

New Product Release Summary for 3M Authorized Sales Reps and Distributors

3M™ Internal MiniSAS HD to Internal MiniSAS 36-Position Hybrid Cable Assembly, 8U Series

Issue Number: 877
Date: March 28, 2014

Product Description

3M is releasing internal hybrid assemblies, with miniSAS HD (SFF-8643) on one end, and miniSAS 36-position (SFF-8087) on the other. These assemblies use the popular 3M™ Twin Axial Cable SL8800 Series. 3M already sells symmetric assemblies using these SAS form factors. Hybrid assemblies allow integration of systems requiring connection from internal HD miniSAS to internal miniSAS. Customers may be trying to integrate newer and older equipment, or using some new equipment that has not adopted SFF-8643 as an interface. Both of these SFF standards are part of Serial Attached SCSI (SAS) 3.0, the latest version of the specification issued. Cable assemblies are available with or without sidebands.

Market Segments/Customer Applications

Server/Storage

- HBAs (Host Bus Adapters) servers
- Host system boards
- Storage racks
- Switches
- Blades
- Storage bridge bay
- RAIDs (Redundant Array of Individual Disks)
- JBODs (Just a Bunch of Disks)

Computer Applications

- Tower and rackmount computers
- Workstations

Competitive Situation

As with other SAS assemblies, there are several competitors with capability and product. Continue to seek out the high-value opportunities, and particularly applications that benefit from the unique mechanical advantages of 3M Twin Axial Cable.

- FCI – may use 3M Twin Axial Cable SL8800 Series, or discrete pair. They are not a big SFF-8087 supplier.
- Molex – discrete pair twin axial construction.
- Amphenol – discrete pair ribbon construction, some of their own ribbon construction.
- Serial Cables – may use 3M Twin Axial Cable, SL8800 Series, or discrete pair.



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Selling 3M's Value Proposition

The low-profile ribbon design of the 3M™ Twin Axial Cable allows for greater density applications and lower airflow obstruction. The cable's bendability allows for higher routing freedom in high-density applications with no significant impact to performance.

Sales Support Materials

Configuration	Part Number	Customer Drawing
Internal HD MiniSAS to Internal miniSAS 36P Hybrid Cable Assembly	8UH4-XXX13-00-X.XX	78-5100-2622-8

Documents	Document Number	
Updated Internal MiniSAS Sales Sheet	80-4000-1997-4	
Internal MiniSAS HD to MiniSAS 36P Hybrid Cable Assembly PDS	78-5102-0195-3	

Ordering Information/Lead Time

3M PART NUMBERING SCHEME

BUH4 - XXX 13 - 00 - X.XX

"LENGTH" IN METERS

"LENGTH" TOLERANCE

±10MM FOR "LENGTH" 0.5 METER MAX

±15MM FOR "LENGTH" MORE THAN 0.5 METER

TABLE 1: DESCRIPTION FOR "XXX"

XXX	PINOUT	BRAIDED SLEEVE
BA1	STD MINISAS 4i TO STD MINISAS HD 4i, WITH SIDEBANDS (SEE TABLE 2)	YES
BA2	STD MINISAS 4i TO STD MINISAS HD 4i, WITH SIDEBANDS (SEE TABLE 2)	NO
DB1	MINISAS 4i TO MINISAS HD 4i, WITHOUT SIDEBANDS (SEE TABLE 3)	YES
DB2	MINISAS 4i TO MINISAS HD 4i, WITHOUT SIDEBANDS (SEE TABLE 3)	NO

Pricing and Samples

Samples will be available through the Sample Center.

Related Products

- 3M™ High Routability Internal miniSAS Cable Assembly, 36-position, 8F36 Series
- 3M™ High Routability Internal miniSAS Cable Assembly, 68-position, 8F68 Series
- 3M™ High Routability Internal miniSAS HD Cable Assembly, 8US4 Series

New Product Release Summary for 3M Authorized Sales Reps and Distributors 3M™ Internal MiniSAS HD to Internal MiniSAS 36-Position Hybrid Cable Assembly

