

INCITS 502-2019

American National Standard

*for Information Technology –
SCSI Primary Commands - 5
(SPC-5)*

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American National Standard
for Information Technology –
SCSI Primary Commands - 5
(SPC-5)

Secretariat

Information Technology Industry Council

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Abstract

This standard defines the device model for all SCSI devices. This standard defines the SCSI commands that are basic to every device model and the SCSI commands that may apply to any device model.

American National Standard

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Foreword (This foreword is not part of American National Standard INCITS 502-2019.)

The SCSI command set is designed to provide efficient peer-to-peer operation of SCSI devices (e.g., disks, tapes, media changers) by an operating system. The SCSI command set assumes an underlying command-response protocol.

The SCSI command set provides multiple operating systems concurrent control over one or more SCSI devices. However, proper coordination of activities between the multiple operating systems is critical to avoid data corruption. Commands that assist with coordination between multiple operating systems are described in this standard. However, details of the coordination are beyond the scope of the SCSI command set.

This standard defines the device model for all SCSI devices. This standard defines the SCSI commands that are basic to every device model and the SCSI commands that may apply to any device model.

Requests for interpretation, suggestions for improvement and addenda, or defect reports are welcome. They should be sent to the INCITS Secretariat, National Committee for Information Technology Standards, Information Technology Industry Council, 700 K Street NW, Suite 600, Washington, DC 20001.

This standard was processed and approved for submittal to ANSI by the InterNational Committee for Information Technology Standards (INCITS). Committee approval of the standard does not necessarily imply that all committee members voted for approval. At the time it approved this standard, INCITS had the following members:

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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.

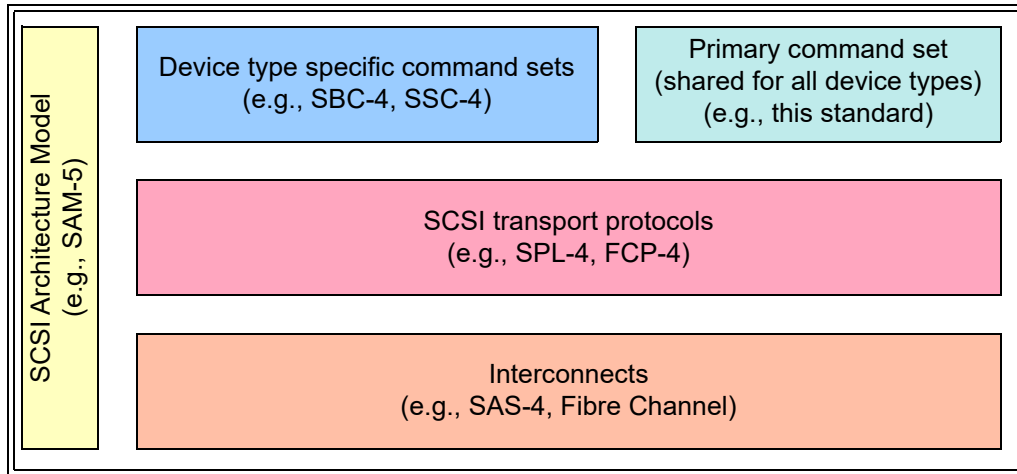


Figure 1 — SCSI document structure

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

American National Standard
for Information Technology –

SCSI Primary Commands (SPC-5)

1 Scope

The SCSI family of standards provides for many different types of SCSI devices (e.g., disks, tapes, media changers). This standard defines a device model that is applicable to all SCSI devices. Other command standards expand on the general SCSI device model in ways appropriate to specific types of SCSI devices.

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.

This standard defines the SCSI commands that are mandatory and optional for all SCSI devices. Support for any feature defined in this standard is optional unless otherwise stated. This standard also defines the SCSI commands that may apply to any device model.

The following commands, parameter data, and features defined in previous versions of this standard are made obsolete by this standard:

- a) the printer device type;
- b) the write-once device type;
- c) all features specific to SPI-5 (e.g., fields in the standard INQUIRY data);
- d) Power Conditions management that is specific to SAS-2;
- e) ACCESS CONTROLS well known logical unit;
- f) ACCESS CONTROL IN command;
- g) ACCESS CONTROL OUT command;
- h) Capability-based Command Security;
- i) CbCS extension descriptor;
- j) RECEIVE CREDENTIAL command;
- k) all requirements for the one-byte third-party copy list identifier (leaving only the four-byte identifier);
- l) the space function segment descriptor for the EXTENDED COPY command;
- m) the locate function segment descriptor for the EXTENDED COPY command; and
- n) the ability to manage thresholds in log parameters using the TMC field and ETC bit.

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.