SLOVENSKI STANDARD
SIST EN 60728-14:2014

01-oktober-2014

Kabelska omrežja za televizijske in zvokovne signale ter interaktivne storitve - 14. del: Optični prenosni sistemi s tehnologijo RFoG (IEC 60728-14:2014)

Cable networks for television signals, sound signals and interactive services - Part 14: Optical transmission systems using RFoG technology (IEC 60728-14:2014)

Kabelnetze für Fernsehsignale, Tonsignale und interaktive Dienste - Teil 14: Optische Übertragungssysteme mit RFoG-Technik (IEC 60728-14:2014)

Réseaux de distribution par câbles destinés aux signaux de télévision, de radiodiffusion sonore et aux service interactifs - Partie 14: Systèmes de transmission optique appliquant la technologie RFoG (CIE 60728-14:2014)

Ta slovenski standard je istoveten z: **EN 60728-14:2014**

ICS:

33.060.40	Kabelski razdelilni sistemi	Cabled distribution systems
33.180.01	Sistemi z optičnimi vlakni na splošno	Fibre optic systems in general

SIST EN 60728-14:2014 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60728-14

May 2014

ICS 33.060.40; 33.160; 33.180

English Version

Cable networks for television signals, sound signals and interactive services - Part 14: Optical transmission systems using RFoG technology (IEC 60728-14:2014)

Réseaux de distribution par câbles pour signaux de télévision, signaux de radiodiffusion sonore et services interactifs - Partie 14: Systèmes de transmission optique appliquant la technologie RFoG (CEI 60728-14:2014)

Kabelnetze für Fernsehsignale, Tonsignale und interaktive Dienste - Teil 14: Optische Übertragungssysteme mit RFoG-Technik (IEC 60728-14:2014)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of document 100/2248/FDIS, future edition 1 of IEC 60728-14, 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 approved by CENELEC as EN 60728-14:2014.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2015-01-11
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2017-04-11

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Endorsement notice

The text of the International Standard IEC 60728-14:2014 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 60068 Series	NOTE	Harmonized as EN 60068 Series (not modified).
IEC 60169-24	NOTE	Harmonized as EN 60169-24.
IEC 60728-5	NOTE	Harmonized as EN 60728-5.
IEC 60793-2-50	NOTE	Harmonized as EN 60793-2-50.
IEC 60825-2	NOTE	Harmonized as EN 60825-2.
IEC 61281-1:1999	NOTE	Harmonized as EN 61281-1:1999 (not modified).
IEC 61280-2-2	NOTE	Harmonized as EN 61280-2-2.
IEC 61280-4-2	NOTE	Harmonized as EN 61280-4-2.
IEC 61290-1-1	NOTE	Harmonized as EN 61290-1-1.
IEC 61290-1-2	NOTE	Harmonized as EN 61290-1-2.
IEC 61290-6-1	NOTE	Harmonized as EN 61290-6-1.
IEC 61291-4	NOTE	Harmonized as EN 61291-4.
IEC 80416 Series	NOTE	Harmonized as EN 80416 Series (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

Publication	Year	Title	EN/HD	Year
IEC 60068-1	1988	Environmental testing - Part 1: General and guidance	EN 60068-1	1994 [1)]
IEC 60068-2-1	-	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	-
IEC 60068-2-2	-	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	-
IEC 60068-2-6	2007	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	2008
IEC 60068-2-14	-	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	-
IEC 60068-2-27	-	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	-
IEC 60068-2-30	-	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	-
IEC 60068-2-31	-	Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens	EN 60068-2-31	-
IEC 60068-2-40	-	Basic environmental testing procedures - Part 2: Tests - Test Z/AM: Combined cold/low air pressure tests	EN 60068-2-40	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	EN 60529	-
IEC 60728-1	-	Cable networks for television signals, sound signals and interactive services - Part 1: System performance of forward paths	EN 60728-1	-

[1)] Superseded by EN 60068-1:2014 (IEC 60068-1:2013).

