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Standards

Irish Standard  
I.S. EN 60958-4-4:2016

# Digital audio interface - Part 4-4: Professional applications - Physical and electrical parameters

**I.S. EN 60958-4-4:2016**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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*NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.*

*This document is based on:*

EN 60958-4-4:2016

*Published:*

2016-07-01

*This document was published under the authority of the NSAI and comes into effect on:*

2016-07-19

ICS number:

NOTE: If blank see CEN/CENELEC cover page

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## National Foreword

I.S. EN 60958-4-4:2016 is the adopted Irish version of the European Document EN 60958-4-4:2016, Digital audio interface - Part 4-4: Professional applications - Physical and electrical parameters

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EUROPEAN STANDARD

**EN 60958-4-4**

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2016

ICS 33.160.30

Supersedes EN 60958-4:2003 (partially)

English Version

Digital audio interface -  
Part 4-4: Professional applications -  
Physical and electrical parameters  
(IEC 60958-4-4:2016)

Interface audionumérique -  
Partie 4-4: Applications professionnelles -  
Paramètres physiques et électriques  
(IEC 60958-4-4:2016)

Digitalton-Schnittstelle -  
Teil 4-4: Professioneller Gebrauch -  
Physikalische und elektrische Eigenschaften  
(IEC 60958-4-4:2016)

This European Standard was approved by CENELEC on 2016-04-28. 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 CEN-CENELEC Management Centre or to any CENELEC member.

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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

## **European foreword**

The text of document 100/2454/CDV, future edition 1 of IEC 60958-4-4, prepared by Technical Area 4 "Digital system interfaces and protocols", 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 60958-4-4:2016.

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) 2017-01-28
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-04-28

This document, together with EN 60958-4-1:2016 and EN 60958-4-2:2016, supersedes EN 60958-4:2003.

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The text of the International Standard IEC 60958-4-4:2016 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 60958	NOTE	Harmonized in EN 60958 series.
IEC 60958-3	NOTE	Harmonized as EN 60958-3.

## 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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60268-12	-	Sound system equipment - Part 12: Application of connectors for broadcast and similar use	EN 60268-12	-
IEC 60603-7	series	Connectors for electronic equipment - Part 7: Detail specification for 8-way, unshielded, free and fixed connectors	EN 60603-7	series
IEC 60958-1 + A1	2008 2014	Digital audio interface - Part 1: General	EN 60958-1 +A1	2008 2014
IEC 60958-4-1	-	Digital audio interface - Part 4-1: Professional applications - Audio content	EN 60958-4-1	-
IEC 60958-4-2	-	Digital audio interface - Part 4-2: Professional applications - Metadata and subcode	EN 60958-4-2	-
IEC 61169-8	-	Radio-frequency connectors - Part 8: Sectional specification - RF coaxial connectors with inner diameter of outer conductor 6,5 mm (0,256 in) with bayonet lock - Characteristics impedance 50 ohms (type BNC)	EN 61169-8	-
ISO/IEC 11801	-	Information technology - Generic cabling for customer premises	-	-

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**IEC 60958-4-4**

Edition 1.0 2016-03

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**

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**Digital audio interface –  
Part 4-4: Professional applications – Physical and electrical parameters**

**Interface audionumérique –  
Partie 4-4: Applications professionnelles – Paramètres physiques et électriques**





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**IEC 60958-4-4**

Edition 1.0 2016-03

# **INTERNATIONAL STANDARD**

# **NORME INTERNATIONALE**

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**Digital audio interface –  
Part 4-4: Professional applications – Physical and electrical parameters**

**Interface audionumérique –  
Partie 4-4: Applications professionnelles – Paramètres physiques et électriques**

INTERNATIONAL  
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ICS 33.160.30

ISBN 978-2-8322-3233-0

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### DIGITAL AUDIO INTERFACE –

### Part 4-4: Professional applications – Physical and electrical parameters

#### FOREWORD

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This first edition, together with IEC 60958-4-1 and IEC 60958-4-2, cancels and replaces the IEC 60958-4 published in 2003 and its Amendment 1:2008 and constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 60958-4:2003 with its Amendment 1:2008:

- a) support for a wider range of physical media;
- b) support for a wider range of audio sampling frequencies;
- c) deprecation of “minimum implementation” of channel status data.

