

SLOVENSKI STANDARD

SIST EN 60958-4-4:2016

01-december-2016

Nadomešča:

SIST EN 60958-4:2004

SIST EN 60958-4:2004/A1:2008

Digitalni avdio vmesnik - 4-4. del: Profesionalna uporaba - Fizični in električni parametri (IEC 60958-4-4:2016)

Digital audio interface - Part 4-4: Professional applications - Physical and electrical parameters (IEC 60958-4-4:2016)

Digitalton-Schnittstelle - Teil 4-4: Professioneller Gebrauch - Physikalische und elektrische Eigenschaften (IEC 60958-4-4:2016)

Interface audionumérique - Partie 4-4: Applications professionnelles - Paramètres physiques et électriques (IEC 60958-4-4:2016)

Ta slovenski standard je istoveten z: EN 60958-4-4:2016

ICS:

33.160.30	Avdio sistemi	Audio systems
35.200	Vmesniška in povezovalna oprema	Interface and interconnection equipment

SIST EN 60958-4-4:2016

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60958-4-4:2016

<https://standards.iteh.ai/catalog/standards/sist/a67cd2f3-7c17-4773-97ae-3d1c5a2420f8/sist-en-60958-4-4-2016>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60958-4-4

July 2016

ICS 33.160.30

Supersedes EN 60958-4:2003 (partially)

English Version

Digital audio interface -
Part 4-4: Professional applications -
Physical and electrical parameters
(IEC 60958-4-4:2016)

Interface audionumérique -
Partie 4-4: Applications professionnelles -
Paramètres physiques et électriques
(IEC 60958-4-4:2016)

Digitalton-Schnittstelle -
Teil 4-4: Professioneller Gebrauch -
Physikalische und elektrische Eigenschaften
(IEC 60958-4-4:2016)

This European Standard was approved by CENELEC on 2016-04-28. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, 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: Avenue Marnix 17, B-1000 Brussels

European foreword

The text of document 100/2454/CDV, future edition 1 of IEC 60958-4-4, 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 60958-4-4:2016.

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) 2017-01-28
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-04-28

This document, together with EN 60958-4-1:2016 and EN 60958-4-2:2016, supersedes EN 60958-4:2003.

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

ITEH STANDARD PREVIEW
(standards.iteh.ai)

Endorsement notice

<https://standards.iteh.ai/catalog/standards/sist/a67cd2f3-7c17-4773-97ae-3d1c5a2420f8/sist-en-60958-4-4-2016>

The text of the International Standard IEC 60958-4-4:2016 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 60958	NOTE	Harmonized in EN 60958 series.
IEC 60958-3	NOTE	Harmonized as EN 60958-3.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When 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.

Publication	Year	Title	EN/HD	Year
IEC 60268-12	-	Sound system equipment - Part 12: Application of connectors for broadcast and similar use	EN 60268-12	-
IEC 60603-7	series	Connectors for electronic equipment - Part 7: Detail specification for 8-way, unshielded, free and fixed connectors	EN 60603-7	series
IEC 60958-1	2008	Digital audio interface -	EN 60958-1	2008
+ A1	2014	Part 1: General	+ A1	2014
IEC 60958-4-1	-	Digital audio interface - Part 4-1: Professional applications - Audio content	EN 60958-4-1	-
IEC 60958-4-2	-	Digital audio interface - Part 4-2: Professional applications - Metadata and subcode	EN 60958-4-2	-
IEC 61169-8	-	Radio-frequency connectors - Part 8: Sectional specification - RF coaxial connectors with inner diameter of outer conductor 6,5 mm (0,256 in) with bayonet lock - Characteristics impedance 50 ohms (type BNC)	EN 61169-8	-
ISO/IEC 11801	-	Information technology - Generic cabling for customer premises	-	-

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60958-4-4:2016

<https://standards.iteh.ai/catalog/standards/sist/a67cd2f3-7c17-4773-97ae-3d1c5a2420f8/sist-en-60958-4-4-2016>