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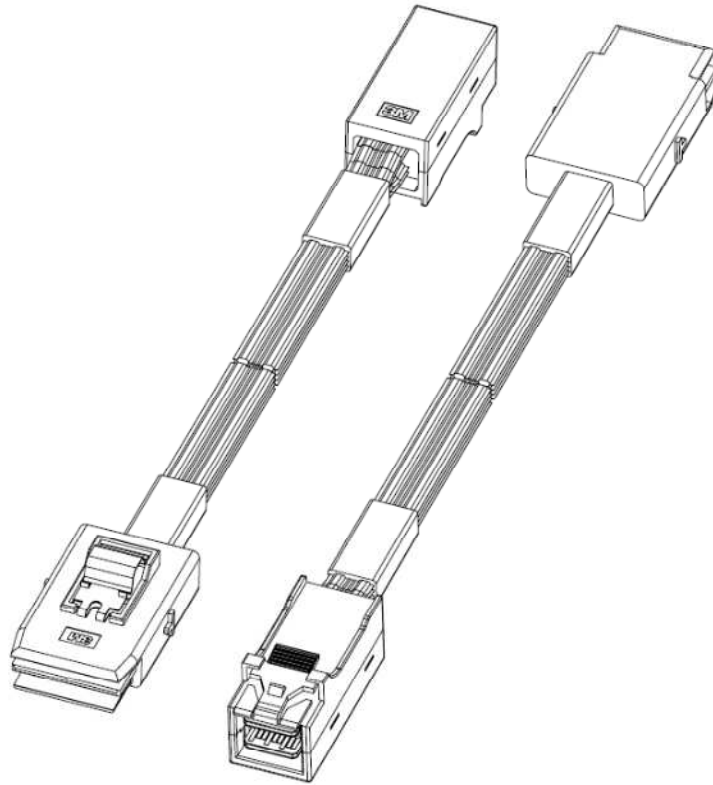


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Product Specification

3M™ Internal miniSAS HD to miniSAS 36P Hybrid Cable Assembly



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1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for the 3M Internal miniSAS HD to miniSAS 36P Hybrid Cable Assembly.

2. REFERENCE DOCUMENTS

The following documents are referred to form a part of this specification. Unless otherwise specified, latest edition of the reference documents applies. In the event of conflict between requirements of the references and 3M specification, 3M specification shall take precedence.

2.1. Commercial standards, specifications and report

- 2.1.1. EIA-364
- 2.1.2. SAS 2.1 and SAS 3.0
- 2.1.3. SFF-8643
- 2.1.4. SFF-8087

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of design, construction and physical dimensions specified on applicable product drawing.

3.2. Materials

3.2.1. Internal miniSAS HD

- 3.2.1.1. Housing
 - Material : High Temperature Thermoplastic
 - Flammability : UL94V-0
- 3.2.1.2. Paddlecard
 - Material : FR4
 - Mating pad underplate : 1.27 μm (50 $\mu\text{''}$) Ni MIN
 - Mating pad finish : 0.76 μm (30 $\mu\text{''}$) Au MIN
- 3.2.1.3. High Speed Ribbon Twin Axial Cable
See related specification PS-0105 for ribbon 3M™ Twin Axial Ribbon Cable material information.

3.2.2. Internal miniSAS 36P

3.2.2.1. Housing

Material : High Temperature Thermoplastic
Flammability : UL94V-0

3.2.2.2. Paddlecard

Material : FR4
Mating pad underplate : 2.54 μm (100 $\mu\text{''}$) Ni MIN
Mating pad finish : 0.76 μm (30 $\mu\text{''}$) Au MIN

3.2.2.3. High Speed Ribbon Twin Axial Cable

See related specification PS-0079 for ribbon 3M™ Twin Axial Ribbon Cable material information.

3.3. Ratings

3.3.1. Current rating: 0.5 A/contact

3.3.2. Operating temperature: 0°C to +80°C

3.4. Performance and Test Description

Product is designed to meet electrical, mechanical and environmental performance requirements specified in section 3.5. All tests are performed at ambient environmental conditions per EIA-364 unless otherwise specified.

3.5. Test Requirements and Procedures Summary

Test Description	Test Condition	Requirement
Visual examination	Inspection of product for abnormality/defects.	No visual defects
Critical dimension measurement	Measure dimensions specified in applicable product drawing.	Product shall meet requirements of applicable product drawing.

Test Description	Test Condition	Requirement
ELECTRICAL		
Dielectric withstanding voltage	EIA-364-20, Method B Subject a voltage of 300 VDC for 1 minute at sea level between adjacent contacts of mated and unmated connector assemblies.	No defect or breakdown between adjacent contacts.
Insulation resistance	EIA-364-21 Subject a voltage of 100 VDC for 1 minute between adjacent contacts of mated and unmated connector assemblies.	1000 MΩ minimum between adjacent contacts.
MECHANICAL		
Mechanical shock	EIA-364-27	No damage. 20 mΩ maximum change from initial (baseline) contact resistance.
Durability	EIA-364-09 Perform 250 unplug/plug cycles.	No evidence of physical damage.
ENVIRONMENTAL		
Thermal shock	EIA-364-32, Method A, Test Condition I -55°C to +85°C, 10 cycles, 1/2 hour at each temperature extreme.	20 mΩ maximum change from initial (baseline) contact resistance.
Vibration	EIA-364-28, Test Condition VII, Test condition letter D 3.10G RMS between 20 and 500 Hz at 15 minutes in each of 3 mutually perpendicular directions.	No damage. No discontinuity longer than 1μsec allowed. 20 mΩ maximum change from initial (baseline) contact resistance.