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

CDV	Report on voting
100/2454/CDV	100/2583/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.

A list of all parts in the IEC 60958 series, published under the general title *Digital audio interface*, 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 stability date indicated on the IEC website 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.

## INTRODUCTION

The two-channel digital audio interface has been widely used in a variety of professional audio applications that have reached beyond the vision of the original standard. In particular, applications using increased sampling frequencies and alternative physical media.

Separating the standard into independently-maintainable parts allows, for example, additional transmission media to be introduced in the future by revising IEC 60958-4-4 without affecting the other parts of the IEC 60958-4 series. The parts comprise:

- Part 4-1: Audio content: defines the format for coding audio used for the audio content. It specifies the semantics of the audio data, including the "validity" flag. It also specifies the sampling frequency by reference to AES5.
- Part 4-2: Metadata and subcode: specifies the format for information, metadata, or subcode transmitted with the audio data: principally the channel status but also user data and the auxiliary bits. Implementors will note that the current implementation options ("Standard" and "Enhanced") both require that status data be implemented correctly in compliant equipment.
- Part 4-4: Physical and electrical parameters: specifies the physical signals that convey the bit stream specified in IEC 60958-1. The transport format is intended for use with shielded twisted-pair cable of conventional design over distances of up to 100 m at frame rates of up to 50 kHz. Longer cable lengths and higher frame rates may be used, but with a rapidly increasing requirement for care in cable selection and possible receiver equalization, or the use of active repeaters. Provision is made in this standard for adapting the balanced terminals to use 75  $\Omega$  coaxial cable. Transmission by fibre-optic cable is under consideration.



## DIGITAL AUDIO INTERFACE –

### Part 4-4: Professional applications – Physical and electrical parameters

#### 1 Scope

This part of IEC 60958 specifies the physical and electrical parameters for different media. This part together with IEC 60958-1, IEC 60958-4-1, and IEC 60958-4-2 specify an interface for the serial digital transmission of two channels of periodically sampled and linearly represented digital audio data from one transmitter to one receiver.

The transport format defined in IEC 60958-1 is intended for use with shielded twisted-pair cable of conventional design over distances of up to 100 m without transmission equalization or any special equalization at the receiver and at frame rates of up to 50 kHz. Longer cable lengths and higher frame rates may be used, but with a rapidly increasing requirement for care in cable selection and possible receiver equalization or the use of active repeaters, or both. Provision is made in this standard for adapting the balanced terminals to use 75  $\Omega$  coaxial cable, and transmission by fibre-optic cable is under consideration. This standard does not cover connection to any common carrier equipment. In this interface specification, an interface for consumer use is also mentioned. The two interfaces are not identical.

#### 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 60268-12, *Sound system equipment – Part 12: Application of connectors for broadcast and similar use*

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

IEC 60958-1:2008, *Digital audio interface – Part 1: General*  
IEC 60958-1:2008/AMD1:2014

IEC 60958-4-1, *Digital audio interface – Part 4-1: Professional applications – Audio content*

IEC 60958-4-2, *Digital audio interface – Part 4-2: Professional applications – Metadata and subcode*

IEC 61169-8, *Radio-frequency connectors – Part 8: Sectional specification – RF coaxial connectors with inner diameter of outer conductor 6,5 mm (0,256 in) with bayonet lock – Characteristic impedance 50  $\Omega$  (type BNC)*

ISO/IEC 11801, *Information technology – Generic cabling for customer premises*

#### 3 Terms and definitions

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

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