore et services interactifs - Partie 1-2: Exigences de performance relatives aux
signaux délivrés à la prise terminale en fonctionnement (CEI 60728-1-2:2009)

Ta slovenski standard je istoveten z: EN 60728-1-2:2009

ICS:

33.060.40 Kabelski razdelilni sistemi Cabled distribution systems

SIST EN 60728-1-2:2009**en**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60728-1-2

September 2009

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English version

**Cable networks for television signals,
sound signals and interactive services -
Part 1-2: Performance requirements
for signals delivered at the system outlet in operation
(IEC 60728-1-2:2009)**

Réseaux de distribution par câbles
pour signaux de télévision,
signaux de radiodiffusion sonore
et services interactifs -
Partie 1-2: Exigences de performance
relatives aux signaux délivrés
à la prise terminale en fonctionnement
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Kabelnetze für Fernsehsignale,
Tonsignale und interaktive Dienste -
Teil 1-2: Leistungsanforderungen
an Signale der Teilnehmeranschlussdose
im realen Betrieb
(IEC 60728-1-2:2009)

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This European Standard was approved by CENELEC on 2009-07-01. 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.

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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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 100/1531/FDIS, future edition 1 of IEC 60728-1-2, prepared by technical area 5: Cable networks for television signals, sound signals and interactive services, of IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60728-1-2 on 2009-07-01.

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) 2010-04-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2012-07-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60728-1-2:2009 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60728-10 NOTE Harmonized as EN 60728-10:2006 (not modified).

[SIST EN 60728-1-2:2009](https://standards.iteh.ai/catalog/standards/sist/8022f480-67ec-4ae9-8840-4d54f3002991/sist-en-60728-1-2-2009)
<https://standards.iteh.ai/catalog/standards/sist/8022f480-67ec-4ae9-8840-4d54f3002991/sist-en-60728-1-2-2009>

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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 60050-705	- ¹⁾	International Electrotechnical Vocabulary (IEV) - Chapter 705: Radio wave propagation	-	-
IEC 60050-712	- ¹⁾	International Electrotechnical Vocabulary (IEV) - Chapter 712: Antennas	-	-
IEC 60050-725	- ¹⁾	International Electrotechnical Vocabulary (IEV) - Chapter 725: Space radiocommunications	-	-
IEC 60728-1	2007	Cable networks for television signals, sound signals and interactive services - Part 1: System performance of forward paths	EN 60728-1	2008
IEC 60728-1-1	- ²⁾	Cable networks for television signals, sound signals and interactive services - Part 1-1: RF cabling for two way home networks	EN 60728-1-1	- ²⁾
IEC 60728-3	- ¹⁾	Cable networks for television signals, sound signals and interactive services - Part 3: Active wideband equipment for coaxial cable networks	EN 60728-3	2006 ³⁾
IEC 60966-2-4	- ¹⁾	Radio frequency and coaxial cable assemblies - Part 2-4: Detail specification for cable assemblies for radio and TV receivers - Frequency range 0 MHz to 3 000 MHz, IEC 61169-2 connectors	EN 60966-2-4	2009 ³⁾
IEC 60966-2-5	- ¹⁾	Radio frequency and coaxial cable assemblies - Part 2-5: Detail specification for cable assemblies for radio and TV receivers - Frequency range 0 MHz to 1 000 MHz, IEC 61169-2 connectors	EN 60966-2-5	2009 ³⁾
IEC 60966-2-6	- ¹⁾	Radio frequency and coaxial cable assemblies - Part 2-6: Detail specification for cable assemblies for radio and TV receivers - Frequency range 0 MHz to 3 000 MHz, IEC 61169-24 connectors	EN 60966-2-6	2009 ³⁾

¹⁾ Undated reference.

²⁾ At draft stage.

³⁾ Valid edition at date of issue

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ITU-R Recommendation BT.500-7	- ¹⁾	Methodology for the subjective assessment of the quality of television pictures	-	-
ITU-R Recommendation B.654	- ¹⁾	Subjective quality of television pictures in relation to the main impairments of the analogue composite television signal	-	-
ITU-R Recommendation B.655	- ¹⁾	Radio-frequency protection ratios for AM vestigial sideband terrestrial television systems interfered with by unwanted analogue vision signals and their associated sound signals	-	-
ITU-T Recommendation J.61	- ¹⁾	Transmission performance of television circuits designed for use in international connections	-	-
ITU-T Recommendation J.63	- ¹⁾	Insertion of test signals in the field-blanking interval of monochrome and colour television signals	-	-
-	-	Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for 11/12 GHz satellite services	ETSI EN 300 421	- ¹⁾
-	-	Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for cable systems	ETSI EN 300 429	- ¹⁾
-	-	Digital Video Broadcasting (DVB); Satellite Master Antenna Television (SMATV) distribution systems	ETSI EN 300 473	- ¹⁾
-	-	Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for digital terrestrial television	ETSI EN 300 744	- ¹⁾
-	-	Digital Video Broadcasting (DVB); Second generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband satellite applications	ETSI EN 302 307	- ¹⁾