For detailed electrical, mechanical and environmental test requirements and procedures, please refer the following documents:

- (i) Internal miniSAS HD : 78-5102-0147-4
- (ii) Internal miniSAS 36P : PS-0082

Unless otherwise noted, references to industry specifications are intended to indicate substantial compliance to the material elements of the specification. Such references should not be construed as a guarantee of compliance to all requirements in a given specification.

Halogen-free is defined as both (1) no halogen compounds are intentionally added to the product or used in the manufacturing process for the product, and (2) any impurities present are less than 900 ppm bromine, less than 900 ppm chlorine, and/or less than 1500 ppm total bromine and chlorine. The latter are the levels set forth in certain industry standards for printed circuit boards, such as the International Electrotechnical Commission (IEC) 61249-2-21 standard.

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B

3M PART NUMBERING SCHEME

8UH4 - XXX 13 - 00 - X.XX

▽▽LEN

▽▽LEN

± 10

± 15

TABLE 1: DESCRIPTION FOR

A

XXX	PINOUT
BA1	STD MINISAS 4i TO STD MINISAS HD 4i, WITH S
BA2	STD MINISAS 4i TO STD MINISAS HD 4i, WITH S
DB1	MINISAS 4i TO MINISAS HD 4i, WITHOUT SIDEB
DB2	MINISAS 4i TO MINISAS HD 4i, WITHOUT SIDEB

B

B12	GROUND	—	GROUND	B6
B11	SIDEBAND	↔	SIDEBAND	D1
B10	SIDEBAND	↔	SIDEBAND	C1
B9	SIDEBAND	↔	SIDEBAND	B1
B8	SIDEBAND	↔	SIDEBAND	A1
B7	GROUND	—	GROUND	A6
B6	T×1-	→	R×1-	A5
B5	T×1+	→	R×1+	A4
B4	GROUND	—	GROUND	A3
B3	T×0-	→	R×0-	B5
B2	T×0+	→	R×0+	B4
B1	GROUND	—	GROUND	B3
A18	GROUND	—	GROUND	C9
A17	R×3-	←	T×3-	C8
A16	R×3+	←	T×3+	C7
A15	GROUND	—	GROUND	D9
A14	R×2-	←	T×2-	D8
A13	R×2+	←	T×2+	D7
A12	GROUND	—	GROUND	D6
A11	SIDEBAND	↔	SIDEBAND	D2
A10	SIDEBAND	↔	SIDEBAND	C2
A9	SIDEBAND	↔	SIDEBAND	B2
A8	SIDEBAND	↔	SIDEBAND	A2
A7	GROUND	—	GROUND	C6
A6	R×1-	←	T×1-	C5
A5	R×1+	←	T×1+	C4
A4	GROUND	—	GROUND	C3
A3	R×0-	←	T×0-	D5
A2	R×0+	←	T×0+	D4
A1	GROUND	—	GROUND	D3

SYMBOLS

→	←	HIGH SPEED SERIAL DIFFERENTIAL PAIRS
→	←	
—		SIGNAL RETURN
↔		POWER AND MANAGEMENT INTERFAC

TABLE 2: WITH SIDEBANDS

A

3M Authorized Distributor Stocking Package Information

Author	L. Powell	Product Manager	Charlie Staley
Date	31-Mar-14		
Product Family	3M™ Internal MiniSAS HD to Internal MiniSAS 36-Position Hybrid Cable Assembly, 6U Series		
Where to locate in Catalog	<ul style="list-style-type: none"> Cable Assemblies/Jumpers/Leads/Cascade Cables Data Center/HPC Cabling 		
Description	<p>Paragraph New 3M™ Internal MiniSAS HD to Internal MiniSAS 36-Position Hybrid Cable Assembly features miniSAS HD (SFF-8643) on one end, and miniSAS 36-position (SFF-8087) on the other. The assembly uses the popular 3M™ Twin Axial Cable SL8600 Series. 3M already offers symmetric assemblies using these SAS form factors. Hybrid assemblies allow integration of systems requiring connection from internal HD miniSAS to internal miniSAS. Customers may be trying to integrate newer and older equipment, or using some new equipment that has not adopted SFF-8643 as an interface. Both of these SFF standards are part of Serial Attached SCSI (SAS) 3.0, the latest version of the specification issued. Cable assemblies are available with or without sidebands.</p> <p>Bullet <ul style="list-style-type: none"> Features miniSAS HD (SFF-8643) on one end, miniSAS 36-position (SFF-8087) on the other High Bandwidth Flexible Made with the popular 3M™ Twin Axial Cable SL8600 Series 100 stress SAS Available with or without sidebands. </p> <p>Applications <ul style="list-style-type: none"> Server/Storage HBA's (Host Bus Adapters) servers Host system boards Storage racks Switches Disks Storage bridge bay RAIDs (Redundant Array of Individual Disks) BOOs (Just a Bunch of Disks) Computer Applications Tower and rackmount computers Workstations </p>		
Digital Images	http://www.mds.com/collectors/3m.com/index.php?m=dmweb7&bumid=246678		

