

<b>STN</b>	<b>Digitálne zvukové rozhranie Časť 3: Spotrebné aplikácie</b>	<b>STN EN IEC 60958-3</b>  36 8303
------------	--	--

Digital audio interface - Part 3: Consumer applications

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/21

Obsahuje: EN IEC 60958-3:2021, IEC 60958-3:2021

Oznámením tejto normy sa od 07.10.2024 ruší  
STN EN 60958-3 (36 8303) zo septembra 2007

**134003**

EUROPEAN STANDARD

**EN IEC 60958-3**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2021

ICS 33.160.01

Supersedes EN 60958-3:2006 and all of its amendments  
and corrigenda (if any)

English Version

**Digital audio interface - Part 3: Consumer applications  
(IEC 60958-3:2021)**Interface audionumérique - Partie 3: Applications grand  
public  
(IEC 60958-3:2021)Digitalton-Schnittstelle - Teil 3: Allgemeingebrauch  
(IEC 60958-3:2021)

This European Standard was approved by CENELEC on 2021-10-07. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## EN IEC 60958-3:2021 (E)

### European foreword

The text of document 100/3543/CDV, future edition 4 of IEC 60958-3, 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 IEC 60958-3:2021.

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) 2022-07-07
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-10-07

This document supersedes EN 60958-3:2006 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

### Endorsement notice

The text of the International Standard IEC 60958-3:2021 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 60841	NOTE Harmonized as HD 544 S1
IEC 60908	NOTE Harmonized as EN 60908
IEC 61119-1	NOTE Harmonized as EN 61119-1
IEC 61119-6	NOTE Harmonized as EN 61119-6
IEC 61880:1998	NOTE Harmonized as EN 61880 <sup>1</sup> (not modified)
IEC 61883-6:2014	NOTE Harmonized as EN 61883-6:2014 (not modified)
IEC 61937 (series)	NOTE Harmonized as EN 61937 (series)

---

<sup>1</sup> To be published. Stage at time of publication: prEN 61880:2021.

## **Annex ZA** (normative)

### **Normative references to international publications with their corresponding European publications**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60958-1	-	Digital audio interface - Part 1: General	EN IEC 60958-1	-
IEC 60958-5	-	Digital audio interface - Part 5: Consumer application enhancement	EN IEC 60958-5	-



**IEC 60958-3**

Edition 4.0 2021-09

# **INTERNATIONAL STANDARD**

---

**Digital audio interface –  
Part 3: Consumer applications**





**THIS PUBLICATION IS COPYRIGHT PROTECTED**  
**Copyright © 2021 IEC, Geneva, Switzerland**

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

**About the IEC**

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

**About IEC publications**

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

**IEC publications search - [webstore.iec.ch/advsearchform](http://webstore.iec.ch/advsearchform)**

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

**IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)**

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

**IEC Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)**

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [sales@iec.ch](mailto:sales@iec.ch).

**IEC online collection - [oc.iec.ch](http://oc.iec.ch)**

Discover our powerful search engine and read freely all the publications previews. With a subscription you will always have access to up to date content tailored to your needs.

**Electropedia - [www.electropedia.org](http://www.electropedia.org)**

The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 18 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.



**IEC 60958-3**

Edition 4.0 2021-09

# **INTERNATIONAL STANDARD**

---

**Digital audio interface –  
Part 3: Consumer applications**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

---

ICS 33.160.01

ISBN 978-2-8322-1017-1

**Warning! Make sure that you obtained this publication from an authorized distributor.**

## CONTENTS

FOREWORD.....	7
1 Scope.....	9
2 Normative references.....	9
3 Terms and definitions .....	9
4 Interface format .....	9
5 Channel status .....	9
5.1 General.....	9
5.2 Application.....	10
5.2.1 Channel status general format.....	10
5.2.2 Mode 0 channel status format for digital audio equipment for consumer use .....	13
5.3 Copyright management guidelines for consumer application of the digital audio interface .....	18
5.3.1 General .....	18
5.3.2 Category code groups .....	19
6 User data .....	22
6.1 General.....	22
6.2 Application.....	22
6.2.1 User data bitstream.....	22
6.2.2 User data message structure.....	22
6.2.3 Equipment classification.....	23
6.2.4 User data message length and contents .....	24
6.3 Information for synchronization.....	26
6.3.1 General .....	26
6.3.2 SMPTE time code information .....	26
6.3.3 Latency information.....	27
6.3.4 Loudness information.....	28
Annex A (normative) Application of the digital audio interface in the compact disc digital audio system .....	30
A.1 Overview.....	30
A.2 General: application-specific details.....	30
A.3 Channel status: application-specific details.....	30
A.4 User data: application-specific details.....	30
Annex B (normative) Application of the digital interface in the 2-channel PCM encoder/decoder.....	32
B.1 Overview.....	32
B.2 General: application-specific details.....	32
B.3 Channel status: application-specific details.....	32
B.4 User data: application-specific details.....	32
Annex C (normative) Application of the digital interface in the 2-channel digital audio tape recorder in the consumer mode .....	33
C.1 Overview.....	33
C.2 General: application-specific details.....	33
C.3 Channel status: application-specific details.....	33
C.4 User data: application-specific details.....	34
Annex D (normative) Application of the digital interface in laser optical digital audio systems for which no other category code is defined .....	37



