ISO/IEC 14776-251

Edition 1.0 2014-04

INTERNATIONAL STANDARD

colour inside

Information technology – Small computer system interface (SCSI) – Part 251: USB Attached SCSI (UAS)



ISO/IEC 14776-251:2014-04(en)



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Information technology – Small computer system interface (SCSI) – Part 251: USB Attached SCSI (UAS)

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PRICE CODE B

ICS 35.200

ISBN 978-2-8322-1507-4

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INFORMATION TECHNOLOGY – SMALL COMPUTER SYSTEM INTERFACE (SCSI) –

Part 251: USB Attached SCSI (UAS)

FOREWORD

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The list of all currently available parts of the ISO/IEC 14776 series, under the general title *Information technology – Small computer system interface (SCSI)*, can be found on the IEC web site.

This International Standard has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the second title page.

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

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INTRODUCTION

This International Standard standard encompasses the following:

Clause 1 describes the scope.
Clause 2 provides normative references for the entire standard.
Clause 3 provides definitions, abbreviations, and conventions used within the entire standard.
Clause 4 describes the model.
Clause 5 describes USB requirements.
Clause 6 describes transport requirements (e.g., IUs).
Clause 7 describes the SCSI Application Layer Transport Protocol Services.
Clause 8 describes device server error handling.

SCSI standards family

Figure 1 shows the relationship of this standard to the other standards and related projects in the SCSI family of standards as of the publication of this standard.

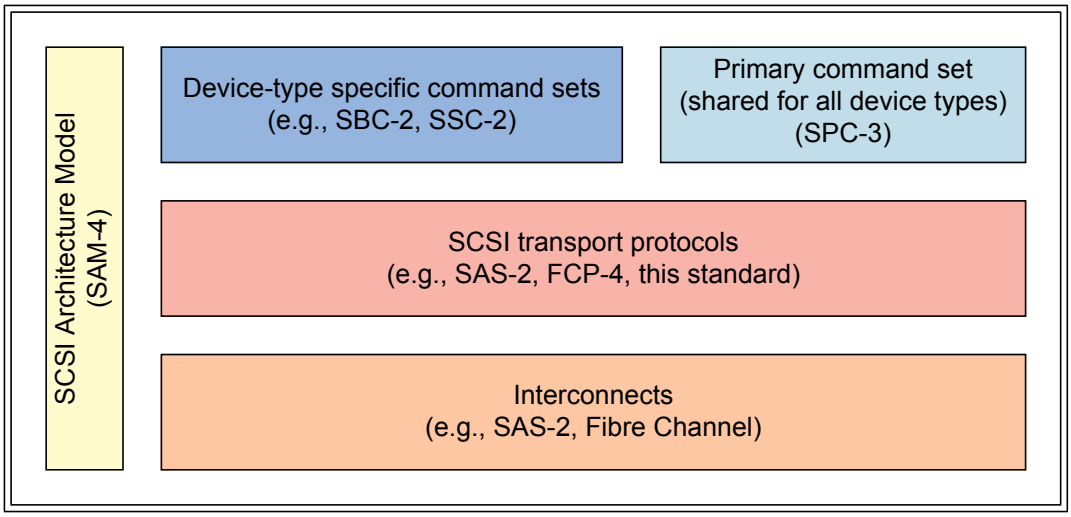


Figure 1 — SCSI document structure

The SCSI document structure in figure 1 is intended to show the general applicability of the documents to one another. Figure 1 is not intended to imply a relationship such as a hierarchy, protocol stack, or system architecture.

SCSI Architecture Model: Defines the SCSI systems model, the functional partitioning of the SCSI standard set and requirements applicable to all SCSI implementations and implementation standards.

Device-Type Specific Command Sets: Implementation standards that define specific device types including a device model for each device type. These standards specify the required commands and behaviors that are specific to a given device type and prescribe the requirements to be followed by a SCSI initiator device when sending commands to a SCSI target device having the specific device type. The commands and behaviors for a specific device type may include by reference commands and behaviors that are shared by all SCSI devices.

Shared Command Set: An implementation standard that defines a model for all SCSI device types. This standard specifies the required commands and behavior that is common to all SCSI devices, regardless of device type, and prescribes the requirements to be followed by a SCSI initiator device when sending commands to any SCSI target device.

SCSI Transport Protocols: Implementation standards that define the requirements for exchanging information so that different SCSI devices are capable of communicating.

Interconnects: Implementation standards that define the communications mechanism employed by the SCSI transport protocols. These standards may describe the electrical and signaling requirements essential for SCSI devices to interoperate over a given interconnect. Interconnect standards may allow the interconnection of devices other than SCSI devices in ways that are outside the scope of this standard.

The term SCSI is used to refer to the family of standards described in this introduction.

INFORMATION TECHNOLOGY – SMALL COMPUTER SYSTEM INTERFACE (SCSI) –

Part 251: USB Attached SCSI (UAS)

1 Scope

This part of ISO/IEC 14776 describes a SCSI transport protocol (see ISO/IEC 14776-414) for USB-2 and USB-3 with the following properties:

a) mechanism to send commands associated with any SCSI standard to a USB device;
b) complies with SCSI Architecture Model - 4 (e.g., autosense and command queuing); and
c) other capabilities.

2 Normative references

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.

ISO/IEC 14776-414, *Information technology, Small Computer System Interface (SCSI) – Part 414: SCSI Architecture Model-4* (herein referred to as SAM-4) [1]

IEC 62680-1, *Universal serial bus interfaces for data and power – Part 1: Universal serial bus specification, revision 2.0* (herein referred to as USB-2)

ANSI INCITS 513-2004, *SCSI Primary Commands-4* (herein referred to as SPC-4) [T10/1731-D][2]

Universal Serial Bus 3.0 Specification Revision 1.0 (herein referred to as USB-3). November 12, 2008

Universal Serial Bus Mass Storage Class Specification Overview Rev 1.3 (herein referred to as MSC). September 5, 2008[3]

3 Terms, definitions, symbols, abbreviations and conventions

3.1 Terms and definitions

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

3.1.1
application client
object that is the source of SCSI commands

Note 1 to entry: See ISO/IEC 14776-414.

3.1.2
Bulk-in Endpoint Descriptor
USB Endpoint Descriptor with the BM ATTRIBUTES field set to 02h and bit 7 of the bEndPoint address field set to 1

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1. ANSI INCITS 447-2008

2. planned as ISO/IEC 14776-454

   For more information on the current status of these documents, contact the INCITS Secretariat at 202-737-8888 (phone), 202-638-4922 (fax) or via E-mail at incits@itic.org. To obtain copies of these documents, contact Global Engineering at 15 Inverness Way, East Englewood, CO 80112-5704 at 303-792-2181 (phone), 800-854-7179 (phone), or 303-792-2192 (fax) or see http://www.incits.org.

3. For information on the current status of USB documents, see the USB Implementers Forum at http://www.usb.org.