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## Information technology – Small computer system interface (SCSI) –

## Part 115: Parallel Interface-5 (SPI-5)




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International Standard ISO/IEC 14776-115 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

# INTRODUCTION

ISO/IEC 14776-115 defines mechanical, electrical, timing requirements, command sets, and the task management delivery protocol requirements to transfer commands and data between SCSI devices attached to an SCSI parallel interface. The resulting interface facilitates the interconnection of computers and intelligent peripherals and thus provides a common interface standard for both system integrators and suppliers of intelligent peripherals.

# INFORMATION TECHNOLOGY - SMALL COMPUTER SYSTEM INTERFACE (SCSI) –

# Part 115: Parallel Interface-5 (SPI-5)

## 1 Scope

This part of ISO/IEC 14776 defines the mechanical, electrical, timing, and protocol requirements of the SCSI parallel interface to allow conforming SCSI devices to inter-operate. The SCSI parallel interface is a local I/O bus that may be operated over a wide range of transfer rates. The objectives of the SCSI parallel interface are:

a) To provide host computers with device independence within a class of devices. Thus, different disk drives, tape drives, printers, optical media drives, and other SCSI devices may be added to the host computers without requiring modifications to generic system hardware. Provision is made for the addition of special features and functions through the use of vendor-specific options. Reserved areas are provided for future standardization.

b) To provide compatibility such that conforming SPI-2, SPI-3 devices may interoperate with SPI-5 devices given that the systems engineering is correctly done. Conforming SPI-2, SPI-3, and SPI-5 devices should respond in an acceptable manner to reject SPI-5 protocol extensions. SPI-5 protocol extensions are designed to be permissive of such rejections and thus allow SPI-2 and SPI-3 devices to continue operation without requiring the use of the extensions.

The interface protocol includes provision for the connection of multiple SCSI initiator ports (i.e., SCSI devices capable of initiating an I/O process) and multiple SCSI target ports (i.e., SCSI devices capable of responding to a request to perform an I/O process). Distributed arbitration (i.e., bus-contention logic) is built into the architecture of this standard. A default priority system awards interface control to the highest priority SCSI device that is contending for use of the bus and an optional fairness algorithm is defined.

This standard defines the physical attributes of an input/output bus for interconnecting computers and peripheral 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 has made obsolete single-ended and multimode signaling alternatives. Implementations that use single-ended or multimode signaling alternatives should reference the SCSI Parallel Interface-2 standard (ISO/IEC 14776-112).

Figure 1 is intended to show the general structure of SCSI standards. The figure is not intended to imply a relationship such as a hierarchy, protocol stack, or system architecture.