D.1	Overview.....	37
D.2	General: application-specific details.....	37
D.3	Channel status: application-specific details.....	37
D.4	User data: application-specific details.....	37
Annex E (normative) Application of the digital interface in a digital audio mixer in the consumer mode.....		38
E.1	Overview.....	38
E.2	General: application-specific details.....	38
E.3	Channel status: application-specific details.....	38
E.4	User data: application specific details.....	38
Annex F (normative) Application of the digital interface with a sampling rate converter in the consumer mode.....		39
F.1	Overview.....	39
F.2	General: application-specific details.....	39
F.3	Channel status: application-specific details.....	39
F.4	User data: application-specific details.....	39
Annex G (normative) Application of the digital interface with a digital sound sampler in the consumer mode.....		40
G.1	Overview.....	40
G.2	General: application-specific details.....	40
G.3	Channel status: application-specific details.....	40
G.4	User data: application specific details.....	40
Annex H (normative) Application of the digital interface in a digital broadcast receiver (Japan) in the consumer mode.....		41
H.1	Overview.....	41
H.2	General: application-specific details.....	41
H.3	Channel status: application-specific details.....	41
H.4	User data: application-specific details.....	41
Annex I (normative) Application of the digital interface in a digital broadcast receiver (Europe) in the consumer mode.....		42
I.1	Overview.....	42
I.2	General: application-specific details.....	42
I.3	Channel status: application-specific details.....	42
I.4	User data: application-specific details.....	42
Annex J (normative) Application of the digital interface in a digital broadcast receiver (USA) in the consumer mode.....		43
J.1	Overview.....	43
J.2	General: application-specific details.....	43
J.3	Channel status: application-specific details.....	43
J.4	User data: application-specific details.....	43
Annex K (normative) Application of the digital interface for electronic software delivery in the consumer mode.....		44
K.1	Overview.....	44
K.2	General: application-specific details.....	44
K.3	Channel status: application-specific details.....	44
K.4	User data: application-specific details.....	44
Annex L (normative) Application of the digital interface in the digital compact cassette system in the consumer mode.....		45
L.1	Overview.....	45
L.2	General: application-specific details.....	45

L.3	Channel status: application-specific details .....	45
L.4	User data: application-specific details .....	45
L.4.1	General .....	45
L.4.2	Marker mode .....	45
L.4.3	Extended mode .....	46
Annex M (normative)	Application of the digital interface in the mini-disc system in the consumer mode .....	50
M.1	Overview .....	50
M.2	General: application-specific details .....	50
M.3	Channel status: application-specific details .....	50
M.4	User data: application-specific details .....	50
Annex N (normative)	Application of the digital interface in a digital sound processor in the consumer mode .....	51
N.1	Overview .....	51
N.2	General: application-specific details .....	51
N.3	Channel status: application-specific details .....	51
N.4	User data: application-specific details .....	51
Annex O (normative)	Application of the digital interface in the digital versatile disc system (DVD) in the consumer mode .....	52
O.1	Overview .....	52
O.2	General: application-specific details .....	52
O.3	Channel status: application-specific details .....	52
O.4	User data: application-specific details .....	52
Annex P (informative)	Use of original sampling frequency, sampling frequency and clock accuracy .....	53
Annex Q (normative)	Application of the digital interface in magnetic disc digital audio systems in the consumer mode .....	55
Q.1	Overview .....	55
Q.2	General: application-specific details .....	55
Q.3	Channel status: application-specific details .....	55
Q.4	User data: application-specific details .....	55
Annex R (normative)	Explanations of category code implementation .....	56
R.1	Multi-media player .....	56
R.2	Home-recorded medium player .....	56
R.3	Monitoring output from a recorder .....	57
R.3.1	Real-time monitoring (direct monitoring) .....	57
R.3.2	Monitoring after recording .....	57
R.4	Integrated products .....	58
R.5	Implementation rule of category code groups for digital/digital converter and signal-processing products .....	58
R.5.1	Discrete product worked as a digital/digital converter or a signal processing unit .....	58
R.5.2	Integrated product including a digital/digital converter or a signal processing unit .....	58
R.6	Magnetic disc recorder unit inside an integrated product .....	59
R.7	Category code assignment .....	59
R.7.1	No category code in a corresponding category code group .....	59
R.7.2	No category code group for a corresponding product .....	59
R.8	Other assignment of integrated products .....	60

