Universal serial bus interfaces for data and power - Part 1-3: Common components - USB type-C cable and connector specification

EVS · EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 62680-1-3:2025 sisaldab Euroopa standardi EN IEC 62680-1-3:2025 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62680-1-3:2025 consists of the English text of the European standard EN IEC 62680-1-3:2025.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
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Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 11.040.10, 11.040.20, 11.040.25

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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Universal serial bus interfaces for data and power - Part 1-3: Common components - USB Type-C(r) cable and connector specification (IEC 62680-1-3:2024)

Interfaces de bus universel en série pour les données et l'alimentation électrique - Partie 1-3: Composants communs - Spécification des câbles et des connecteurs USB Type-C(r)
(IEC 62680-1-3:2024)

Universelle Bus-Schnittstellen für Daten und Energie - Teil 1-3: Gemeinsame Komponenten - Festlegung für USB Type-C Kabel und Steckverbindung
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European foreword

The text of document 100/4139/CDV, future edition 6 of IEC 62680-1-3, prepared by TC 100/Technical Area 18 "Multimedia home systems and applications for end-user networks" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62680-1-3:2025.

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- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2026-01-31
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IEC 62680-1-3

Edition 6.0 2024-12

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NORME INTERNATIONALE

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Universal serial bus interfaces for data and power – Part 1-3: Common components – USB Type-C® cable and connector specification

Interfaces de bus universel en série pour les données et l'alimentation électrique – Partie 1-3: Composants communs – Spécification des câbles et des connecteurs USB Type-C®

IEC 62680-1-3:2024-12(en-fr)

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

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Interfaces de bus universel en série pour les données et l'alimentation électrique – Partie 1-3: Composants communs – Spécification des câbles et des connecteurs USB Type-C®

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UNIVERSAL SERIAL BUS INTERFACES FOR DATA AND POWER –

Part 1-3: Common components – USB Type-C® cable and connector specification

FOREWORD

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IEC 62680-1-2 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. It is an International Standard.

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.

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

Draft	Report on voting
100/4139/CDV	100/4177/RVC

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

A list of all parts in the IEC 62680 series, published under the general title *Universal serial bus interfaces for data and power*, can be found on the IEC website.

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1 Introduction

With the continued success of the USB interface, there exists a need to adapt USB technology to serve newer computing platforms and devices as they trend toward smaller, thinner, and lighter form-factors. Many of these newer platforms and devices are reaching a point where existing USB receptacles and plugs are inhibiting innovation, especially given the relatively large size and internal volume constraints of the Standard-A and Standard-B versions of USB connectors. Additionally, as platform usage models have evolved, usability and robustness requirements have advanced, and the existing set of USB connectors were not originally designed for some of these newer requirements. This specification establishes a new USB connector ecosystem that addresses the evolving needs of platforms and devices while retaining all the functional benefits of USB that form the basis for this most popular of computing device interconnects.

1.1 Purpose

This specification defines the USB Type-C® receptacles, plug and cables.

The USB Type-C Cable and Connector Specification is guided by the following principles:

- Enable new and exciting host and device form-factors where size, industrial design and style are important parameters
- Work seamlessly with existing USB host and device silicon solutions
- Enhance ease of use for connecting USB devices with a focus on minimizing user confusion for plug and cable orientation

The USB Type-C Cable and Connector Specification defines a receptacle, plug, cable, and detection mechanisms that are compatible with existing USB interface electrical and functional specifications. This specification covers the following aspects that are needed to produce and use this new USB cable/connector solution in newer platforms and devices, and that interoperate with existing platforms and devices:

- USB Type-C receptacles, including electro-mechanical definition and performance requirements
- USB Type-C plugs and cable assemblies, including electro-mechanical definition and performance requirements
- USB Type-C to legacy cable assemblies and adapters
- USB Type-C-based device detection and interface configuration, including support for legacy connections
- ***USB Power Delivery*** optimized for the USB Type-C connector

The USB Type-C Cable and Connector Specification defines a standardized mechanism that supports ***Alternate Modes***, such as repurposing the connector for docking-specific applications.

1.2 Scope

This specification is intended as a supplement to the existing ***USB 2.0***, ***USB 3.2***, ***USB4***® and ***USB Power Delivery*** specifications. It addresses only the elements required to implement and support the USB Type-C receptacles, plugs and cables.

Normative information is provided to allow interoperability of components designed to this specification. ***Informative*** information, when provided, may illustrate possible design implementations.

1.3 Related Documents

USB 2.0 ***Universal Serial Bus Revision 2.0 Specification***
This includes the entire document release package.

USB 3.2 ***Universal Serial Bus Revision 3.2 Specification***
This includes the entire document release package.
USB 3.1 Legacy Cable and Connector Specification, Revision 1.0

USB4 ***USB4 Specification, Version 2.0, October 2022***
(including posted errata and ECNs)

TBT3 *Chapter 13 of* ***USB4 Specification, Version 2.0, October 2022***

USB PD ***USB Power Delivery Specification, Revision 2.0, Version 1.3, January 12, 2017***
USB Power Delivery Specification, Revision 3.2, Version 1.0, October 2023
(including posted errata and ECNs)

USB BB ***USB Billboard Device Class Specification, Revision 1.2.2, January 29, 2021***

USB BC ***Battery Charging Specification, Revision 1.2, March 15, 2012***
(including posted errata and ECNs)

DP AM ***DisplayPort™ Alt Mode on USB Type-C Standard, Version 2.1, October 2022***

All USB-specific documents are available for download at http://www.usb.org/documents.
The ***DisplayPort Alt Mode*** specification is available from VESA (http://www.vesa.org).

1.4 Conventions

1.4.1 Precedence

If there is a conflict between text, figures, and tables, the precedence ***shall*** be tables, figures, and then text.

1.4.2 Keywords

The following keywords differentiate between the levels of requirements and options.

1.4.2.1 Informative

Informative is a keyword that describes information with this specification that intends to discuss and clarify requirements and features as opposed to mandating them.

1.4.2.2 May

May is a keyword that indicates a choice with no implied preference.

1.4.2.3 May Not

May not is a keyword that is the inverse of ***May***. Indicates a choice to not implement a given feature with no implied preference.

1.4.2.4 N/A

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1.4.2.5 Normative

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