SLOVENSKI STANDARD
SIST EN 60728-1-1:2010

01-november-2010

Kabelska omrežja za televizijske in zvokovne signale ter interaktivne storitve - 1-1. del: RF okablenje za dvosmerna domača omrežja (IEC 60728-1-1:2010)

Cable networks for television signals, sound signals and interactive services - Part 1-1: RF cabling for two way home networks (IEC 60728-1-1:2010)

Kabelnetze für Fernsehsignale, Tonsignale und interaktive Dienste - Teil 1-1: Zweiwege-HFWohnungsvernetzung (IEC 60728-1-1:2010)

Réseaux de distribution par câbles destinés aux signaux de télévision, de radiodiffusion sonore et aux services interactifs - Partie 1-1 : câblage RF pour réseaux domestiques bidirectionnels (CEI 60728-1-1:2010)

Ta slovenski standard je istoveten z: **EN 60728-1-1:2010**

ICS:

33.060.40 Kabelski razdelilni sistemi Cabled distribution systems

SIST EN 60728-1-1:2010 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60728-1-1

April 2010

ICS 33.060.30; 33.160.01

English version

Cable networks for television signals, sound signals and interactive services - Part 1-1: RF cabling for two way home networks (IEC 60728-1-1:2010)

Réseaux de distribution par câbles destinés aux signaux de télévision, de radiodiffusion sonore et aux services interactifs -
Partie 1-1 : câblage RF pour réseaux domestiques bidirectionnels
(CEI 60728-1-1:2010)

Kabelnetze für Fernsehsignale, Tonsignale und interaktive Dienste -
Teil 1-1: Zweiwege-HF-Wohnungsvernetzung
(IEC 60728-1-1:2010)

This European Standard was approved by CENELEC on 2010-04-01. 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, Bulgaria, Croatia, 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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 60728-1-1:2010 E

Foreword

The text of document 100/1622/FDIS, future edition 1 of IEC 60728-1-1, prepared by 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 60728-1-1 on 2010-04-01.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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)	2011-01-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2013-04-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60728-1-1:2010 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61169-2	NOTE	Harmonized as EN 61169-2.
IEC 61169-24	NOTE	Harmonized as EN 61169-24.
IEC 61196-2	NOTE	Harmonized as EN 61196-2.

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.

Publication	Year	Title	EN/HD	Year
-	-	Coaxial cables - Part 2-4: Sectional specification for cables used in cabled distribution networks - Indoor drop cables for systems operating at 5 MHz - 3 000 MHz	EN 50117-2-4	-
IEC 60050-705	-	International Electrotechnical Vocabulary (IEV) - Chapter 705: Radio wave propagation	-	-
IEC 60050-712	-	International Electrotechnical Vocabulary (IEV) - Chapter 712: Antennas	-	-
IEC 60050-725	-	International Electrotechnical Vocabulary (IEV) - Chapter 725: Space radiocommunications	-	-
IEC 60617	-	Standard data element types with associated classification scheme for electric components - Part 4: IEC reference collection of standard data element types and component classes	-	-
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 60728-1-2	-	Cable networks for television signals, sound signals and interactive services - Part 1-2: Performance requirements for signals delivered at the system outlet in operation	EN 60728-1-2	-
IEC 60728-3	2005	Cable networks for television signals, sound signals and interactive services - Part 3: Active wideband equipment for coaxial cable networks	EN 60728-3	2006
IEC 60728-10	-	Cable networks for television signals, sound signals and interactive services - Part 10: System performance of return paths	EN 60728-10	-
IEC 60966	Series	Radio frequency and coaxial cable assemblies	EN 60966	Series
IEC 60966-2-4	-	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	-

Publication	Year	Title	EN/HD	Year
IEC 60966-2-5	-	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	-
IEC 60966-2-6	-	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	-
ETSI EN 300 421	-	Digital Video Broadcasting (DVB): Framing structure, channel coding and modulation for 11/12 GHz satellite services	-	-
ETSI EN 300 429	-	Digital Video Broadcasting (DVB): Framing structure, channel coding and modulation for cable systems	-	-
ETSI EN 300 473	-	Digital Video Broadcasting (DVB): Satellite Master Antenna Television (SMATV) distribution systems	-	-
ETSI EN 300 744	-	Digital Video Broadcasting (DVB): Framing structure, channel coding and modulation for digital terrestrial television	-	-
ETSI EN 302 307	-	Digital Video Broadcasting (DVB); Second generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband satellite applications	-	-
IEEE 802.11	1999	IEEE Standard for Information technology-Telecommunications and information exchange between systems-Local and metropolitan area networks-Specific requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications	-	-
IEEE 802.11a	1999	IEEE Standard for Information technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – Specific requirements – Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications	-	-
IEEE 802.11b	1999	Supplement to 802.11-1999, Wireless LAN MAC and PHY specifications: Higher speed Physical Layer (PHY) extension in the 2.4 GHz band	-	-

Publication	Year	Title	EN/HD	Year
IEEE 802.11e	2005	IEEE Standard for Information technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – Specific requirements Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications	-	-
IEEE 802.11g	2003	IEEE Standard for Information technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – Specific requirements – Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications	-	-
IEEE 802.11h	2003	IEEE Standard for Information technology – Telecommunications and Information Exchange Between Systems – LAN/MAN Specific Requirements – Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications: Spectrum and Transmit Power Management Extensions in the 5GHz band in Europe	-	-
IEEE 802.11n/D4.0	-	March 2008 Active Unapproved Draft – IEEE Draft STANDARD for Information Technology-Telecommunications and information exchange between systems- Local and metropolitan area networks-Specific requirements- Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications	-	-
IEEE 802.16	2004	IEEE Standard for Local and metropolitan area networks – Part 16: Air Interface for Fixed Broadband Wireless Access Systems (WiMax)	-	-
ITU-R Recommendation BT.500	-	Methodology for the subjective assessment of the quality of television pictures	-	-
ITU-T Recommendation J.61	-	Transmission performance of television circuits designed for use in international connections	-	-
ITU-T Recommendation J.63	-	Insertion of test signals in the field-blanking interval of monochrome and colour television signals	-	-

IEC 60728-1-1

Edition 1.0 2010-01

INTERNATIONAL STANDARD

colour inside

Cable networks for television signals, sound signals and interactive services – Part 1-1: RF cabling for two way home networks

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PRICE CODE XA

ICS 33.060.30; 33.160.01

ISBN 2-8318-1074-3

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

CABLE NETWORKS FOR TELEVISION SIGNALS, SOUND SIGNALS AND INTERACTIVE SERVICES –

Part 1-1: RF cabling for two way home networks

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.

2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.

3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.

4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.

5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.

6) All users should ensure that they have the latest edition of this publication.

7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.

8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60728-1-1 has been prepared by technical area 5: Cable networks for television signals, sound signals and interactive services, of IEC technical committee 100: Audio, viedeo and multimedia systems and equipment.

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

FDIS	Report on voting
100/1622/FDIS	100/1645/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.

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

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

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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

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

- CATV[1]-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 standardisation work is from the antennas, 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 the IEC 60728 deals with the requirements and implementation guidelines for a home network that can be realised with different techniques. The following types of home networks (HN) are possible:

- passive coaxial home network;
- active coaxial home network;
- different home network types.

Figure 1 shows typical situations that are possible when considering RF home networks.

The RF home network can be realised using coaxial cables, balanced cables, optical cables or radio links.

---

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