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BS EN 60728-10:2014



BSI Standards Publication

Cable networks for television signals, sound signals and interactive services

Part 10: System performance for return paths

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National foreword

This British Standard is the UK implementation of EN 60728-10:2014. It is identical to IEC 60728-10:2014. It supersedes BS EN 60728-10:2006 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee EPL/100, Audio, video and multimedia systems and equipment, to Subcommittee EPL/100/4, Cable distribution equipment and systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

Cable networks for television signals, sound signals and interactive services - Part 10: System performance for return paths (IEC 60728-10:2014)

Réseaux de distribution par câbles pour signaux de télévision, signaux de radiodiffusion sonore et services interactifs - Partie 10: Performances des systèmes de voie de retour
(CEI 60728-10:2014)

Kabelnetze für Fernsehsignale, Tonsignale und interaktive Dienste - Teil 10: Rückweg-Systemanforderungen
(IEC 60728-10:2014)

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Foreword

The text of document 100/2247/FDIS, future edition 3 of IEC 60728-10, 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 60728-10:2014.

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)	2015-01-15
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2017-04-15

This document supersedes EN 50083-10:2002 and EN 60728-10:2006.

EN 60728-10:2014 includes the following significant technical changes with respect to EN 60728-10:2006:

- update on the state-of-the-art of return path transmission in cable networks;
- provisions for DOCSIS 3.0 and EuroDOCSIS 3.0 transmission standards;
- revision of Subclause 4.3 on measurement of channel level;
- new Subclause 4.12 for method of measurement of noise power ratio (NPR) on return paths;
- new Subclause 4.13 for 10-tone measurements;
- new Subclause 4.14 for method of measurement of modulation error ratio (MER);
- revision of Subclause 5.2 on analogue parameters influencing system performance.

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

Endorsement notice

The text of the International Standard IEC 60728-10:2014 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 60728-3	NOTE	Harmonized as EN 60728-3.
IEC 60728-4	NOTE	Harmonized as EN 60728-4.
IEC 60728-6	NOTE	Harmonized as EN 60728-6.
IEC 60728-11	NOTE	Harmonized as EN 60728-11.

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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
		Cable networks for television signals, sound signals and interactive services - Part 10-1: Guidelines for the implementation of return paths in cable networks	CLC/TR 50083-10-1	2009 [1)]
IEC 60728	Series	Cable networks for television signals, sound signals and interactive services	EN 60728	Series
IEC 60728-1	-	Cable networks for television signals, sound signals and interactive services - Part 1: System performance of forward paths	EN 60728-1	-
IEC 60728-2	-	Cable networks for television signals, sound signals and interactive services - Part 2: Electromagnetic compatibility for equipment	EN 50083-2	-
IEC 60728-5	-	Cable networks for television signals, sound signals and interactive services - Part 5: Headend equipment	EN 60728-5	-
IEC 60728-12	-	Cabled distribution systems for television and sound signals - Part 12: Electromagnetic compatibility of systems	EN 50083-8	-
ISO/IEC 13818-1	2007 [2)]	Information technology - Generic coding of moving pictures and associated audio information: Systems	-	-
ITU-R Recommendation BT.470	-	Conventional analogue television systems	-	-
ETSI ES 200 800	-	Digital Video Broadcasting (DVB); DVB interaction channel for Cable TV distribution systems (CATV)	-	-

[1)] Superseded by CLC/TR 50083-10-1:2014.

[2)] Superseded by ISO/IEC 13818-1:2013.

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ETSI EN 302 878-2	2011	Access, Terminals, Transmission and Multiplexing (ATTM); Third Generation Transmission Systems for Interactive Cable Television Services - IP Cable Modems; Part 2: Physical Layer; DOCSIS 3.0	-	-

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INTRODUCTION

Standards and deliverables of 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.

This includes for instance

- 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.

Specific equipment installed in cable networks for the operation of such return paths is standardised in the relevant equipment standards. See IEC 60728-3, IEC 60728-4, IEC 60728-5, IEC 60728-6.

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

Part 10: System performance for return paths

1 Scope

This part of IEC 60728 specifies the transparent return path of cable networks operated in the frequency range between 5 MHz and 85 MHz or parts thereof. The upper frequency limit of the return path is reduced to 65 MHz where FM radio signals are transmitted in a cable network. Higher frequencies may be used in fibre based networks.

NOTE In addition, it is possible to use the frequency range from 0 MHz to 5 MHz for return path transmissions, for example for NMS or other control, monitoring and signalling purposes. Applications below 5 MHz are not covered by this standard.

Specifications of transmission systems (e.g. DOCSIS) are not within the scope of this standard.

2 Normative references

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.

IEC 60728 (all parts), *Cable networks for television signals, sound signals and interactive services*

IEC 60728-1, *Cable networks for television signals, sound signals and interactive services – Part 1: System performance of forward paths*

IEC 60728-2, *Cable networks for television signals, sound signals and interactive services – Part 2: Electromagnetic compatibility for equipment*

IEC 60728-5, *Cable networks for television signals, sound signals and interactive services – Part 5: Headend equipment*

IEC 60728-12, *Cabled distribution systems for television and sound signals – Part 12: Electromagnetic compatibility of systems*

ISO/IEC 13818-1:2007, *Information technology − Generic coding of moving pictures and associated audio information − Part 1: Systems*

ITU-R BT.470, *Conventional analogue television systems*

CLC/TR 50083-10-1:2009, *Guidelines for the implementation of return paths in cable networks*

ETSI ES 200 800, *Digital Video Broadcasting (DVB); DVB interaction channel for Cable TV distribution systems (CATV)*

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