Publication	Year	Title	EN/HD	Year
IEC 60728-2	-	Cable networks for television signals, sound signals and interactive services - Part 2: Electromagnetic compatibility for equipment	EN 50083-2	-
IEC 60728-3	-	Cable networks for television signals, sound signals and interactive services - Part 3: Active wideband equipment for cable networks	EN 60728-3	-
IEC 60728-6	2011	Cable networks for television signals, sound signals and interactive services - Part 6: Optical equipment	EN 60728-6	2011
IEC 60728-10	2014	Cable networks for television signals, sound signals and interactive services - Part 10: System performance of return paths	EN 60728-10	2014
IEC 60728-11	-	Cable networks for television signals, sound signals and interactive services - Part 11: Safety	EN 60728-11	-
IEC 60728-13	2010	Cable networks for television signals, sound signals and interactive services - Part 13: Optical systems for broadcast signal transmissions	EN 60728-13	2010
IEC 60728-13-1	2012	Cable networks for television signals, sound signals and interactive services - Part 13-1: Bandwidth expansion for broadcast signal over FTTH system	EN 60728-13-1	2012
IEC 60793-2-50	2012	Optical fibres - Part 2-50: Product specifications - Sectional specification for class B single-mode fibres	EN 60793-2-50	2013
IEC 60794-3-11	2010	Optical fibre cables - Part 3-11: Outdoor cables - Product specification for duct, directly buried and lashed aerial single-mode optical fibre telecommunication cables	EN 60794-3-11	2010
IEC 60825-1	-	Safety of laser products - Part 1: Equipment classification and requirements	EN 60825-1	-
IEC 61169-2	-	Radio-frequency connectors - Part 2: Sectional specification - Radio frequency coaxial connectors of type 9,52	EN 61169-2	-
IEC 61169-24	-	Radio-frequency connectors - Part 24: Sectional specification - Radio frequency coaxial connectors with screw coupling, typically for use in 75 ohm cable networks (type F)	EN 61169-24	-

Publication	Year	Title	EN/HD	Year
IEC 61280-1-1	-	Fibre optic communication subsystem basic test procedures - Part 1-1: Test procedures for general communication subsystems - Transmitter output optical power measurement for single-mode optical fibre cable	EN 61280-1-1	-
IEC 61280-1-3	-	Fibre optic communication subsystem test procedures - Part 1-3: General communication subsystems - Central wavelength and spectral width measurement	EN 61280-1-3	-
IEC 61754-4	-	Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces - Part 4: Type SC connector family	EN 61754-4	-
IEC/TR 61931	1998	Fibre optic - Terminology	-	-
IEEE 802.3	2008	IEEE Standard for Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications	-	-
IEEE 802.3av	2009	IEEE Standard for Information technology - Local and metropolitan area networks - Specific requirements - Part 3: CSMA/CD Access Method and Physical Layer Specifications - Amendment 1: Physical Layer Specifications and Management Parameters for 10 Gb/s Passive Optical Networks	-	-

IEC 60728-14

Edition 1.0 2014-03

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Cable networks for television signals, sound signals and interactive services – Part 14: Optical transmission systems using RFoG technology

Réseaux de distribution par câbles pour signaux de télévision, signaux de radiodiffusion sonore et services interactifs – Partie 14: Systèmes de transmission optique appliquant la technologie RFoG

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 14: Optical transmission systems using RFoG technology

FOREWORD

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International Standard IEC 60728-14 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
100/2248/FDIS	100/2284/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.

The list of all the 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.

This standard follows closely (where applicable) the ANSI/SCTE 174 2010 standard “Radio Frequency over Glass / Fiber-to-the-Home Specification”. In agreement with SCTE[1] major parts of ANSI/SCTE 174:2010 have been copied into this standard.

The committee has decided that the contents of this publication will remain unchanged until the stability 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.

[1] SCTE = Society of Cable Telecommunications Engineers

INTRODUCTION

Standards and other deliverables of the IEC 60728 series deal with cable networks including equipment and associated methods of measurement for headend reception, processing and distribution of television and sound signals and for processing, interfacing and transmitting all kinds of data signals for interactive services using all applicable transmission media. These signals are typically transmitted in networks by frequency-multiplexing techniques.

- regional and local broadband cable networks,
- extended satellite and terrestrial television distribution systems,
- individual satellite and terrestrial television receiving systems,

and all kinds of equipment, systems and installations used in such cable networks, distribution and receiving systems.

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 of the customer premises equipment.

The standardization work will consider coexistence with users of the RF spectrum in wired and wireless transmission systems.

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 Annexes provide the following information.

Annex A	describes implementation notes with design consideration based on this standard
Annex B	describes the system loss specification
Annex C	describes multiple CMTS operation
Annex D	contains specifications for an optional remote control system
Annex E	gives a design guideline of housings for R-ONU protection
Annex F	contains information on the effect of off-state optical power on C/N ratio of transmission signal