

SLOVENSKI STANDARD SIST EN IEC 62680-1-6:2020

01-julij-2020

Vmesniki univerzalnega serijskega vodila za prenos podatkov in napajanje - 1-6. del: Skupne komponente - Definicija tipa naprave USB Avdio 3.0 za osnovne funkcije (IEC 62680-1-6:2019)

Universal serial bus interfaces for data and power - Part 1-6: Common components - USB Audio 3.0 device class definition basic functions (IEC 62680-1-6:2019)

Schnittstellen des Universellen Seriellen Busses für Daten und Energie - Teil 1-6: Gemeinsame Komponenten - USB Audio 3.0 Geräteklassendefinition Grundfunktionen (IEC 62680-1-6:2019) (standards.iteh.ai)

Interfaces de bus universel en série pour les données et l'alimentation électrique - Partie 1-6: Composants communs - Définition de classes de dispositifs USB Audio 3.0 pour fonctions de base (IEC 62680-1-6:2019)

Ta slovenski standard je istoveten z: EN IEC 62680-1-6:2019

ICS:

35.200 Vmesniška in povezovalna Interface and interconnection

oprema equipment

SIST EN IEC 62680-1-6:2020 en,fr,de

SIST EN IEC 62680-1-6:2020

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN IEC 62680-1-6:2020

https://standards.iteh.ai/catalog/standards/sist/d388abb4-ab47-4c04-98a0-60d5048fbba8/sist-en-iec-62680-1-6-2020

EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM EN IEC 62680-1-6

November 2019

ICS 33.120.20; 35.200; 29.200

English Version

Universal serial bus interfaces for data and power - Part 1-6: Common components - USB Audio 3.0 device class definition basic functions (IEC 62680-1-6:2019)

Interfaces de bus universel en série pour les données et l'alimentation électrique - Partie 1-6: Composants communs - Définition de classes de dispositifs USB Audio 3.0 pour fonctions de base (IEC 62680-1-6:2019)

Schnittstellen des Universellen Seriellen Busses für Daten und Energie - Teil 1-6: Gemeinsame Komponenten - USB Audio 3.0 Geräteklassendefinition Grundfunktionen (IEC 62680-1-6:2019)

This European Standard was approved by CENELEC on 2019-10-24. 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.

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, land and standards standard

60d5048fbba8/sist-en-iec-62680-1-6-2020

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 62680-1-6:2019 (E)

European foreword

The text of document 100/3158/CDV, future edition 1 of IEC 62680-1-6, 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 62680-1-6:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2020-07-24 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-10-24

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.

iTeh STANDARD PREVIEW Endorsement notice (standards.iten.ai)

The text of the International Standard IEC 62680-1-6:2019 was approved by CENELEC as a European Standard without any modification.



IEC 62680-1-6

Edition 1.0 2019-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Universal serial bus interfaces for data and power-VIEW
Part 1-6: Common components – USB Audio 3.0 device class definition basic functions

SIST EN IEC 62680-1-6:2020

Interfaces de bus universel en série pour les données et l'alimentation électrique – 60d5048fbba8/sist-en-iec-62680-1-6-2020

Partie 1-6: Composants communs – Définition de classes de dispositifs USB Audio 3.0 pour fonctions de base

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 35.200; 29.200; 33.120.20

ISBN 978-2-8322-7242-8

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.

-2-

IEC 62680-1-6:2019

© USB-IF:1997-2016

INTERNATIONAL ELECTROTECHNICAL COMMISSION

UNIVERSAL SERIAL BUS INTERFACES FOR DATA AND POWER -

Part 1-6: Common components – USB Audio 3.0 device class definition basic functions

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. Standards.
- 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.itch.ai/catalog/standards/sist/d388abb4-ab47-4c04-98a0-
- 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 62680-1-6 has been prepared by technical area 18: Multimedia home systems and applications for end-user networks, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this standard was prepared by the USB Implementers Forum (USB-IF). The structure and editorial rules used in this publication reflect the practice of the organization which submitted it.

IEC 62680-1-6:2019

© USB-IF:1997-2016

– 3 –

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

CDV	Report on voting
100/3158/CDV	100/3228/RVC

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

(standards.iteh.ai)

<u>SIST EN IEC 62680-1-6:2020</u> https://standards.iteh.ai/catalog/standards/sist/d388abb4-ab47-4c04-98a0-60d5048fbba8/sist-en-iec-62680-1-6-2020

Copyright © 1997-2016 USB Implementers Forum, Inc. All rights reserved.

-4-

IEC 62680-1-6:2019

© USB-IF:1997-2016

INTRODUCTION

The IEC 62680 series is based on a series of specifications that were originally developed by the USB Implementers Forum (USB-IF). These specifications were submitted to the IEC under the auspices of a special agreement between the IEC and the USB-IF.

