USB-grænseflader for data og energi – Del 1-3: Fælles komponenter – Specifikation for USB-type-CTM-kabel og -konnektor

Universal serial bus interfaces for data and power – Part 1-3: Common components – USB Type-CTM Cable and Connector Specification

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Universal serial bus interfaces for data and power – Part 1-3: Common components – USB Type-C™ Cable and Connector Specification

IEC 62680-1-3:2018-05(en)

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UNIVERSAL SERIAL BUS INTERFACES FOR DATA AND POWER –

Part 1-3: Common components – USB Type-C™ Cable and Connector Specification

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This third edition cancels and replaces the second edition published in 2017 and constitutes a technical revision.

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:

CDV	Report on voting
100/3011/CDV	100/3099/RVC

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INTRODUCTION

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This standard is the USB-IF publication USB Type-C™ Cable and Connector Specification Revision 1.3 as of July 14, 2017.

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Universal Serial Bus Type-C Cable and Connector Specification

Release 1.3
July 14, 2017

CONTENTS

FIGURES

TABLES

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Revision History

Revision	Date	Description
1.0	August 11, 2014	Initial Release
1.1	April 3, 2015	Reprint release including incorporation of all approved ECNs as of the revision date plus editorial clean-up.
1.2	March 25, 2016	Reprint release including incorporation of all approved ECNs as of the revision date plus editorial clean-up.
1.3	July 14, 2017	Reprint release including incorporation of all approved ECNs as of the revision date plus editorial clean-up.

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 is to establish a new USB connector ecosystem that addresses the evolving needs of platforms and devices while retaining all of 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 new 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 3.1* 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.
http://www.usb.org/developers/docs

USB 3.1 *Universal Serial Bus Revision 3.1 Specification*
This includes the entire document release package.
http://www.usb.org/developers/docs

USB PD *USB Power Delivery Specification, Revision 2.0, Version 1.3, January 12, 2017*
USB Power Delivery Specification, Revision 3.0, Version 1.1, January 12, 2017 (including errata and ECNs through June 12, 2017)
http://www.usb.org/developers/docs

USB BB *USB Billboard Device Class Specification, Revision 1.21, September 8, 2016*
http://www.usb.org/developers/docs

USB BC *Battery Charging Specification, Revision 1.2 (including errata and ECNs through March 15, 2012), March 15, 2012*
http://www.usb.org/developers/docs

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 N/A

N/A is a keyword that indicates that a field or value is not applicable and has no defined value and shall not be checked or used by the recipient.

1.4.2.4 Normative

Normative is a keyword that describes features that are mandated by this specification.