3M Part Number	3M Stock Number	UPC (11 digit)	UPC (14 digit)	Description	TS Drawing (EIA-540)	Box \$	Start Up MOQ (Standard)	Start Up MOQ (Special)	Re-Order MOQ	Lead Time (Days)	Recommended Initial Buy Quantity	Packaging Format	Reqs/Tray/Case/Box/By Carton	Parts per Tray/Tray/Case	International Harmonized Code Schedule B Export Code	ECCN Number	Country of Origin	Is Part STATIC Sensitive	Is Part RoHS Compliant (Yes or No)	Is Part LEAD(Pb) FREE	Minimum Quantity Local (MQL)	Is Dry Pack (Request)	Replenish (Yes or No)
SLH4-BA113-00-1.00	XP-2000-2380-0	88877199924	3588871999244	3M™ Internal MiniSAS HD to Internal MiniSAS 36-Position Hybrid Cable Assembly, 6U Series	78-5100-2622-B		50	50	500	60	50	1	1	1	8544-42-2000	EARS9	USA	Yes	Yes	N/A	No	Yes	

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3M Authorized Distributor Stocking Package Information

Author	L. Powell	Product Manager	Charlie Staley
Date	1-Apr-14		
Product Family	3M™ Internal MiniSAS HD to Internal MiniSAS 36-Position Hybrid Cable Assembly, 6UH4 Series		
Where to locate in Catalog	<ul style="list-style-type: none"> Cable Assemblies/Jumpers/Leads/Cascade Cables Data Center/HPC Cabling 		
Description	<p>Paragraph</p> <p>New 3M™ Internal MiniSAS HD to Internal MiniSAS 36-Position Hybrid Cable Assembly features miniSAS HD (SFF-8643) on one end, and miniSAS 36-position (SFF-8087) on the other. The assembly uses the popular 3M™ Twin Axial Cable SL8600 Series. 3M already offers symmetric assemblies using these SAS form factors. Hybrid assemblies allow integration of systems requiring connection from internal HD miniSAS to internal miniSAS. Customers may be trying to integrate newer and older equipment, or using some new equipment that has not adopted SFF-8643 as an interface. Both of these SFF standards are part of Serial Attached SCSI (SAS) 3.0, the latest version of the specification issued. Cable assemblies are available with or without sidebands.</p> <p>Bullet</p> <ul style="list-style-type: none"> Features miniSAS HD (SFF-8643) on one end, miniSAS 36-position (SFF-8087) on the other High Bandwidth Flexible Made with the popular 3M™ Twin Axial Cable SL8600 Series 100 stress SAS Available with or without sidebands. <p>Applications</p> <ul style="list-style-type: none"> Server/Storage HBA's (Host Bus Adapters) servers Host system boards Storage racks Switches Disks Storage bridge bay RAIDs (Redundant Array of Individual Disks) BOOs (Just a Bunch of Disks) Computer Applications Tower and rackmount computers Workstations 		
Digital Images	http://www.mds.com/collectors/3m.com/index.php?m4mweb7&itemid=282614		

3M Part Number	3M Stock Number	UPC (11 digit)	UPC (14 digit)	Description	TS Drawing (EIA-540)	RoHS	Start Up MOQ (Standard)	Start Up MOQ (Special)	Re-Order MOQ	Lead Time (Std)	Recommended Initial Buy Qty	Packaging Config	Reqs/Tray/Case/Box/By Case	Parts per Tray/Case/Box	International Harmonized Code Schedule B Export Code	ECCN Number	Country of Origin	Is Part STATIC Sensitive	Is Part RoHS Compliant (Yes or No)	Is Part LEAD(Pb) FREE	Minimum Quantity Local (MQL)	Is Dry Pack (Request)	Replenish (Yes or No)
SLH4-BA113-00-1.00	XP-2000-2380-0	88877199924	3588871999244	3M™ Internal MiniSAS HD to Internal MiniSAS 36-Position Hybrid Cable Assembly, 6U Series	78-5100-2622-6		50	50	500	60	50	1	1	1	8544-42-2000	EARS9	USA	Yes	Yes	N/A	No	Yes	

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