

Digital audio — Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 —

Part 1: General

ICS 33.160.30

National foreword

This British Standard is the UK implementation of EN 61937-1:2007+A1:2011. It is identical to IEC 61937-1:2007 incorporating amendment 1:2011. It supersedes BS EN 61937-1:2007 which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by **A1** **A1**.

The UK participation in its preparation was entrusted to Technical Committee EPL/100, Audio, video and multimedia systems and equipment.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Date	Comments
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English version

**Digital audio -
Interface for non-linear PCM encoded audio bitstreams
applying IEC 60958 -
Part 1: General
(IEC 61937-1:2007)**

Audionumérique -
Interface pour les flux de bits audio
à codage MIC non linéaire
conformément à la CEI 60958 -
Partie 1: Généralités
(CEI 61937-1:2007)

Digitalton -
Schnittstelle für nichtlinear-PCM-codierte
Audio-Bitströme unter Verwendung
von IEC 60958 -
Teil 1: Allgemeines
(IEC 61937-1:2007)

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 100/1101/CDV, future edition 2 of IEC 61937-1, 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 Unique Acceptance Procedure and was approved by CENELEC as EN 61937-1 on 2007-02-01.

This European Standard supersedes EN 61937-1:2003.

This edition contains the following significant technical changes with respect to EN 61937-1:2003.

- The data-type field in Pc is expanded from bit 0-4 to bit 0-6.
- A new additional definition of Pd is specified.
- The numbers of times for symbol frequency are changed to refer to each part of EN 61937.
- The requirement for burst spacing is changed.

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) 2007-11-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2010-02-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61937-1:2007 was approved by CENELEC as a European Standard without any modification.

Foreword to amendment A1

The text of document 100/1810/CDV, future edition 2 of IEC 61937-1:2007/A1, 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 61937-1:2007/A1:2011.

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) 2012-08-16
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2014-11-16

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The text of the International Standard IEC 61937-1:2007/A1:2011 was approved by CENELEC as a European Standard without any modification.

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DIGITAL AUDIO – INTERFACE FOR NON-LINEAR PCM ENCODED AUDIO BITSTREAMS APPLYING IEC 60958 –

Part 1: General

1 Scope

This part of IEC 61937 applies to the digital audio interface using the IEC 60958 series for the conveying of non-linear PCM encoded audio bitstreams.

It describes the way in which this digital interface can be used in consumer applications.

The professional mode (AES/EBU) is not considered within the scope of this standard.

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 (all parts), *Digital audio interface*

IEC 61937 (all parts), *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958*

3 Terms, definitions, abbreviations and presentation

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

3.1 Definitions

3.1.1

audio data-burst

data-burst with an encoded audio frame as burst-payload

3.1.2

audio data-word

16-bit data word

3.1.3

audio frame

fixed number of audio samples

NOTE The number of samples in an audio frame is dependent on the particular encoding system which is used to encode the audio frame into the encoded audio frame.

3.1.4

audio gap

period in the sequence of baseband audio samples where valid samples of audio are not available

3.1.5

bitstream

non-linear PCM encoded audio source, represented in a sequence of bits

NOTE In this interface the bitstream consists of a sequence of data-bursts.

3.1.6

data-burst

packet of data, including the burst-preamble, to be transmitted across the interface

3.1.7

burst-payload

information content of the data-burst

3.1.8

burst-preamble

header for the data-burst, containing synchronization, and information about the data contained in the burst-payload

3.1.9

data-type

reference to the type of payload of the data-bursts

3.1.10

encoded audio frame

minimum decodable unit of an encoded data sequence

NOTE Each encoded audio frame is the encoded representation of a fixed number of audio samples (for each original audio channel). The number of samples which are encoded into an encoded audio frame depends on the particular encoding system which is used to encode the audio frame into the encoded audio frame.

3.1.11

idle

state in which the interface is not used to convey any sequence of data-bursts or PCM data

NOTE The channel status data is still active (bit b1 is set to '1' when further non-linear PCM encoded audio is anticipated; see Figure 7).

3.1.12

length-code

 code indicating the length of the data-burst-payload in bits, bytes or 8-bytes unit 

3.1.13

repetition period

period between the reference point of the current data-burst and the reference point of the immediately following data-burst of the same data-type

3.1.14

sampling frequency

sampling frequency of the encoded PCM audio samples (i.e. before encoding and after decoding)

3.1.15

sampling period

time period related to the sampling frequency of the PCM audio samples, represented in the encoded bitstream

3.1.16

stuffing

occupying the unused data capacity of the interface