IEC 61937-5

Edition 2.1 2019-01

CONSOLIDATED VERSION

colour inside

Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 –
Part 5: Non-linear PCM bitstreams according to the DTS (Digital Theater Systems) format(s)



IEC 61937-5:2006-01+AMD1:2019-01 CSV(en)



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

Part 5: Non-linear PCM bitstreams according to the DTS (Digital Theater Systems) format(s)

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This Consolidated version of IEC 61937-5 bears the edition number 2.1. It consists of the second edition (2006-01) [documents 100/974/CDV and 100/1055/RVC] and its amendment 1 (2019-01) [documents 100/3101/CDV and 100/3163/RVC]. The technical content is identical to the base edition and its amendment.

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough

red text. A separate Final version with all changes accepted is available in this publication.

International Standard IEC 61937-5 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 second edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition.

a) References to the company name Digital Theater Systems have been changed to DTS which is consistent with the official change of the company name.
b) DTS type IV has been added to Table 1 and 5.3.4 describing type IV has been added.
c) Annex A, which provides examples of the use of the repetition period parameter introduced in subclause 5.3.4, has been added.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

IEC 61937 consists of the following parts, under the general title *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958:*

Part 1: General
Part 2: Burst-info
Part 3: Non-linear PCM bitstreams according to the AC-3 format
Part 4: Non-linear PCM bistreams according to the MPEG audio formats
Part 5: Non-linear PCM bitstreams according to the DTS (Digital Theater Systems) format(s)
Part 6: Non-linear PCM bitstreams according to the ATRAC, ATRAC2/3 and ATRAC-X formats
Part 8: Non-linear PCM bitstreams according to the Windows Media Audio Professional[1]

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site 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
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A bilingual version may be issued at a later date.

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[1] To be published.

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

Part 5: Non-linear PCM bitstreams according to the (Digital Theater Systems) DTS format(s)

1 Scope

This part of IEC 61937 describes audio bitstreams encoded according to the Digital Theater Systems (DTS) format data-types I, II, III, and IV.

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

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

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

IEC 61937-1, *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 1: General*

IEC 61937-2*, Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 2: Burst Information*

3 Terms, definitions, abbreviations and presentation convention

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

3.1 Definitions

3.1.1
latency
delay time of an external audio decoder to decode a DTS data-burst, defined as the sum of two values of the receiving delay time and the decoding delay time

3.2 Abbreviations

IEC	International Electrotechnical Commission
ISO/IEC MPEG	The Moving Pictures Expert Group, a joint committee of ISO and IEC

3.3 Presentation convention

F872h Value ‘F872’ in hexadecimal format

4 Mapping of the audio bitstream on to IEC 61937-1

The coding of the bitstream and data-burst is in accordance with IEC 61937-1 and 61937-2.

4.1 DTS burst-info

The 16-bit burst-info contains information about the data which will be found in the data-burst.

Table 1 – Fields of burst-info

Bits of Pc	Value	Contents	Reference point R	Repetition period of data-burst in IEC 60958 frames
0 – 4		Data-type		
	0 – 10	According to IEC 61937		
	11	DTS type I	bit 0 of Pa	512
	12	DTS type II	bit 0 of Pa	1 024
	13	DTS type III	bit 0 of Pa	2 048
	14 – 16	According to IEC 61937		
	17	DTS type IV		Dependent on bits 8 – 10
	14 – 31	According to IEC 61937	bit 0 of Pa	
5,6		Reserved		
7		According to IEC 61937		
8 – 10		Reserved for DTS Types I, II and III, ~~For the~~ Repetition period for DTS Type IV, see Table 6		
11 – 12	0 – 3	~~Reserved~~ Profile		
13 – 15		According to IEC 61937		

5 Format of DTS data-bursts

This clause specifies the audio data-bursts DTS type I, DTS type II, DTS type III and DTS type IV. Specific properties such as reference points, repetition period, the method of filling stream gaps, and decoding latency are specified for each data-type.

5.1 General

The decoding latency (or delay), indicated for the data-types, should be used by the transmitter to schedule data-bursts as necessary to establish synchronization between picture and decoded audio.

5.2 Pause data-burst

Pause data-burst for DTS type I, DTS type II, DTS type III and DTS type IV is given in Table 2.