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I.S. EN 60728-7-3:2009

Cable networks for television signals, sound signals and interactive services -- Part 7-3: Hybrid fibre coax outside plant status monitoring - Power supply to transponder interface bus (PSTIB) (IEC 60728-7-3:2009 (EQV))

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English version

Cable networks for television signals, sound signals and interactive services - Part 7-3: Hybrid fibre coax outside plant status monitoring - Power supply to transponder interface bus (PSTIB)

(IEC 60728-7-3:2009)

Réseaux de distribution par câbles pour signaux de télévision, signaux de radiodiffusion sonore et services interactifs - Partie 7-3: Surveillance de l'état des installations extérieures des réseaux hybrides à fibre optique et câble coaxial - Alimentation du bus d'interface du répéteur (CEI 60728-7-3:2009)

Kabelnetze für Fernsehsignale, Tonsignale und interaktive Dienste - Teil 7-3: Zustandsüberwachung Hybrid-Faser-Koax-Netze (HFC) - Schnittstellenbus von Fernspeise-Stromversorgung zu Transponder (PSTIB) (IEC 60728-7-3:2009)

This European Standard was approved by CENELEC on 2009-11-01. 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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CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

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Foreword

The text of document 100/1464/CDV, future edition 2 of IEC 60728-7-3, 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 60728-7-3 on 2009-11-01.

This European Standard supersedes EN 60728-7-3:2005.

EN 60728-7-3:2009 includes the following significant technical changes with respect to EN 60728-7-3:2005:

– all changes from standard ANSI/SCTE 25-3 v1.0 to standard ANSI/SCTE 25-3 v1.1 (2005) have been taken into account in EN 60728-7-3:2009;

– Clause 7 is based on standard ANSI/SCTE 110 (2005);

– addition of informative Annex A concerning hybrid management sub-layer.

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)	2010-08-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2012-11-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60728-7-3:2009 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 60728-7-1	NOTE	Harmonized as EN 60728-7-1:2005 (not modified).
IEC 60728-7-2	NOTE	Harmonized as EN 60728-7-2:2005 (not modified).
IEC 60728-7-3	NOTE	Harmonized as EN 60728-7-3:2005 (not modified).

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
IEC 60603-7	-[1)]	Connectors for electronic equipment - Part 7: Detail specification for 8-way, unshielded, free and fixed connectors	EN 60603-7	2009[2)]

[1)] Undated reference.

[2)] Valid edition at date of issue.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 7-3: Hybrid fibre coax outside plant status monitoring – Power supply to transponder interface bus (PSTIB)

FOREWORD

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International Standard IEC 60728-7-3 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.

This second edition cancels and replaces the first edition published in 2003 of which it constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

- All changes from standard ANSI/SCTE 25-3 v1.0 to standard ANSI/SCTE 25-3 v1.1 (2005) have been taken into account in this second edition.
- Clause 7 is based on standard ANSI/SCTE 110 (2005).
- Addition of informative Annex A concerning hybrid management sub-layer.

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

CDV	Report on voting
100/1464/CDV	100/1599/RVC

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 standardization work is from the antennas and/or special signal source inputs to the head-end 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 following differences exist in some countries:

The Japanese *de facto* standard (NCTEA S-006) concerning requirements for the HFC outside plant management, which was published in 1995, has already been available in Japan. The purpose of this standard is to support the design and implementation of interoperable management systems for HFC cable networks used in Japan.

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

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

Part 7-3: Hybrid fibre coax outside plant status monitoring – Power supply to transponder interface bus (PSTIB)

1 Scope

This part of IEC 60728 specifies requirements for the Hybrid Fibre Coax (HFC) Outside Plant (OSP) Power Supplies (PS). This standard is part of a series developed to support the design and implementation of interoperable management systems for evolving HFC cable networks. The purpose of the standards is to support the design and implementation of interoperable management systems for evolving HFC cable networks. The Power Supply to Transponder Interface Bus (PSTIB) specification describes the physical (PHY) interface and related messaging and protocols implemented at the Data Link Layer (DLL), layers 1 and 2 respectively in the 7-layer ISO-OSI reference model, that support communications between compliant transponders and the managed OSP power supplies and other related power equipment to which they interface.

This standard describes the PSTIB PHY and DLL layer requirements and protocols that shall be implemented to support reliable communications between all type 2 and type 3 compliant OSP transponders on the HFC plant and managed OSP power supplies and related hardware. Any exceptions to compliance with this standard will be specifically noted as necessary.

Transponder type classifications referenced within the HMS series of standards are defined in Table 1.

Table 1 – Transponder type classifications

Type	Description	Application
Type 0	Refers to legacy transponder equipment which is incapable of supporting the specifications	• This transponder interfaces with legacy network equipment through proprietary means. • This transponder could be managed through the same management applications as the other types through proxies or other means at the head-end.
Type 1	Refers to stand-alone transponder equipment (legacy or new), which can be upgraded to support the specifications	• This transponder interfaces with legacy network equipment through proprietary means. • Type 1 is a standards-compliant transponder (either manufactured to the standard or upgraded) that connects to legacy network equipment via a proprietary interface.
Type 2	Refers to a stand-alone, compliant transponder	• This transponder interfaces with network equipment designed to support the electrical and physical specifications defined in the standards. • It can be factory or field-installed. • Its RF connection is independent of the monitored NE.
Type 3	Refers to a stand-alone or embedded, compliant transponder	• This transponder interfaces with network equipment designed to support the electrical specifications defined in the standards. • It may or may not support the physical specifications defined in the standards. • It can be factory-installed. It may or may not be field-installed. • Its RF connection is through the monitored NE.

A list of documents in the HMS specifications family is provided in informative Annex A.

2 Normative references

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.

IEC 60603-7, *Connectors for electronic equipment – Part 7: Detail specification for 8-way, unshielded, free and fixed connectors*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following definitions apply.

3.1.1
data link layer
DLL
layer 2 in the Open System Interconnection (OSI) architecture; the layer that provides services to transfer data over the physical transmission link between open systems

3.1.2
network element
NE
an active element in the outside plant (OSP) that is capable of receiving commands from a head-end element (HE) in the head-end and, as necessary, providing status information and alarms back to the HE

3.1.3
open system interconnection
OSI
framework of International Organization for Standardization (ISO) standards for communication between multi-vendor systems that organizes the communication process into seven different categories that are placed in a layered sequence based on the relationship to the user. Each layer uses the layer immediately below it and provides services to the layer above. Layers 7 through 4 deal with end-to-end communication between the message source and destination, and layers 3 through 1 deal with network functions

3.1.4
physical layer
PHY
layer 1 in the Open System Interconnection (OSI) architecture; the layer that provides services to transmit bits or groups of bits over a transmission link between open systems and which entails electrical, mechanical and handshaking procedures

3.1.5
transponder
device that interfaces to outside plant (OSP) NEs and relays status and alarm information to the HE. It can interface with an active NE via an arrangement of parallel analogue, parallel digital and serial ports