This standard is the USB-IF publication USB Device Class Definition for Basic Audio Functions Release 3.0.

The USB Implementers Forum, Inc.(USB-IF) is a non-profit corporation founded by the group of companies that developed the Universal Serial Bus specification. The USB-IF was formed to provide a support organization and forum for the advancement and adoption of Universal Serial Bus technology. The Forum facilitates the development of high-quality compatible USB peripherals (devices), and promotes the benefits of USB and the quality of products that have passed compliance testing.

ANY USB SPECIFICATIONS ARE PROVIDED TO YOU "AS IS, "WITH NO WARRANTIES WHATSOEVER, INCLUDING ANY WARRANTY OF MERCHANTABILITY, NON-INFRINGEMENT, OR FITNESS FOR ANY PARTICULAR PURPOSE. THE USB IMPLEMENTERS FORUM AND THE AUTHORS OF ANY USB SPECIFICATIONS DISCLAIM ALL LIABILITY, INCLUDING LIABILITY FOR INFRINGEMENT OF ANY PROPRIETARY RIGHTS, RELATING TO USE OR IMPLEMENTATION OR INFORMATION IN THIS SPECIFICAITON.

THE PROVISION OF ANY USB SPECIFICATIONS TO YOU DOES NOT PROVIDE YOU WITH ANY LICENSE, EXPRESS OF IMPLIED BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS.

(standards.iteh.ai)

Entering into USB Adopters Agreements may, however, allow a signing company to participate in a reciprocal, RAND-Z licensing arrangement for compliant products. For more information, please see:

 $\frac{https://standards.iteh.ai/catalog/standards/sist/d388abb4-ab47-4c04-98a0-https://www.usb.org/documents}{60d5048fbba8/sist-en-iec-62680-1-6-2020}$

IEC DOES NOT TAKE ANY POSITION AS TO WHETHER IT IS ADVISABLE FOR YOU TO ENTER INTO ANY USB ADOPTERS AGREEMENTS OR TO PARTICIPATE IN THE USB IMPLEMENTERS FORUM."

-5-

IEC 62680-1-6:2019

© USB-IF:1997-2016

UNIVERSAL SERIAL BUS

DEVICE CLASS DEFINITION

FOR

BASIC AUDIO FUNCTIONS

standards.iteh.ai)

<u>SIST EN IEC 62680-1-6:2020</u> https://standards.iteh.ai/catalog/standards/sist/d388abb4-ab47-4c04-98a0-60d5048fbba8/sist-en-iec-62680-1-6-2020

Release 3.0

September 22, 2016

-6-

IEC 62680-1-6:2019

© USB-IF:1997-2016

SCOPE OF THIS RELEASE

This document is the Release 3.0 of this specification.

CONTRIBUTORS

Joe Scanlon **Advanced Micro Devices**

Rhoads Hollowell Apple Inc. **Girault Jones** Apple Inc. Matthew X. Mora Apple Inc.

Tzung-Dar Tsai C-Media Electronics, Inc.

Brad Lambert Cirrus Logic, Inc.

Dan Bogard Conexant Systems, Inc. **Pete Burgers** DisplayLink (UK), Ltd. David Roh Dolby Laboratories, Inc.

Leng Ooi Google, Inc. Pierre-Louis Bossart **Intel Corporation David Hines Intel Corporation** Abdul Rahman Ismail (Co-Chair) **Intel Corporation**

iTeh STAIntel Corporation PREVIEW Devon Worrell

Logitech, Inc. Chandrashekhar Rao

(stance corporation (stance) Terry Moore

MediaTek, Inc. Alex Lin

Bala Sivakumar

SIST EN IFC 62680-1-0-7020 Microsoft Corporation Microsoft Corporation Microsoft Corporation Geert Knapen (Co-Chair & Editor) 6045045 NXP Semiconductors

PL Mobile Audio 411 E. Plumeria drive San Jose, CA 95134, USA Phone: +1 (408) 518-5514 E-mail: geert.knapen@nxp.com

James Goel Qualcomm, Inc. Andre Schevciw Qualcomm, Inc. Jin-Sheng Wang Qualcomm, Inc.

Morten Christiansen Synopsys

REVISION HISTORY

Rev.	Date	Filename	Description
1.0	Nov. 24, 09	BasicAudioDevice-10.pdf	Release 1.0
3.0	Sep. 22, 16	BasicAudioDevice30.pdf	Release 3.0

IEC 62680-1-6:2019 © USB-IF:1997-2016 **-7-**

Copyright © 1997-2016 USB Implementers Forum, Inc. All rights reserved.

INTELLECTUAL PROPERTY DISCLAIMER

A LICENSE IS HEREBY GRANTED TO REPRODUCE THIS SPECIFICATION FOR INTERNAL USE ONLY. NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, IS GRANTED OR INTENDED HEREBY.

