

Digital audio interface —

Part 1: General

The European Standard EN 60958-1:2004 has the status of a
British Standard

ICS 33.160.01

National foreword

This British Standard is the official English language version of EN 609581:2004. It is identical with IEC 60958-1:2004. It supersedes BS EN 60958-1:2000 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/100, Audio, visual and multimedia systems and equipment, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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This European Standard was approved by CENELEC on 2004-09-01. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

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

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Foreword

The text of the International Standard IEC 60958-1:2004, prepared by IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the formal vote and was approved by CENELEC as EN 60958-1 on 2004-09-01 without any modification.

This European Standard supersedes EN 60958-1:2000.

All changes introduced in this European Standard compared to EN 60958-1:2000 intend to clarify the structure and the relationship between all of the EN 60958 series families.

A brief list of changes includes:

- Annex B has been added to explain the definition given in 5.3 in relation of the families of the EN 60958 series. Subclause 5.3 is also added to this description;
- Annex C has been added to explain the relationship of the EN 60958 series families;
- Annex D has been added as an explanation for a data transmission other than linear PCM;
- Subclause 5.4 has been added to define category code application;
- a bibliography has been added.

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) 2005-09-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2007-09-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60958-1:2004 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 61883-6	NOTE	Harmonized as EN 61883-6:2002 (not modified).
IEC 61937	NOTE	Harmonized in EN 61937 series (not modified).
IEC 62105	NOTE	Harmonized as EN 62105:2002 (not modified).

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DIGITAL AUDIO INTERFACE –

Part 1: General

1 Scope

This part of IEC 60958 describes a serial, uni-directional, self-clocking interface for the interconnection of digital audio equipment for consumer and professional applications.

It specifies the basic structure of the interface. Separate documents define items specific to particular applications.

The interface is primarily intended to carry monophonic or stereophonic programmes, encoded using linear PCM and with a resolution of up to 24 bits per sample.

When used for other purposes, the interface is able to carry audio data coded other than as linear PCM coded audio samples. Provision is also made to allow the interface to carry data related to computer software or signals coded using non-linear PCM. The format specification for these applications is not part of this standard.

The interface is intended for operation at audio sampling frequencies of 32 kHz and above. Auxiliary information is transmitted along with the programme.

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 60958-3, *Digital audio Interface – Part 3: Consumer applications*

IEC 60958-4, *Digital audio Interface – Part 4: Professional applications*

3 Terms and definitions

For the purpose of all parts of the IEC 60958 series, the following terms and definitions apply.

3.1

sampling frequency

frequency of the samples representing an audio signal

NOTE When more than one signal is transmitted through the same interface, the sampling frequencies are identical.

3.2

audio sample word

value of a digital audio sample. Representation is linear in 2s complement binary form

NOTE Positive numbers correspond to positive analogue voltages at the input of the Analogue-to-Digital Converter (ADC).

3.3

auxiliary sample bit

one of the four least significant bits (LSBs) that can be assigned as auxiliary sample bits and used for auxiliary information when the number of audio sample bits in the main data field is less than or equal to 20

3.4

validity bit

bit indicating whether the main data field bits in the sub-frame (time slots 4 to 27 or 8 to 27, depending on the audio word length as described in 4.1.1) are reliable or not

3.5

channel status

carrier, in a fixed format, of information associated with each main data field channel which is decodable by any interface user

NOTE Examples of information to be carried in the channel status are: length of audio sample words, pre-emphasis, sampling frequency, time codes, alphanumeric source and destination codes.

3.6

user data

data channel provided to carry any other information

3.7

parity bit

bit provided to permit the detection of an odd number of errors resulting from malfunctions in the interface

3.8

preamble

specific patterns used for synchronization

NOTE There are three different preambles (see 4.3).

3.9

sub-frame

fixed structure used to carry information (see 4.1.1 and 4.1.2)

3.10

frame

sequence of two successive and associated sub-frames

3.11

block

group of 192 consecutive frames

NOTE The start of a block is designated by a special sub-frame preamble (see 4.3).

3.12

channel coding

coding method by which the binary digits are represented for transmission through the interface

3.13

unit interval

UI

shortest nominal time interval in the coding scheme

NOTE There are 128 UI in a sample frame.