SFF Committee

SFF-8252

Specification for

2.5" Drive Form Factor with SFF-8784 Connector

The 2.5" specifications were standardized as EIA-720-A 2007/02

Subsequent to that date, this specification was developed.

This specification has been submitted to the EIA.

SFF Committee documentation may be purchased in electronic form.
SFF specifications are available at ftp://ftp.seagate.com/sff

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Specification for

2.5" Drive Form Factor with SFF-8784 Connector

Rev 0.5 August 30 2014

Secretariat: SFF Committee

Abstract: This specification defines the dimensions and tolerances for location of the SFF-8784 connector on SFF-8201 compliant 2.5" form factor drives.

This specification provides a common reference for systems manufacturers, system integrators, and suppliers. This is an internal working specification of the SFF Committee, an industry ad hoc group.

This specification is made available for public review, and written comments are solicited from readers. Comments received by the members will be considered for inclusion in future revisions of this specification.

Support: This specification is supported by the identified member companies of the SFF Committee.

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EXPRESSION OF SUPPORT BY MANUFACTURERS

The following member companies of the SFF Committee voted in favor of this industry specification.

EMC
HGST
IBM
LSI
Sandisk
TE Connectivity
Western Digital
Xyratex

The following member companies of the SFF Committee voted against this industry specification.

Seagate

The following member companies of the SFF Committee voted to abstain on this industry specification.

Amphenol
FCI
Finisar
Foxconn
Hewlett Packard
JDS Uniphase
Molex
Oclaro
Sumitomo
Toshiba

Update History:

Rev 0.3 (February 26, 2013)
- Removed connector content to be incorporated into SFF-8784
Rev 0.4 (May 8, 2013)
- Removed unnecessary content related to side mounting holes in section 3.
Rev 0.5 (August 30, 2014)
- Editorial changes for consistency between specifications in revised EIA-720.

Foreword

The development work on this specification was done by the SFF Committee, an industry group. The membership of the committee since its formation in August 1990 has included a mix of companies which are leaders across the industry.

When 2 1/2" diameter disk drives were introduced, there was no commonality on external dimensions e.g. physical size, mounting locations, connector type, connector location, between vendors.

The first use of these disk drives was in specific applications such as laptop portable computers and system integrators worked individually with vendors to develop the packaging. The result was wide diversity, and incompatibility.

The problems faced by integrators, device suppliers, and component suppliers led to the formation of the SFF Committee as an industry ad hoc group to address the marketing and engineering considerations of the emerging new technology.

During the development of the form factor definitions, other activities were suggested because participants in the SFF Committee faced more problems than the physical form factors of disk drives. In November 1992, the charter was expanded to address any issues of general interest and concern to the storage industry. The SFF Committee became a forum for resolving industry issues that are either not addressed by the standards process or need an immediate solution.

Those companies which have agreed to support a specification are identified in the first pages of each SFF Specification. Industry consensus is not an essential requirement to publish an SFF Specification because it is recognized that in an emerging product area, there is room for more than one approach. By making the documentation on competing proposals available, an integrator can examine the alternatives available and select the product that is felt to be most suitable.

SFF Committee meetings are held during T10 weeks (see www.t10.org), and Specific Subject Working Groups are held at the convenience of the participants. Material presented at SFF Committee meetings becomes public domain, and there are no restrictions on the open mailing of material presented at committee meetings.

Most of the specifications developed by the SFF Committee have either been incorporated into standards or adopted as standards by EIA (Electronic Industries Association), ANSI (American National Standards Institute) and IEC (International Electrotechnical Commission).

If you are interested in participating or wish to follow the activities of the SFF Committee, the signup for membership and/or documentation can be found at:
www.sffcommittee.com/ie/join.html

The complete list of SFF Specifications which have been completed or are currently being worked on by the SFF Committee can be found at:
ftp://ftp.seagate.com/sff/SFF-8000.TXT

If you wish to know more about the SFF Committee, the principles which guide the activities can be found at:
ftp://ftp.seagate.com/sff/SFF-8032.TXT

Suggestions for improvement of this specification will be welcome. They should be sent to the SFF Committee, 14426 Black Walnut Ct, Saratoga, CA 95070.

