

Digital audio interface —

Part 3: Consumer applications

ICS 33.160.01

National foreword

This British Standard is the UK implementation of EN 60958-3:2006+A2:2015. It is identical to IEC 60958-3:2006, incorporating amendment 1:2009 and amendment 2:2015. It supersedes BS EN 60958-3:2006+A1:2010, which will be withdrawn on 23 July 2018.

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 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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Digital audio interface
Part 3: Consumer applications
(IEC 60958-3:2006)

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(CEI 60958-3:2006)

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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.

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CENELEC

European Committee for Electrotechnical Standardization
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Foreword

The text of the International Standard IEC 60958-3:2006, 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 60958-3 on 2006-10-01 without any modification.

This European Standard supersedes EN 60958-3:2003.

It includes the following significant technical changes :

- Electrical and optical requirements are removed from EN 60958-3; they will be specified in the next edition of EN 60958-1.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
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- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2009-10-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60958-3:2006 was approved by CENELEC as a European Standard without any modification.

Foreword to amendment A1

The text of document 100/1513/CDV, future amendment 1 to IEC 60958-3:2006, 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 was approved by CENELEC as amendment A1 to EN 60958-3:2006 on 2009-12-01.

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Endorsement notice

The text of amendment 1:2009 to the International Standard IEC 60958-3:2006 was approved by CENELEC as an amendment to the European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

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Foreword to amendment A2

The text of document 100/2464/FDIS, future IEC 60958-3:2006/A2, prepared by IEC/TC 100, "Audio, video and multimedia systems and equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60958-3:2006/A2:2015.

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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-07-23

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Endorsement notice

The text of the International Standard IEC 60958-3:2006/A2:2015 was approved by CENELEC as a European Standard without any modification.

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DIGITAL AUDIO INTERFACE –

Part 3: Consumer applications

1 Scope

This part of IEC 60958 specifies the consumer application of the interface for the inter-connection of digital audio equipment defined in IEC 60958-1.

NOTE When used in a consumer digital processing environment, the interface is primarily intended to carry stereophonic programmes, with a resolution of up to 20 bits per sample, an extension to 24 bits per sample being possible.

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 60841:1988, *Audio recording – PCM encoder/decoder system*

IEC 60908:1999, *Audio recording – Compact disc digital audio system*

IEC 60958-1:2004, *Digital audio interface – Part 1: General*

IEC 61119-1:1992, *Digital audio tape cassette system (DAT) – Part 1: Dimensions and characteristics*

IEC 61119-6:1992, *Digital audio tape cassette system (DAT) – Part 6: Serial copy management system*

 IEC 62574:2011, *Audio, video and multimedia systems – General channel assignment of multichannel audio* 

IEEE 1394:2004, *IEEE standard for high-performance serial bus bridges*

 ISO/IEC 23003-1, *Information technology – MPEG audio technologies – Part 1: MPEG Surround* 

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60958-1 apply.

4 Interface format

The interface format as defined in IEC 60958-1 shall be used.

Unless otherwise specified in the annexes, the following specification is applicable.

- Audio sample word has a length of 20 bits/sample. The auxiliary sample bits are an optional expansion of the audio sample, if not used = “0”.
- User data is not used, all bits = “0”.
- Channel status is identical for both subframes of the interface, with the exception of the channel number, if that is not equal to zero.

5 Channel status

5.1 General

For every subframe, the channel status bit provides information related to the audio channel that is carried in that same subframe.

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 channel status block is carried in the frame with preamble “B”.

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

The primary application is indicated by channel status bit 0.

As stated in IEC 60958-1, for the consumer digital audio applications described in this standard, this first channel status bit equals “0”.

NOTE As stated in IEC 60958-1, for professional application this first channel status bit equals “1”.

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

5.2 Application

5.2.1 Channel status general format

For each channel, the channel status block provides the information described in this clause and summarized in Table 1.

