

Digital audio interface —

Part 4: Professional applications

The European Standard EN 60958-4:2000 has the status of a British Standard

ICS 33.160.30

National foreword

This British Standard is the official English language version of EN 60958-4:2000. It is identical with IEC 60958-4:1999. Together with BS EN 60958-1:2000 and BS EN 60958-3:2000, it supersedes BS EN 60958:1995 which is withdrawn.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 18, the annex ZA page and a back cover.

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European Committee for Electrotechnical Standardization
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Foreword

The text of document 100C/249/FDIS, future edition 1 of IEC 60958-4, prepared by SC 100C, Audio, video and multimedia subsystems and equipment, 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 60958-4 on 2000-01-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
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- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2003-01-01

Annexes designated "normative" are part of the body of the standard.

In this standard, annex ZA is normative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60958-4:1999 was approved by CENELEC as a European Standard without any modification.

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DIGITAL AUDIO INTERFACE –

Part 4: Professional applications

1 Scope

This International Standard describes an application of a serial, uni-directional, self-clocking interface as defined in IEC 60958-1, for the interconnection of digital audio equipment for professional applications.

The interface is primarily intended to carry monophonic or stereophonic programmes, at a 48 kHz sampling frequency and with a resolution of up to 24 bits per sample. It may alternatively be used to carry signals sampled at 32 kHz or 44,1 kHz.

The format is intended for use with shielded twisted-pair cables over distances of up to 100 m without transmission equalization or any special equalization at the receiver. Longer cable lengths may be used with cables better matched for data transmission, or with receiver equalization, or both.

In both cases, the clock references and auxiliary information are transmitted along with the audio data. Provision is also made to allow the interface to carry non-audio data.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60268-12:1987, *Sound system equipment – Part 12: Application of connectors for broadcast and similar use*

IEC 60958-1:1999, *Digital audio interface – Part 1: General*

IEC 60958-3:1999, *Digital audio interface – Part 3: Consumer applications*

ISO/IEC 646:1991, *Information technology – ISO 7-bit coded character set for information interchange*

ITU-T Recommendation J.17:1988, *Pre-emphasis used on sound-programme circuits*

ITU-T Recommendation V.11:1996, *Electrical characteristics for balanced double-current interchange circuits operating at data signalling rates up to 10 Mbit/s*

3 Interface format

3.1 General

The interface format as defined in part 1 shall be used.

For historical reasons, preambles “B”, “M” and “W”, as defined in 4.3 of part 1, shall, for use in professional applications, be referred to as “Z”, “X” and “Y”, respectively.

3.2 Validity bit

For this standard, the validity bit shall be used to indicate whether the main data field bits in the sub-frame are suitable for conversion to an analog audio signal using linear PCM coding.

4 Channel status

4.1 General

The channel status for each audio signal carries information associated with that audio signal, thus it is possible for different channel status data to be carried in the two sub-frames of the digital audio signal. Examples of information to be carried in the channel status are: length of audio sample words, number of audio channels, sampling frequency, sample address code, alphanumeric source and destination codes, and pre-emphasis.

Channel status information is organized in a 192-bit block, subdivided into 24 bytes, numbered 0 to 23 (see table 1). The first bit of each block is carried in the frame with preamble “Z”.

The individual bits of a block are numbered 0 to 191.

The primary application is indicated by channel status bit 0.

For the professional applications described here, this first channel status bit equals “1”.

For consumer digital audio equipment, this first channel status bit equals “0”, and this part of IEC 60958 does not apply.

Secondary applications may be defined within the framework of these primary applications.

4.2 Professional linear PCM application

The specific organization of the channel status data is as follows:

The significance of byte 0, bit 0 is such that a transmission from an interface conforming to IEC 60958-3 (“consumer use”) can be identified. Also, a “professional use” transmission, defined in this part of IEC 60958, can be correctly identified by a “consumer use” receiver. Connection of a “consumer use” transmitter with a “professional use” receiver or vice versa might result in unpredictable operation. Thus, the byte definitions in table 1 apply only when bit 0 = “1” and bit 1 = “0” (professional linear PCM use of the channel status block).