

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**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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INTERNATIONAL ELECTROTECHNICAL COMMISSION

DIGITAL AUDIO INTERFACE –**Part 4-4: Professional applications –
Physical and electrical parameters**

FOREWORD

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International Standard IEC 60958-4-4 has been prepared by technical area 4: Digital system interfaces and protocols, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

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- withdrawn,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 Ω 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 Ω 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 shielded connectors*

IEC 60958-1:2008, *Digital audio interface – Part 1: General*
IEC 60958-1:2008/AM1:2014

IEC 60958-1, *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 Ω (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.