Table 1– Channel status general format for consumer use

Byte

0		a = "0"	b	c	d			Mode	
bit		0	1	2	3	4	5	6	7
1									
bit		8	9	10	11	12	13	14	15
2									
bit		16	17	18	19	20	21	22	23
3									
bit		24	25	26	27	28	29	30	31
4									
bit		32	33	34	35	36	37	38	39
5									
bit		40	41	42	43	44	45	46	47
6									
bit		48	49	50	51	52	53	54	55
7									
bit		56	57	58	59	60	61	62	63
8									
bit		64	65	66	67	68	69	70	71
9									
bit		72	73	74	75	76	77	78	79
10									
bit		80	81	82	83	84	85	86	87
11									
bit		88	89	90	91	92	93	94	95
12									
bit		96	97	98	99	100	101	102	103
13									
bit		104	105	106	107	108	109	110	111
14									
bit		112	113	114	115	116	117	118	119
15									
bit		120	121	122	123	124	125	126	127
16									
bit		128	129	130	131	132	133	134	135
17									
bit		136	137	138	139	140	141	142	143
18									
bit		144	145	146	147	148	149	150	151
19									
bit		152	153	154	155	156	157	158	159
20									
bit		160	161	162	163	164	165	166	167
21									
Bit		168	169	170	171	172	173	174	175
22									
Bit		176	177	178	179	180	181	182	183
23									
Bit		184	185	186	187	188	189	190	191
a: use of channel status block b: linear PCM identification c: copyright information d: additional format information									

Byte 0: General control and mode information

Control:

Bit 0	“0”	Consumer use of channel status block (Notes 1 and 2)
-------	-----	--

NOTE 1 The significance of byte 0, bit 0 is such that transmission from an interface conforming to IEC 60958-4 can be identified.

Bit 1	“0”	Audio sample word represents linear PCM samples (Note 2)
	“1”	Audio sample word used for other purposes

NOTE 2 The functions of channel status bits 0 and 1 are defined in IEC 60958-1.

Bit 2	“0”	Software for which copyright is asserted (Note 3)
	“1”	Software for which no copyright is asserted

NOTE 3 Bit 2 is referred to as the “Cp-bit”. It should indicate whether copyright protection has been asserted.

The copyright status may be unknown for certain applications. The above interpretation is therefore not valid in combination with some category codes (as indicated in the annex associated with the category code). The Cp-bit can alternate between 0 and 1 at a rate between 4 Hz and 10 Hz (see Annex A).

Bits 3 to 5	Additional format information, meaning depends on bit 1.
----------------	--

When bit 1 = “0”, linear PCM audio mode:

Bit	3 4 5	
State	“0 0 0”	2 audio channels without pre-emphasis
	“1 0 0”	2 audio channels with 50 μ s / 15 μ s pre-emphasis
	“0 1 0”	Reserved (for 2 audio channels with pre-emphasis)
	“1 1 0”	Reserved (for 2 audio channels with pre-emphasis)

All other states of bits 3 to 5 are reserved and shall not be used until further defined.

NOTE 4 The single and dual channel operating modes are defined with the frame format in IEC 60958-1.

When bit 1 = “1”, other than linear PCM applications:

Bit	3 4 5	
State	“0 0 0”	Default state for applications other than linear PCM

All other states of bits 3 to 5 are reserved and shall not be used until further defined.

Bits 6 and 7	Channel status mode, indicates one of four possible channel status formats (bytes 1 to 23). There are four possible modes for each of the states of bit 1.
-----------------	--

Bit	6 7	
State	“0 0”	Mode 0, refer to 5.2.2

All other states of bits 6 and 7 are reserved and shall not be used until further defined.

The contents of bits 8 to 191 depend on the mode as indicated by bits 6 and 7. If not defined otherwise, the default value is “0”.

5.2.2 Mode 0 channel status format for digital audio equipment for consumer use

When the audio sample word represents linear PCM and the channel status mode is mode 0, the channel status format shown in Table 2 should be applied.

