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Information technology – Small computer system interface (SCSI) – Part 322: Block commands-2 (SBC-2)

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INFORMATION TECHNOLOGY – SMALL COMPUTER SYSTEM INTERFACE –

Part 322: Block commands-2 (SBC-2)

FOREWORD

- 1) ISO (International Organization for Standardization) and IEC (International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards. Their preparation is entrusted to technical committees; any ISO and IEC member body interested in the subject dealt with may participate in this preparatory work. International governmental and non-governmental organizations liaising with ISO and IEC also participate in this preparation.
- 2) In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.
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- 9) 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.
- 10) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 14776-322 was prepared by subcommittee 25: Interconnection of Information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

The list of all currently available parts of the ISO/IEC 14776 series, under the general title *Information technology – Small computer system interface*, 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 title page.

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

INTRODUCTION

The set of SCSI standards specifies the interfaces, functions and operations necessary to ensure interoperability between conforming SCSI implementations. ISO/IEC 14776-322 (this standard) describes the functions. Conforming implementations may employ any design technique that does not violate interoperability.

This standard makes the following concepts from previous standards obsolete:

- optical-memory device type, model, commands (the ERASE, MEDIUM SCAN, READ GENERATION, READ UPDATED BLOCK and UPDATE BLOCK commands) and parameters (Optical-Memory mode page);
- write-once device type, model, commands and parameters;
- extent reservations and RESERVE/RELEASE reservations;
- sequential media model;
- rotational position locking model;
- relative addressing (including the RELADR bit in many CDBs) and the SET LIMITS commands;
- CHANGE DEFINITION, COMPARE, COPY, COPY AND VERIFY, LOCK UNLOCK CACHE, RESERVE, RELEASE, REZERO UNIT, SEEK, SEARCH DATA HIGH, SEARCH DATA EQUAL and SEARCH DATA LOW commands;
- third-party XOR operation and hybrid XOR operation model, commands (REBUILD, REGENERATE and XDWRITE EXTENDED commands) and mode page fields (XOR Control mode page MAXIMUM REGENERATE SIZE field, MAXIMUM REBUILD TRANSFER SIZE field and REBUILD DELAY field);
- the following mode pages and mode page fields:
 - * Caching mode page NON CACHE SEGMENT SIZE field;
 - * Flexible Disk mode page;
 - * Format Device mode page;
 - * Medium Types Supported mode page and all medium types in the mode parameter header;
 - * Notch and Partition mode page;
 - * the following Read-Write Error Recovery mode page fields:
 - * CORRECTION SPAN FIELD,
 - * HEAD OFFSET COUNT field and
 - * DATA STROBE OFFSET COUNT field;
 - * Rigid Disk Geometry mode page and
 - * Verify Error Recovery mode page VERIFY CORRECTION SPAN field;
- Device Status Output and Device Status Input diagnostic pages;
- DISABLE SAVING PARAMETERS (DSP) bit in the Format Unit parameter list;
- INTERERLEAVE FIELD in the format unit command and
- erase by-pass (EBP) bit in the WRITE and WRITE AND VERIFY commands. This bit was formerly reserved for the direct-access block device type, so is just marked reserved in this standard.

The relationship of this standard to other SCSI standards and related projects in the SCSI family of standards is shown Figure 1.