USB-IF AND THE AUTHORS OF THIS SPECIFICATION EXPRESSLY DISCLAIM ALL LIABILITY FOR INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS RELATING TO IMPLEMENTATION OF INFORMATION IN THIS SPECIFICATION. USB-IF AND THE AUTHORS OF THIS SPECIFICATION ALSO DO NOT WARRANT OR REPRESENT THAT SUCH IMPLEMENTATION(S) WILL NOT INFRINGE THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS.

THIS SPECIFICATION IS PROVIDED "AS IS" AND WITH NO WARRANTIES, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE. ALL WARRANTIES ARE EXPRESSLY DISCLAIMED. USB-IF, ITS MEMBERS AND THE AUTHORS OF THIS SPECIFICATION PROVIDE NO WARRANTY OF MERCHANTABILITY, NO WARRANTY OF NON-INFRINGEMENT, NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, AND NO WARRANTY ARISING OUT OF ANY PROPOSAL, SPECIFICATION, OR SAMPLE.

IN NO EVENT WILL USB-IF, MEMBERS OR THE AUTHORS BE LIABLE TO ANOTHER FOR THE COST OF PROCURING SUBSTITUTE GOODS OR SERVICES, LOST PROFITS, LOSS OF USE, LOSS OF DATA OR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, OR SPECIAL DAMAGES, WHETHER UNDER CONTRACT, TORT, WARRANTY, OR OTHERWISE, ARISING IN ANY WAY OUT OF THE USE OF THIS SPECIFICATION, WHETHER OR NOT SUCH PARTY HAD ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.

NOTE: VARIOUS USB-IF MEMBERS PARTICIPATED IN THE DRAFTING OF THIS SPECIFICATION. CERTAIN OF THESE MEMBERS MAY HAVE DECLINED TO ENTER INTO A SPECIFIC AGREEMENT LICENSING INTELLECTUAL PROPERTY RIGHTS THAT MAY BE INFRINGED IN THE IMPLEMENTATION OF THIS SPECIFICATION. PERSONS IMPLEMENT THIS SPECIFICATION AT THEIR OWN RISK: icc-62680-1-6-2020

Dolby™, AC-3™, Pro Logic™ and Dolby Surround™ are trademarks of Dolby Laboratories, Inc.
All other product names are trademarks, registered trademarks, or service marks of their respective owners.

Please send comments via electronic mail to audio-chair@usb.org

TABLE OF CONTENTS

Scope of This Release	
Contributors	6
Revision History	6
Table of Contents	8
List of Tables	10
List of Figures	11
1 Introduction	12
1.1 Scope	12
1.2 Purpose	12
1.3 Related Documents	12
1.4 Terms and Abbreviations	12
2 Management Overview	14
3 Classification	15
4 General Requirements	16
4.1 Host and Basic Audio Device Interoperability	16
4.2 BADD AudioStreaming Interfaces A.N.D.A.R.DP.R.E.V.I.E.V	16
4.2.1 USB Speeds(standards.iteln.ai) 4.2.2 Burst Modes	16
4.2.2 Burst Modes	16
4.2.3 Synchronization TypeSIST.EN JEC 62680-1-6:2020	16
4.2.4 Sampling Frequency & Bit Depth 60d5048ibba8/sist-en-iec-62680-1-6-2020	16
4.2.5 Cluster Descriptors	16
4.3 Power Considerations	18
4.3.1 Power Domains	18
5 Topologies	19
5.1 BAOF Topology	19
5.2 BAIF Topology	19
5.3 BAIOF Topology	20
6 Descriptors	22
6.1 Standard Descriptors	22
6.2 Interface Descriptors	22
6.2.1 Interface Association Descriptor	22
6.2.2 AudioControl Interface Descriptors	22
6.2.3 AudioControl Endpoint Descriptors	30
6.2.4 AudioStreaming Interface Descriptors	30
6.3 String Descriptors	34
7 Requests	35
7.1.1 Standard Requests	35
7.1.2 Class-specific Requests	35
9 PADD Profiles	2-

SIST EN IEC 62680-1-6:2020

IEC 62680-1-6:2019

-9-

© USB-IF:1997-2016

8.1	Generic I/O Profile	37
8.2	Headphone Profile	38
8.3	Speaker Profile	39
8.4	Microphone Profile	40
	Headset Profile	
8.6	Headset Adapter Profile	41
	Speakerphone Profile	

iTeh STANDARD PREVIEW (standards.iteh.ai)

<u>SIST EN IEC 62680-1-6:2020</u> https://standards.iteh.ai/catalog/standards/sist/d388abb4-ab47-4c04-98a0-60d5048fbba8/sist-en-iec-62680-1-6-2020