IEC 60958-4-4

Edition 1.0 2016-03

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Digital audio interface –
Part 4-4: Professional applications – Physical and electrical parameters

Interface audionumérique –
Partie 4-4: Applications professionnelles – Paramètres physiques et électriques

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 33.160.30

ISBN 978-2-8322-3233-0

Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references.....	7
3 Terms and definitions	7
4 Common features	8
5 Jitter.....	8
5.1 Output interface jitter.....	8
5.1.1 General	8
5.1.2 Intrinsic jitter	8
5.1.3 Jitter gain	9
5.2 Receiver jitter tolerance	10
Annex A (informative) Symbol rates and UI	11
Annex B (normative) Balanced transmission	12
B.1 General characteristics.....	12
B.1.1 Configuration	12
B.1.2 Equalisation	12
B.1.3 Cable	12
B.2 Line driver characteristics.....	13
B.2.1 Output impedance.....	13
B.2.2 Signal amplitude	13
B.2.3 Balance	13
B.2.4 Rise and fall times	13
B.3 Line receiver characteristics	13
B.3.1 Terminating impedance	13
B.3.2 Maximum input signals.....	14
B.3.3 Minimum input signals.....	14
B.3.4 Receiver equalization.....	14
B.3.5 Common-mode rejection	15
B.4 Connector	15
B.4.1 XLR connector	15
B.4.2 8-way modular connector	15
Annex C (normative) Coaxial transmission	17
C.1 General.....	17
C.2 Line driver characteristics.....	17
C.2.1 General	17
C.2.2 Output impedance	17
C.2.3 Signal characteristics	17
C.3 Coaxial cable characteristics	18
C.4 Line receiver characteristics	18
C.4.1 General	18
C.4.2 Terminating impedance	19
C.4.3 Maximum input signals.....	19
C.4.4 Minimum input signals.....	19
C.5 Connector	20

Annex D (informative) Optical transmission	21
D.1 Short haul	21
D.2 Medium haul	21
D.3 Long haul	21
Bibliography	22
Figure 1 – Intrinsic-jitter measurement-filter characteristic	9
Figure 2 – Jitter transfer-function mask	10
Figure 3 – Jitter tolerance template	10
Figure B.1 – Simplified example of the configuration of the circuit (balanced).....	12
Figure B.2 – Eye diagram, balanced receiver.....	14
Figure B.3 – Suggested equalizing characteristic for a receiver operating at 48 kHz frame rate.....	15
Figure C.1 – Output signal waveform.....	17
Figure C.2 – Eye diagram, coaxial receiver.....	19
Figure C.3 – Eye pattern for long-distance transmission	20
Table A.1 – Symbol rate versus sampling frequency	11
Table A.2 – UI (ns) versus sampling frequency	11
Table C.1 – Output signal characteristics	18

INTERNATIONAL ELECTROTECHNICAL COMMISSION

DIGITAL AUDIO INTERFACE –

**Part 4-4: Professional applications –
Physical and electrical parameters**

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.
<https://standards.iteh.ai/catalog/standards/sist/a67cd2b3-7c17-4773-97ae-3d1c5a2420f8/sist-en-60958-4-4-2016>
- 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.

International Standard IEC 60958-4-4 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 first edition, together with IEC 60958-4-1 and IEC 60958-4-2, cancels and replaces the IEC 60958-4 published in 2003 and its Amendment 1:2008 and constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 60958-4:2003 with its Amendment 1:2008:

- a) support for a wider range of physical media;
- b) support for a wider range of audio sampling frequencies;
- c) deprecation of “minimum implementation” of channel status data.

The text of this standard is based on the following documents:

CDV	Report on voting
100/2454/CDV	100/2583/RVC

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

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

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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
- amended.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60958-4-4:2016](https://standards.iteh.ai/catalog/standards/sist/a67cd2f3-7c17-4773-97ae-3d1c5a2420f8/sist-en-60958-4-4-2016)

<https://standards.iteh.ai/catalog/standards/sist/a67cd2f3-7c17-4773-97ae-3d1c5a2420f8/sist-en-60958-4-4-2016>