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**Cable networks for television signals, sound signals and interactive services –
Part 1-2: Performance requirements for signals delivered at the system outlet in
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CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references	8
3 Terms, definitions, symbols and abbreviations.....	10
3.1 Terms and definitions	10
3.2 Abbreviations	15
4 Methods of measurement	16
5 Subjective quality of television pictures in relation to the main impairments of the analogue composite television signal.....	17
5.1 Subjective quality scale	17
5.2 Subjective quality and objective parameters	17
6 Summation of the impairments	20
6.1 Impairments to be summed	20
6.2 Summation laws	21
6.2.1 General	21
6.2.2 Voltage addition	21
6.2.3 Power addition.....	22
6.3 Examples	22
7 Performance requirements in operation	22
7.1 General.....	22
7.2 Impedance.....	23
7.3 Performance requirements at the terminal input.....	23
7.3.1 Definition.....	23
7.3.2 Signal level.....	23
7.3.3 Other parameters	23
7.4 Performance requirements at system outlets	23
7.4.1 Minimum and maximum carrier levels	23
7.4.2 Mutual isolation between system outlets.....	23
7.4.3 Isolation between individual outlets in one household.....	24
7.4.4 Isolation between forward and return path	24
7.4.5 Long-term frequency stability of distributed carrier signals at any system outlet	24
7.4.6 Carrier level differences at system outlet.....	24
7.4.7 Frequency response within a television channel	24
7.4.8 Random noise at system outlet.....	24
7.4.9 Interference to television channels	26
Annex A (normative) RF carrier to noise ratio	28
Annex B (informative) Examples of summation of impairments.....	31
Bibliography.....	33
Figure 1 – CATV/MATV/SMATV cable network – Performance requirements	8
Figure 2 – Examples of location of HNI for various home network types.....	13
Figure 3 – Signal to echo ratio (dB) versus echo delay (µs)	20
Figure A.1 – Example of a TV receiver IF filter (systems B and G).....	28

Figure A.2 – Example of a demodulated TV signal (systems B and G)	29
Table 1 – Methods of measurement of IEC 60728-1 applicable in operation.....	17
Table 2 – Impairment units versus subjective quality.....	17
Table 3 – Impairment grade versus un-weighted white noise	18
Table 4 – Impairment grade versus differential gain	19
Table 5 – Impairment grade versus differential phase	19
Table 6 – Impairment grade versus short time linear distortion (2T pulse).....	19
Table 7 – Impairment grade versus chrominance-luminance gain inequality.....	19
Table 8 – Impairment grade versus chrominance-luminance delay inequality	19
Table 9 – Impairment grade versus echo rating (1µs echo delay).....	20
Table 10 – Correction factors to be applied for delays different than 1 µs	20
Table 11 – Carrier-to-noise ratios and RF signal-to-noise ratios at system outlet (television) in operation	25
Table 12 – Carrier-to-noise ratios at system outlet (radio) in operation	26
Table B.1 – Examples of voltage addition	31
Table B.2 – Examples of power addition	32

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SIST EN 60728-1-2:2009

<https://standards.iteh.ai/catalog/standards/sist/8022f480-67ec-4ae9-8840-4d54f3002991/sist-en-60728-1-2-2009>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CABLE NETWORKS FOR TELEVISION SIGNALS,
SOUND SIGNALS AND INTERACTIVE SERVICES –****Part 1-2: Performance requirements for signals
delivered at the system outlet in operation**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60728-1-2 has been prepared by technical area 5: Cable networks for television signals, sound signals and interactive services, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

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

FDIS	Report on voting
100/1531/FDIS	100/1562/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.

A list of all parts of the IEC 60728 series, published under the general title *Cable networks for television signals, sound signals and interactive services*, can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

A bilingual version of this publication may be issued at a later date.

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INTRODUCTION

Standards of the IEC 60728 series deal with cable networks including equipment and associated methods of measurement for headend reception, processing and distribution of television signals, sound signals and their associated data signals, and for processing, interfacing and transmitting all kinds of signals for interactive services using all applicable transmission media.

This includes

- CATV¹-networks,
- MATV-networks and SMATV-networks,
- individual receiving networks

and all kinds of equipment, systems and installations installed in such networks.

The extent of this standardization work is from the antennas and/or special signal source inputs to the headend or other interface points to the network up to the terminal input.

The standardization of any user terminals (i.e. tuners, receivers, decoders, multimedia terminals, etc.) as well as of any coaxial, balanced and optical cables and accessories thereof is excluded.

The reception of television signals inside a building requires an outdoor antenna and a distribution network to convey the signal to the TV receivers.

This part of IEC 60728 deals with the requirements that must be fulfilled at the system outlet or terminal input, when the CATV/MATV/SMATV system is in operation.

These performance requirements for signals at the system outlet or terminal input in operation are derived from considerations of the characteristics of the received signals at the input of the headend (see Clause 6 of IEC 60728-1) and the summation of the impairments produced by the headend, the CATV/MATV/SMATV network and the home network, when the requirements given in IEC 60728-1 and IEC 60728-1-1 are fulfilled.

This document gives the guidelines for calculation of the operational characteristics at system outlet, taking into account the performance requirements of the CATV/MATV/SMATV network, of the home networks and of the received signals, given in the International Standards IEC 60728-1 and 60728-1-1 prepared by TA 5: Cable networks for television signals, sound signals and interactive services, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

¹ This word encompasses the Hybrid Fibre Coaxial (HFC) networks used nowadays to provide telecommunications services, voice, data, audio and video both broadcast and narrowcast.