Annex S (informative) Application of the digital audio interface for synchronization of audio, video and multi-media equipment.....	61
S.1 General.....	61
S.2 Lip-sync system model.....	61
S.3 How to compensate lip-sync.....	61
S.3.1 General.....	61
S.3.2 Detection methods.....	62
S.4 Use of time code.....	63
S.5 Use of latency information.....	64
S.6 Example of latency parameter transmission method with $TL_V$ .....	64
S.6.1 An example for solving lip-sync problems.....	64
S.6.2 Another example for solving lip-sync problems.....	65
Annex T (normative) MPEG Surround over PCM.....	66
T.1 Format of MPEG Surround buried data frames.....	66
T.2 MPEG Surround detection.....	66
Bibliography.....	67
Figure 1 – Example of message structure using information units.....	23
Figure 2 – First UI contents.....	24
Figure 3 – Second UI contents.....	24
Figure 4 – Third UI contents.....	25
Figure 5 – User information.....	25
Figure 6 – SMPTE time code information.....	26
Figure 7 – LTC information alignment.....	26
Figure 8 – VITC information alignment.....	27
Figure 9 – Latency information.....	27
Figure 10 – Latency information alignment.....	28
Figure 11 – Loudness information.....	28
Figure 12 – Loudness information alignment.....	29
Figure C.1 – Example of different combinations of start-ID and shortening-ID.....	36
Figure L.1 – Marker mode.....	45
Figure L.2 – Extended mode.....	46
Figure P.1 – Player and interface model.....	53
Figure R.1 – Multi-media player.....	56
Figure R.2 – Home-recorded medium player.....	57
Figure R.3 – Direct monitoring.....	57
Figure R.4 – Monitoring after recording.....	57
Figure R.5 – Integrated product.....	58
Figure R.6 – Digital/digital converter.....	58
Figure R.7 – Integrated product including digital/digital converter.....	59
Figure R.8 – Integrated product including magnetic disc recorder.....	59
Figure S.1 – Lip-sync system model.....	61
Figure S.2 – Lip-sync compensation.....	62
Figure S.3 – Time-code transmission.....	62
Figure S.4 – Latency parameter transmission.....	63

Figure S.5 – Latency parameter transmission with TLV .....	63
Figure S.6 – Example of latency parameter transmission .....	64
Figure S.7 – Another example for solving lip-sync problems.....	65
Figure T.1 – Relation between MPEG Surround buried data frame and IEC 60958-3 frame.....	66
Table 1 – Channel status general format for consumer use .....	11
Table 2 – Mode 0 channel status format for consumer use.....	13
Table 3 – Category code groups.....	19
Table 4 – Category code groups for laser optical products .....	20
Table 5 – Category code groups for digital/digital converter and signal-processing products .....	20
Table 6 – Category code groups for magnetic tape or magnetic disc based products .....	20
Table 7 – Category code groups for broadcast reception of digitally encoded audio with/without video signals .....	21
Table 8 – Category code groups for musical instruments, microphones and other sources that create original sound.....	21
Table 9 – Category code groups for A/D converters for analogue signals without copyright information .....	21
Table 10 – Category code groups for A/D converters for analogue signals with copyright information .....	21
Table 11 – Category code groups for solid state memory based products.....	22
Table A.1 – Example of 2-channel compact disc format .....	31
Table C.1 – Use of Cp-bit, L-bit and category code for DAT .....	33
Table C.2 – User data application in the DAT system.....	35
Table L.1 – Layout of message number "000000" .....	46
Table L.2 – Deck status codes .....	47
Table L.3 – ITTS packet extended message example .....	48
Table P.1 – Term definitions .....	53
Table P.2 – Cases .....	54
Table P.3 – Example.....	54

# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## DIGITAL AUDIO INTERFACE –

### Part 3: Consumer applications

#### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 60958-3 has been prepared by technical area 20: Analogue and digital audio, of IEC technical committee 100: Audio, video and multimedia systems and equipment. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2006, Amendment 1:2009 and Amendment 2:2015. This edition constitutes a technical revision.

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

- a) The relevant part of IEC 60958-5 is supported.

The text of this International Standard is based on the following documents:

Draft	Report on voting
100/3543/CDV	100/3594/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

A list of all parts in the IEC 60958 series, published under the general title *Digital audio interface*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

## 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 documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60958-5, *Digital audio interface – Part 5: Consumer application enhancement*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**