Table 2 – Mode 0 channel status format for consumer use

Byte									
0		a = "0"	b = "0"	c	d		Mode = "0 0"		
1	bit	0	1	2	3	4	5	6	7
		Category code							
2	bit	8	9	10	11	12	13	14	15
		Source number				Channel number			
3	bit	16	17	18	19	20	21	22	23
		Sampling frequency				Clock accuracy		Sampling frequency extension	
4	bit	24	25	26	27	28	29	30	31
		Word length				Original sampling frequency			
5	bit	32	33	34	35	36	37	38	39
		CGMS-A		CGMS-A validity		Audio sampling frequency coefficient			
A2	bit	40	41	42	43	44	45	46	47
6		Information hidden in PCM signal	General channel assignment channel number for A channel						General channel assignment channel number for B channel
7	bit	48	49	50	51	52	53	54	55
		General channel assignment channel number for B channel							
8	bit	56	57	58	59	60	61	62	63
9	bit	64	65	66	67	68	69	70	71
10	bit	72	73	74	75	76	77	78	79
11	bit	80	81	82	83	84	85	86	87
12	bit	88	89	90	91	92	93	94	95
13	bit	96	97	98	99	100	101	102	103
14	bit	104	105	106	107	108	109	110	111
15	bit	112	113	114	115	116	117	118	119
16	bit	120	121	122	123	124	125	126	127
17	bit	128	129	130	131	132	133	134	135
18	bit	136	137	138	139	140	141	142	143
19	bit	144	145	146	147	148	149	150	151
20	bit	152	153	154	155	156	157	158	159
21	bit	160	161	162	163	164	165	166	167
22	bit	168	169	170	171	172	173	174	175
23	bit	176	177	178	179	180	181	182	183
	bit	184	185	186	187	188	189	190	191
a: use of channel status block. b: linear PCM identification. c: copyright information. d: additional format information.									

Document

a: use of channel status block.
b: linear PCM identification.

c: copyright information.
d: additional format information.

Byte 0 as defined in 5.2.1, with

Bit 1	"0"	Audio sample word represents linear PCM samples
Bits 6 to 7	"0 0"	Mode 0

Byte 1: Category code

The category code indicates the kind of equipment that generates the digital audio interface signal. See the relevant annexes for the assignments. Bit 8 = LSB, bit 15 = MSB.

Byte 2: Source and channel number

Bits 16 to 19 Source number, bit 16 = LSB, bit 19 = MSB

Bit 16 17 18 19

State	"0 0 0 0"	Do not take into account
	"1 0 0 0"	1
	"0 1 0 0"	2
	"1 1 0 0"	3
		
	"1 1 1 1"	15

Bits 20 to 23 Channel number (audio channel), bit 20 = LSB, bit 23 = MSB.

Bit 20 21 22 23

State	"0 0 0 0"	Do not take into account.
	"1 0 0 0"	(left channel for stereo channel format)
	"0 1 0 0"	(right channel for stereo channel format)
	"1 1 0 0"	
		
	"1 1 1 1"	

NOTE 1 The single and dual channel operating modes are defined with the frame format in IEC 60958-1.

Byte 3: Sampling frequency and clock accuracy

Bits 24 to 27 Sampling frequency

Bit 24 25 26 27

State	"0 0 1 0"	22,05 kHz
	"0 0 0 0"	44,1 kHz
	"0 0 0 1"	88,2 kHz
	"0 0 1 1"	176,4 kHz
		
	"0 1 1 0"	24 kHz
	"0 1 0 0"	48 kHz
	"0 1 0 1"	96 kHz
	"0 1 1 1"	192 kHz
		
	"1 1 0 0"	32 kHz
	"1 0 0 0"	Sampling frequency not indicated
	"1 0 0 1"	768 kHz

All other combinations are reserved and shall not be used until further defined.

Bits 28 to 29	Clock accuracy.	
Bit	28	29
State	"0 0"	Level II
	"1 0"	Level I
	"0 1"	Level III
	"1 1"	Interface frame rate not matched to sampling frequency.

A1 Bits 30 to 31	Sampling frequency extension with sampling frequency bits 24 to 27	
Bit	24	25 26 27 30 31
State	"1 0 1 0 0 0"	384 kHz
	"1 0 1 0 1 0"	1 536 kHz
	"1 0 1 0 1 1"	1 024 kHz
	"1 0 1 1 0 0"	352,8 kHz
	"1 0 1 1 0 1"	705,6 kHz
	"1 0 1 1 1 0"	1 411,2 kHz
	"1 1 0 1 0 0"	64 kHz
	"1 1 0 1 0 1"	128 kHz
	"1 1 0 1 1 0"	256 kHz
	"1 1 0 1 1 1"	512 kHz

NOTE 2 The sampling frequency over 192 kHz is not actual. It represents frame rate for compressed audio transmission, and it is used for high bit rate transmission using IEC 60958 protocol. For example, IEC 61883-6 can transmit a high bit rate of IEC 61937 using IEC 60958 conformant format defined in IEC 61883-6. **A1**

