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Standards

Irish Standard
I.S. EN 63002:2017

Identification and communication interoperability method for external power supplies used with portable computing devices

I.S. EN 63002:2017

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN 63002:2017 is the adopted Irish version of the European Document EN 63002:2017, Identification and communication interoperability method for external power supplies used with portable computing devices

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EUROPEAN STANDARD

EN 63002

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2017

ICS 31.020; 35.200

English Version

**Identification and communication interoperability method for
external power supplies used with portable computing devices
(IEC 63002:2016)**

Méthode d'identification et d'interopérabilité des
communications des alimentations externes utilisées avec
les dispositifs informatiques portatifs
(IEC 63002:2016)

Identifikation und Kommunikation Interoperabilitäts-
Verfahren für externe Netzteile in tragbaren Computern
(IEC 63002:2016)

This European Standard was approved by CENELEC on 2016-11-09. 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.

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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

EN 63002:2017**European foreword**

The text of document 100/2595A/CDV, future edition 1 of IEC 63002, prepared by Technical Area 14 "Interfaces and methods of measurement for personal computing equipment", 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 63002:2017.

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) 2017-09-03
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-03-03

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61000-4-11:2004	NOTE	Harmonized as EN 61000-4-11:2004 (not modified).
IEC 62623	NOTE	Harmonized as EN 62623.
IEC 62680-1-1	NOTE	Harmonized as EN 62680-1-1.
IEC 62680-1-2	NOTE	Harmonized as EN 62680-1-2.
IEC 62680-1-3	NOTE	Harmonized as EN 62680-1-3.
IEC 62680-2-1	NOTE	Harmonized as EN 62680-2-1.
IEC 62680-3-1	NOTE	Harmonized as EN 62680-3-1 ¹⁾ .
IEC 62684	NOTE	Harmonized as EN 62684.

1) To be published.

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60950-1	-	Information technology equipment - Safety - Part 1: General requirements	EN 60950-1	-
IEC 62368-1	-	Audio/video, information and communication technology equipment - Part 1: Safety requirements	EN 62368-1	-
IEC 62680-1-2	-	Universal serial bus interfaces for data and power - Part 1-2: Common components - USB Power Delivery specification	EN 62680-1-2	-
IEC 62680-1-3	-	Universal serial bus interfaces for data and power - Part 1-3: Universal Serial Bus interfaces - Common components - USB Type-C™ cable and connector specification	EN 62680-1-3	-

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IEC 63002

Edition 1.0 2016-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Identification and communication interoperability method for external power supplies used with portable computing devices

Méthode d'identification et d'interopérabilité des communications des alimentations externes utilisées avec les dispositifs informatiques portatifs





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IEC 63002

Edition 1.0 2016-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Identification and communication interoperability method for external power supplies used with portable computing devices

Méthode d'identification et d'interopérabilité des communications des alimentations externes utilisées avec les dispositifs informatiques portatifs

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONALE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**IDENTIFICATION AND COMMUNICATION INTEROPERABILITY
METHOD FOR EXTERNAL POWER SUPPLIES USED
WITH PORTABLE COMPUTING DEVICES**

FOREWORD

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

CDV	Report on voting
100/2595A/CDV	100/2700/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.

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 web site 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.

INTRODUCTION

The objective of this International Standard is to support interoperability of external power supplies used with the increasing variety of portable computing devices that implement the IEC 62680-1-2: USB Power Delivery with the IEC 62680-1-3: USB Type-C™¹ connector standards. Broad market adoption of this International Standard is expected to make a significant contribution to the global goals of consumer convenience and re-usability of power supplies by building on the global market ecosystem of IEC 62680 compliant devices and facilitating interoperability across different product categories.

IEC 62680-1-2 is expected to enjoy significant adoption in global markets for all kinds of portable computing devices requiring less than 100 watts including notebook computers, tablets, smartphones and other related devices. This International Standard enables the reporting of the identity and power characteristics of external supplies supported by IEC 62680-1-2 (USB Power Delivery) and specifies additional interoperability guidelines for external power. The method for identification of a specific external power supply (EPS) will enable equipment manufacturers to ensure compliant operation of an EPS using IEC 62680-1-2; and promotes data communication that can be used by the portable computing device to predict and mitigate interoperability concerns when an unfamiliar or incompatible external power supply is connected to the device by a user.

This International Standard specifies the minimum technical requirements for interoperability and includes recommendations for EPS functionality and the portable computing device. The approach taken by this International Standard, focusing on common charging interoperability, will allow manufacturers to innovate in aspects such as design, system performance, and energy efficiency.

This International Standard also provides important information regarding consumer safety, system reliability as well as relevant global standards and regulatory compliance.