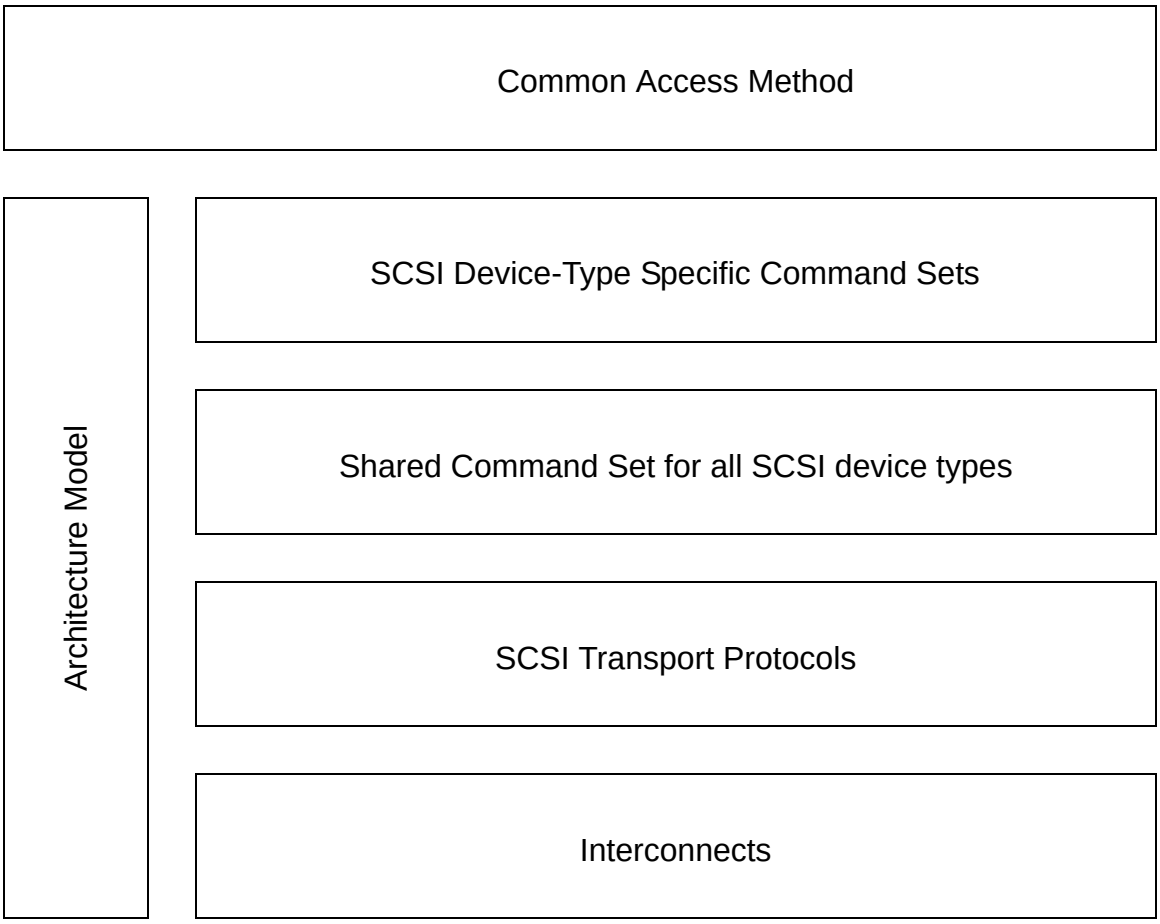


**Figure 1 - SCSI Document Structure**

## 2 Normative references

## 2.1 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document, including any amendments, applies.

## 2.2 Approved references

IEC 60512-2:1985, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods - Part 2: General examination, electrical continuity and contact resistance tests, insulation tests and voltage stress tests*

IEC 60512-11-7:1996, *Connectors for electronic equipment - Tests and measurements - Part 11-7: Climactic tests - Test 11g: Flowing mixed gas corrosion test*

ISO 129, *Technical Drawings - Dimensioning - General principles, definitions, methods of execution and special indications*

ISO 1660, *Technical Drawings - Dimensioning and tolerancing of profiles*

## 2.3 References under development

At the time of publication, the following referenced standards were still under development. For information on the current status of the document, or regarding availability, contact the relevant standards body or other organization as indicated.

ISO/IEC 14776-121, *Information technology - Small Computer System Interface (SCSI) - Part 121: Passive Interconnect Performance (PIP)*

ISO/IEC 14776-313, *Information technology - Small Computer System Interface (SCSI) - Part 313: Primary Commands-3 (SPC-3)*

ISO/IEC 14776-412, *Information technology - Small Computer System Interface (SCSI) - Part 412: Architecture Model 2 (SAM-2)*

## 2.4 Other references

For information on the current status of the listed documents, or regarding availability, contact the indicated organization.

EIA-700AOAE (SP-3651), *Detail Specification for Trapezoidal Connectors with Non-removable Ribbon Contacts on 1.27 mm Pitch Double Row used with Single Connector Attachments* (SCA-2)

EIA-700AOAF (SP-3652), *Detail Specification for Trapezoidal Connector 0.8 mm Pitch used with Very High Density Cable Interconnect (VHDCI)*

SFF-8451, *SCA-2 Unshielded Connections*

NOTE 1 - For more information on the current status of the document, contact the SFF committee at 408-867-6630 (phone), or 408-867-2115 (fax). To obtain copies of this document, contact the SFF committee at 14426 Black Walnut Court, Saratoga, CA 95070 at 408-867-6630 (phone) or 408-741-1600 (fax).

T10/1378DT, *SCSI Domain Validation technical report*

NOTE 2 - For more information on the current status of the T10 document, contact the INCITS Secretariat at 202-737-8888 (phone), 202-638-4922 (fax) or via Email at incits@itic.org. To obtain copies of this document, 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).