Byte 4: Word length and original sampling frequency

Bit 32	"0"	Maximum audio sample word length is 20 bits
	"1"	Maximum audio sample word length is 24 bits

Bits 33 to 35	Sample word length		
Bit	33	34	35
	Audio sample word length if maximum length is 24 bits as indicated by bit 32		Audio sample word length if maximum length is 20 bits as indicated by bit 32
State	"0 0 0"	Word length not indicated (default)	Word length not indicated (default)
	"1 0 0"	20 bits	16 bits
	"0 1 0"	22 bits	18 bits
	"0 0 1"	23 bits	19 bits
	"1 0 1"	24 bits	20 bits
	"0 1 1"	21 bits	17 bits

All other combinations are reserved and shall not be used until further defined.

NOTE 3 The first edition of IEC 60958 had bits 32 to 35 reserved and set to zero. Therefore, the all zero state for these bits on a received signal may be an indicator that the word length indication has not been implemented.

A1 Bits 36 to 39	Original sampling frequency	
Bit	36	37 38 39
State	"1 1 1 1"	44,1 kHz
	"1 1 1 0"	88,2 kHz
	"1 1 0 1"	22,05 kHz
	"1 1 0 0"	176,4 kHz
	"1 0 1 1"	48 kHz
	"1 0 1 0"	96 kHz
	"1 0 0 1"	24 kHz
	"1 0 0 0"	192 kHz
	"0 1 1 1"	128 kHz
	"0 1 1 0"	8 kHz
	"0 1 0 1"	11,025 kHz
	"0 1 0 0"	12 kHz
	"0 0 1 1"	32 kHz
	"0 0 1 0"	64 kHz
	"0 0 0 1"	16 kHz
	"0 0 0 0"	Original sampling frequency not indicated (default)

Notes 4 and 5 remain applicable. **A1**

Byte 5: CGMS-A

Bits 40 to 41	CGMS-A	
Bit	40	41
State	"0 0"	Copying is permitted without restriction
	"0 1"	Condition not be used
	"1 0"	One generation of copies may be made
	"1 1"	No copying is permitted

A1 Bit 42	CGMS-A validity	
Bit	42	
State	"0"	No indication
	"1"	CGMS-A valid

Bits 44 to 47	Audio sampling frequency coefficient	
Bit	44	45 46 47
State	"0 0 0 0"	No indication
	"0 0 0 1"	Equal to transmission sampling frequency
	"0 0 1 0"	1/2
	"0 0 1 1"	1/4
	"0 1 0 0"	1/8
	"0 1 0 1"	1/16
	"0 1 1 0"	1/32
	"0 1 1 1"	Reserved
	"1 0 0 0"	Reserved
	"1 0 0 1"	Reserved
	"1 0 1 0"	Reserved
	"1 0 1 1"	x32
	"1 1 0 0"	x16
	"1 1 0 1"	x8
	"1 1 1 0"	x4
	"1 1 1 1"	x2 A1

NOTE 6 CGMS-A information from other IEC standards (for example, IEC 61880) can be carried.

A2 *Byte 6 and byte 7:* Information hidden in PCM and general channel assignment channel number **A2**

A1 Bit 48	Information hidden in PCM signal	
Bit	48	
State	"0"	No indication
	"1"	Additional information in LSB
A2 Bits 49 to 53	General channel assignment channel number for A channel	
Bit	49 50 51 52 53 54	
State	"0 0 0 0 0 0"	Channel number 1
	"1 0 0 0 0 0"	Channel number 2
	⋮	
	"1 1 1 1 1 0"	Channel number 32
Bit 54 to 58	General channel assignment channel number for B channel	
Bit	55 56 57 58 59 60	
State	"0 0 0 0 0 0"	Channel number 1
	"1 0 0 0 0 0"	Channel number 2
	⋮	
	"1 1 1 1 1 0"	Channel number 32 A2

NOTE 7 Bit 48 refers to information within the audio sample word, not in the AUX bits.