Other international and regional standards, recommendations and regulatory policies for “universal adapters” or “common product chargers” that reference this International Standard should take into account open technical and regulatory compliance issues that are associated with untested or arbitrary combinations of EPS and devices such as those identified in Annex A. For clarity, this International Standard does not take the approach of specifying “universal” or “common product adapters” because of these open issues and limitations to satisfy market requirements. Instead, it focuses on interoperability specifications in order to support global industry in developing interoperable charging solutions that meet regulatory compliance and market requirements.

¹ USB Type-C™ and USB-C™ are trademarks of the Universal Serial Bus Implementers Forum (USB-IF).

IDENTIFICATION AND COMMUNICATION INTEROPERABILITY METHOD FOR EXTERNAL POWER SUPPLIES USED WITH PORTABLE COMPUTING DEVICES

1 Scope

This International Standard defines interoperability guidelines for external power supplies used with portable computing devices that implement the IEC 62680-1-2: Universal Serial Bus Power Delivery Specification with the IEC 62680-1-3: Universal Serial Bus Interfaces for data and power-Common Components- Type-C™ Type-C Cable and Connector Specification.

This International Standard defines normative requirements for an EPS to ensure interoperability, in particular it specifies the data communicated from an EPS to a portable computing device (Figure 1). The scope does not apply to all aspects of an EPS. This International Standard does not specify normative requirements for the portable computing device but provides recommendations for the behaviour of a portable computing device when used with an EPS compliant with this International Standard.

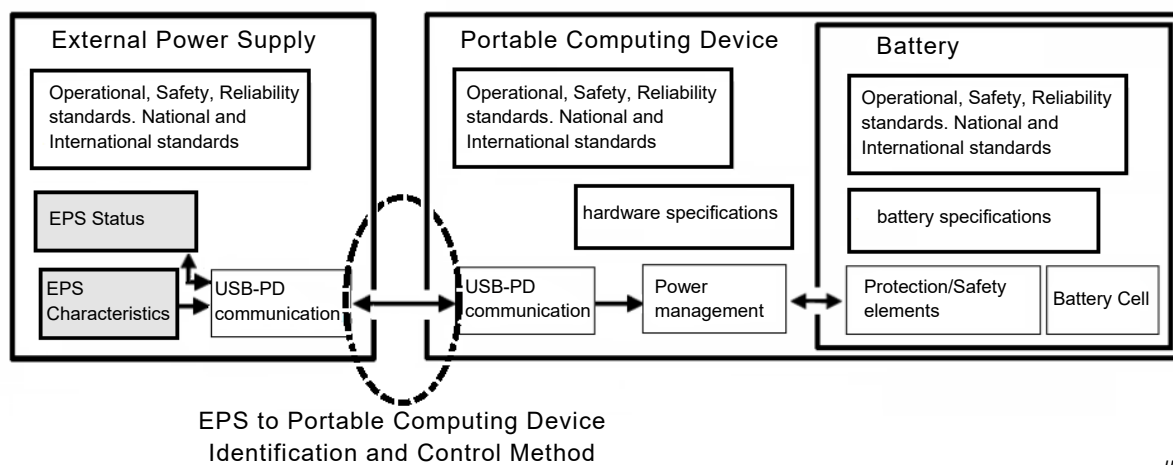


Figure 1 – Scope of the identification and communication method

This International Standard specifies the data objects used by a portable computing system using IEC 62680-1-2 to understand the identity, design and performance characteristics, and operating status of an external power supply. This International Standard is applicable to external power supplies under 100 watts for portable computing devices, with a focus on power delivery application for notebook computers, tablets, smartphones and other related multimedia devices.

This International Standard relies on established mechanical and electrical specifications, and communication protocols established by IEC 62680-1-2 and IEC 62680-1-3. This International Standard proposes methods supported by IEC 62680-1-2 to mitigate problems caused by the connection of untested combinations of EPS and portable computing devices with the aim of improving consumer satisfaction.

In addition, as given in Annex C, this International Standard provides interoperability guidelines for an EPS supporting charging using USB Type-C current when IEC 62680-1-2 functionality is not enabled. Considerations for captive and removable cable are presented in Annex B.

An EPS is expected to follow the applicable global standards and regulatory compliance requirements. Examples of those standards are given in Annex F.

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 60950-1, *Information technology equipment – Safety – Part 1: General requirements*

IEC 62368-1, *Audio/video, information and communication technology equipment – Part 1: Safety requirements*

IEC 62680-1-2, *Universal Serial Bus interfaces for data and power – Part 1-2: Common components – USB Power Delivery Specification*

IEC 62680-1-3, *Universal Serial Bus interfaces for data and power – Part 1-3: Common components – USB Type-C™ Cable and Connector Specification*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1.1

vendor identification

VID

unique 16-bit unsigned value assigned by the USB-IF to a given vendor

3.1.2

portable computing device

computing device that is easily moved and can operate on battery power

3.1.3

power source

device designed to comply with a IEC 62680-1-2 device that supplies power over V_{BUS}

3.1.4

power sink

device designed to comply with IEC 62680-1-2 that receives and consumes power

EXAMPLE Portable computing device.

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