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2.5" Drive Form Factor with SFF-8784 Connector

1. Scope of 8252

This specification defines the dimensions and tolerances for location of the SFF-8784 connector on SFF-8201 compliant 2.5" form factor drives.

1.1 Application Specific Criteria

The environment for the 2.5" Drive Form Factor is any computer, cabinet, or enclosure connecting to one or more drives in a restricted packaging environment.

The connector does not protrude beyond the drive form factor.

2. References

The SFF Committee activities support the requirements of the storage industry, and it is involved with several standards.

2.1 Industry Documents

The following standards are relevant to many SFF Specifications.

- ASME Y14.5M Dimensioning and Tolerancing
- EIA-720 SFF 2.5" Disk Drives (nee SFF-8201)
- EIA-966 Serial Attachment 3 Gbs 2x Unshielded Connector (nee SFF-8482)
- INCITS 417-2006 Serial Attached SCSI - SAS 1.1 (nee T10/1601-D)
- INCITS 457-2010 Serial Attached SCSI - SAS 2 (nee T10/1760-D)
- INCITS 478-2011 Serial Attached SCSI - SAS 2.1 (nee T10/2125-D)
- SFF-8201 2.5" Form Factor Drive Dimensions
- SFF-8223 2.5" Form Factor Drive w/Serial Attachment Connector
- SFF-8784 0.8mm Card Edge Drive Connector
- T10/2212-D Serial Attached SCSI - SAS 3

Additional information concerning Serial ATA may be found at www.serialata.org.

2.2 SFF Specifications

There are several projects active within the SFF Committee. The complete list of specifications which have been completed or are still being worked on are listed in the specification at ftp://ftp.seagate.com/sff/SFF-8000.TXT

2.3 Sources

Those who join the SFF Committee as an Observer or Member receive electronic copies of the minutes and SFF specifications (http://www.sffcommittee.com/ie/join.html).

Copies of ANSI standards may be purchased from the InterNational Committee for Information Technology Standards (http://www.techstreet.com/incitsgate.tmpl).

2.4 Conventions

The dimensioning conventions are described in ASME-Y14.5M, Geometric Dimensioning and Tolerancing. All dimensions are in millimeters, which are the controlling dimensional units (if inches are supplied, they are for guidance only).

The ISO convention of numbering is used i.e., the thousands and higher multiples are separated by a space and a period is used as the decimal point. This is equivalent to the English/American convention of a comma and a period.

American	French	ISO
0.6	0,6	0.6
1,000	1 000	1 000
1,323,462.9	1 323 462,9	1 323 462.9

3. General Description

This specification defines a drive that can be directly inserted into the backplane of a cabinet, without the need for a cable, and provides information necessary to assist manufacturers in the systems integration of small form factor disk drives.

Alternately, a cable may be used to supply power and to connect to the data port(s) of the drive.

This specification allows only one location for the interface connector on the drive. The scale and location of this connector enables the host system to utilize a device which is entirely within the HDA form factor.

The connector allows for the attachment of various serial interfaces.

Care must be taken in the application to avoid exerting excessive stress on the interface. Backplane configurations need to pay particular attention so that a connector is not damaged due to excessive side loading, compressive forces, or from supporting the weight of the device.

TABLE 3-1 FORM FACTOR DIMENSIONS

Dimension		Millimeters	Inches
A 1		69.85	2.750
A 2		1.00	0.039
A 3		9.15	0.360
A 4		0.60	0.024
A 5		0.25	0.010
A 6		2.60	0.102
A 7		10.40	0.409
A 8		28.25	1.112
A 9	Min	4.80	0.189
A10	Min	6.28	0.247
A11	Min	1.60	0.063
A12	Min	2.40	0.094
A13		3.90	0.154
A14		0.40	0.016
A15		100.3	3.949