NOTE 8 When bit 48 is set to 1, processing of the audio signal (such as redithering, sample rate conversion, and change in level) should be avoided. A receiver may also use this state as a hint that it should look for extra information (such as MPEG Surround transmitted over PCM channels as specified in ISO/IEC 23003-1, see Annex U) in the low bits of the signal. **A1**

A2 IEC 62574 specifies the general channel assignment. The channel number 1 to 32 assignments are specified in Table 1 of IEC 62574:2011 **A2**

5.3 Copyright management guidelines for consumer application of the digital audio interface

5.3.1 General

Category codes are used for all consumer products that are capable of supplying a digital signal to consumer digital audio recorders, except for products that are fully transparent from input to output. A category code of a product is defined as a live function to make a source data. If products have the capability to play plural recorded media that are defined in different categories, the category code of the product should be defined as a playing medium.

These category codes have been grouped by general function of the product. This makes it possible to take into account future digital recording products not yet defined in detail. Such a product then deals with the group code under a general rule. These rules define whether a digital recorder is enabled to record a copyright-protected digital signal.

Unless otherwise specified, any consumer equipment capable of transferring digital audio information from an input terminal to an output terminal, if not fully transparent and regardless of the delay or kind of transformation of the audio content of the signal, shall copy channel status bits 0, 1, 3, 4, 5, 6 and 7 from the source. Bit 2 shall be copied from the source, unless otherwise specified in the annexes.

Bit 15 is referred to as the “L-bit”. It indicates the “generation status” of the digital audio signal.

“Generation status” means:

- whether the signal emanates from a source that has been produced or published or authorized by the rights owner of the material, such as commercially released pre-recorded compact discs or DAT tapes or a digital broadcast (referred to herein as “original”) and for which copyright has been asserted; or
- whether the signal emanates from a recording made from such “original” material (i.e. “a home-copy of generation 1 or higher”).

Generally the L-bit is specified as:

Bit 15	“0”	No indication
	“1”	Commercially released pre-recorded software

For historical reasons, the reverse situation is valid for the signals originating from

- laser optical products (category code “100 XXXXL”);
- broadcast reception (category codes “001 XXXXL” and “011 1XXXL”).

For these category codes the L-bit indicates:

Bit 15	“0”	Commercially released pre-recorded software
	“1”	No indication

The generation status may be unknown for certain applications. The above interpretation is therefore not valid in combination with some category codes such as

- general (category code “000 00000”);
- analogue/digital converters for analogue signals without copyright information (category code “011 00XXXL”).

5.3.2 Category code groups

5.3.2.1 The category code groups are defined in Table 3.

Table 3 – Category code groups

Bits 8 to 15	Category
“000 00000”	General. Used temporarily
“100 XXXXL”	Laser optical products
“010 XXXXL”	Digital/digital converters and signal processing products
“110 XXXXL”	Magnetic tape or disc based products
“001 XXXXL” and “011 1XXXL”	Broadcast reception of digitally encoded audio signals with or without video signals
“101 XXXXL”	Musical instruments, microphones and other sources without copyright information
“011 00XXXL”	Analogue/digital converters for analogue signals without copyright information
“011 01XXXL”	Analogue/digital converters for analogue signals which include copyright information in the form of “Cp-bit and L-bit status”
“000 1XXXL”	Solid state memory based products
“000 0001L”	Experimental products not for commercial sale, and other products of these groups and/or experimental products
“111 XXXXL”	Not defined. Reserved
“000 0XXXL”	Not defined. Reserved, except “000 00000” and “000 0001L”

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5.3.2.2 Within a group a further indication of the kind of source is given.

5.3.2.2.1 For the general category code ("000 00000") the following applies:

- used temporarily;
- applied specifically for digital audio broadcast reception with or without a video signal, for example, digital satellite reception in Japan in the case where no copyright information is transmitted (see also Annex H);
- for the group of laser optical products (category code = "100 XXXXL"), the category codes are defined in Table 4.

Table 4 – Category code groups for laser optical products

Bits 8 to 15	Category
"100 00000"	Compact-disc digital audio signal compatible with IEC 60908 (see Annex A)
"100 1000L"	Laser optical digital audio systems for which no other category code is defined (see Annex D)
"100 1001L"	Mini-disc system (see Annex N)
"100 1100L"	Digital versatile disc (DVD) (see Annex P)
"100 1111L"	Other products of this category
"100 others"	Reserved

5.3.2.2.2 For the group of digital/digital converters and signal-processing products (category code = "010 XXXXL"), the category codes are defined in Table 5.