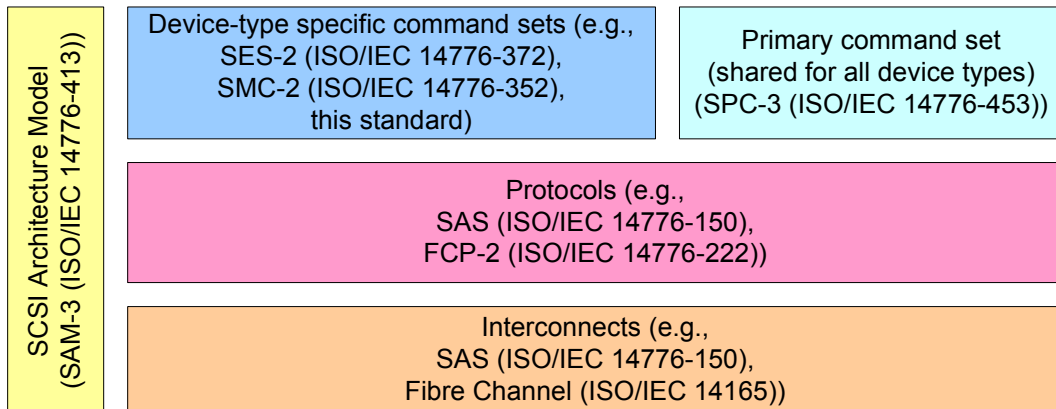


Figure 1 — SCSI document relationships

Figure 1 shows the general relationship of SCSI standards and does not imply a relationship with respect to hierarchy, protocol stack or system architecture.

The standard is organized as follows:

- Clause 1 "Scope" describes the relationship of this standard to the SCSI family of standards.
 - Clause 2 "Normative references" provides references to other standards and documents.
 - Clause 3 "Definitions, symbols, abbreviations, keywords and conventions" defines terms and conventions used throughout this standard.
 - Clause 4 "Direct-access block device type model" provides an overview of the direct-access block device type and the command set.
 - Clause 5 "Commands for direct-access block devices" defines commands specific to direct-access block devices.
 - Clause 6 "Parameters for direct-access block devices" defines diagnostic pages, mode parameters and pages, log pages and VPD pages specific to direct-access block devices.
- Informative Annex A (Numeric order codes) summarizes service action assignments for variable-length commands and commands using the SERVICE ACTION IN and SERVICE ACTION OUT operation codes.
- Informative Annex B (XOR command examples) provides examples of XOR command usage.
- Informative Annex C (CRC example in C) provides example C code for the protection information CRC.
- Bibliography

**INFORMATION TECHNOLOGY –
SMALL COMPUTER SYSTEM INTERFACE –
Part 322: Block commands-2 (SBC-2)**

1 Scope

This part of ISO/IEC 14776 defines the command set extensions to facilitate operation of SCSI direct-access block devices. The clauses of this standard, implemented in conjunction with the applicable clauses of SPC-3, fully specify the standard command set for SCSI direct-access block devices.

The objective of this standard is to

- a) permit an application client to communicate over a SCSI service delivery subsystem with a logical unit that declares itself to be a direct-access block device in the PERIPHERAL DEVICE TYPE field of the standard INQUIRY data (see SPC-3) and
- b) define commands unique to the direct-access block device type.

The set of SCSI standards specifies the interfaces, functions and operations necessary to ensure interoperability between conforming SCSI implementations. This standard is a functional description. Conforming implementations may employ any design technique that does not violate interoperability.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO/IEC 14776-342, *Information technology – Small computer system interface (SCSI) – Part 342: Controller commands-2 (SCC-2)*

ISO/IEC 14776-352 (under consideration), *Information technology – Small computer system interface (SCSI) – Part 352: Media changer commands-2 (SMC-2) [ANSI INCITS 382-2004]*

ISO/IEC 14776-364 (under consideration), *Information technology – Small computer system interface (SCSI) – Part 364: Multimedia commands-4 (MMC-4) [ANSI INCITS 401-2005]*

ISO/IEC 14776-372 (under consideration), *Information technology – Small computer system interface (SCSI) – Part 372: Enclosure services-2 (SES-2) [INCITS working draft T10#1559-D]*

ISO/IEC 14776-413 (under consideration), *Information technology – Small computer system interface (SCSI) – Part 413: Architecture model-3 (SAM-3)*

ISO/IEC 14776-453 (under consideration), *Information technology – Small computer system interface (SCSI) – Part 453: Primary commands-3 (SPC-3) [ANSI INCITS 408-2005]*

IEC 60027:2000, *Letter symbols to be used in electrical technology – Part 2: Telecommunications and electronics*