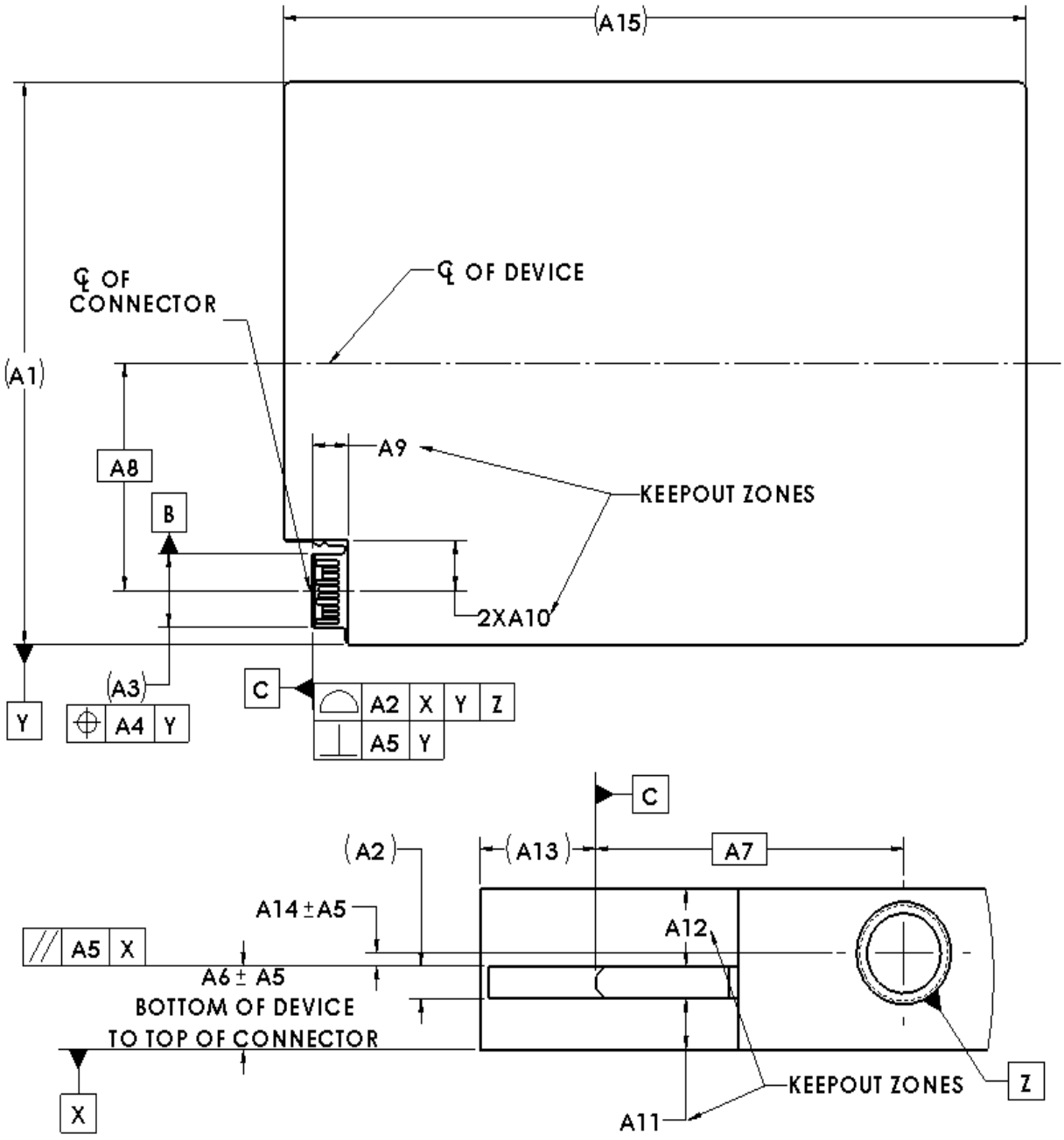

FIGURE 3-1 FORM FACTOR WITH SFF-8784 CONNECTOR LOCATION