Table 5 – Category code groups for digital/digital converter and signal-processing products

Bits 8 to 15	Category
"010 0000L"	PCM encoder/decoder (see Annex B)
"010 0100L"	Digital signal mixer (see Annex E)
"010 1100L"	Sampling rate converter (see Annex F)
"010 0010L"	Digital sound sampler (see Annex G)
"010 1010L"	Digital sound processor (see Annex O)
"010 1111L"	Other products of this category
"010 others"	Reserved

5.3.2.2.3 For the group of magnetic tape or magnetic disc based products (category code = "110 XXXXL"), the category codes are defined in Table 6.

Table 6 – Category code groups for magnetic tape or magnetic disc based products

Bits 8 to 15	Category
"110 0000L"	DAT (see annex C)
"110 1000L"	Video tape recorder with digital sound
"110 0001L"	Digital compact cassette (see Annex M)
"110 1100L"	Magnetic disc digital audio system (see Annex R)
"110 1111L"	Other products of this category
"110 others"	Reserved

- 5.3.2.2.4** For the group of broadcast reception of digitally encoded audio with/without video signals (category code = “001 XXXXL” or “011 1XXXL”), the category codes are defined in Table 7.

Table 7 – Category code groups for broadcast reception of digitally encoded audio with/without video signals

Bits 8 to 15	Category
“001 0000L”	Digital audio broadcast signal with or without a video signal (Japan) (see Annex H)
“001 1000L”	Digital audio broadcast signal with or without a video signal (Europe) (see Annex J)
“001 0011L”	Digital audio broadcast signal with or without a video signal (USA) (see Annex K)
“001 0001L”	Electronic software delivery (see Annex L)
“001 0010L”	Used by another standard (see note)
“001 1111L”	Other products of this category
“001 others”	Reserved
“011 1XXXL”	Reserved
NOTE The code “001 0010L” is under consideration for use in connection with IEC 62105.	

- 5.3.2.2.5** For the group of musical instruments, microphones and other sources that create original sound (category code = “101 XXXXL”), the category codes are defined in Table 8.

Table 8 – Category code groups for musical instruments, microphones and other sources that create original sound

Bits 8 to 15	Category
“101 0000L”	Synthesizer
“101 1000L”	Microphone
“101 1111L”	Other products of this category
“101 others”	Reserved

- 5.3.2.2.6** For the group of analogue/digital converters for analogue signals without copyright information (category code = “011 00XXXL”), the category codes are defined in Table 9.

Table 9 – Category code groups for A/D converters for analogue signals without copyright information

Bits 8 to 15	Category
“011 0000L”	A/D converter
“011 0011L”	Other products of this category
“011 00 others”	Reserved

- 5.3.2.2.7** For the group of analogue/digital converters for analogue signals which include copyright information in the form of “Cp-bit and L-bit status” (category code = “011 01XXL”), the category codes are defined in Table 10.

Table 10 – Category code groups for A/D converters for analogue signals with copyright information

Bits 8 to 15	Category
“011 0100L”	A/D converter
“011 0111L”	Other products of this category
“011 01 others”	Reserved

- 5.3.2.2.8** For the group of solid state memory based products (category code = “000 1XXXL”), the category codes are defined in Table 11.

Table 11 – Category code groups for solid state memory based products

Bits 8 to 15	Category
“000 1000L”	Digital audio recorder and player using solid state memory
“000 1111L”	Other products of this category
“000 1 others”	Reserved

- 5.3.2.2.9** For experimental products not for commercial sale (category code = “000 0001L”), the following definition applies.

New products for which a category code and a category group is not yet defined or for which circuitry to signal the appropriate category is not yet available.

6 User data

6.1 General

The default value of the user bits is logical “0”.

For interchangeability of equipment, it is strongly recommended that the general user data format described below be used for consumer applications of the user data.

6.2 Application

6.2.1 User data bitstream

The user data bits from every subframe in a frame combine so that there is just one user data bitstream for each interface.

6.2.2 User data message structure

A message consists of information units (IUs). An IU consists of one start bit (logical value “1”) followed by seven information bits.

The eight bits of an IU are also referred to as the P, Q, R, S, T, U, V and W bits. IUs in a message are separated by up to and including eight bits with a logical value “0”. The nominal number of bits with logical value “0” between IUs is four. Messages are separated by more than eight bits with a logical value “0”. An example of this structure is shown in Figure 1.