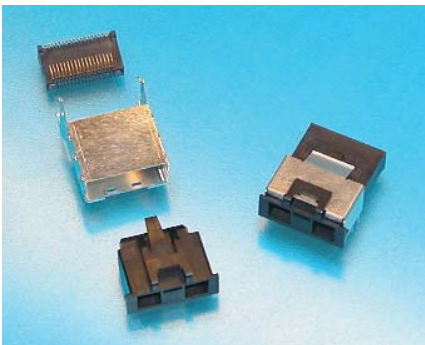


## EVERCLEAR Mini Multi-Lane High Speed Interconnects & Cable Assemblies



### DESCRIPTION

Tyco Electronics' EVERCLEAR product family is the next generation high speed multi-lane interconnect for both internal and external solutions, including both receptacles and cable assemblies. The system is designed to be compliant to SFF-8086, 8087 and 8088 standards.

### APPLICATIONS

- High Speed I/O
- Multiple Channels Interconnects
- Switches for Fibre Channel and Infiniband Standards
- Internal and External SAS and SATA

### KEY FEATURES

- 26 and 36 position receptacles
- Keying options available
- Tested at data rates beyond 10 Gb/s
- High density 0.8mm contact spacing
- SMT PCB attachment for high speed signaling
- Cable assemblies available equalized and unequalized
- Standard and custom cable assembly lengths
- Robust pull tab latch release

### TECHNICAL DOCUMENTS

- Product Specification: 108-2234
- Qualification Test Report: 501-638

### INDUSTRY STANDARDS

- SFF-8087: Internal 36 Position Mini SAS
- SFF-8088: Internal 26 Position Mini SAS with Keys

### FOR MORE INFORMATION

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USA: 1-800-522-6752

Canada: 1-905-470-4425

UK: 44-141-810-8967

Japan: 81-44-844-8013

PRODUCT APPLICATION

Internal Mini-SAS, SATA



Connectors:

	SMT Receptacle (36 pos)	Solder tail length (shell)	Shell	Combined Assembly
Vertical	1888020-4	2.0 mm (.08 in)	1888413-4	1888174-2
	1888020-4	2.8 mm (.11 in)	1888413-6	1888174-4
	1888020-4	3.5 mm (.14 in)	1888413-8	1888174-6
Right Angle	1761987-8	2.0 mm (.08 in)	1888021-4	1888019-2
	1761987-8	2.8 mm (.11 in)	1-1888021-2	1888019-6
	1761987-8	3.5 mm (.14 in)	1-1888021-6	1888019-8

Receptacles and shells can be ordered separately or as a combined assembly for single step processing.

External Mini-SAS, SATA



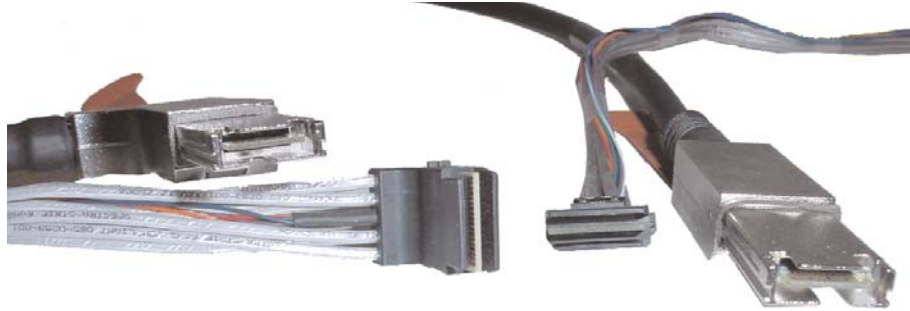
Connectors:

	1 Port	2 Port	3 Port	4 Port
Receptacle (26 position)	1761987-7	1761987-7	1761987-7	1761987-7
Shield (universal key #4) *	1888321-1	1888321-2	1888321-3	1888321-4

\* Other key and port configurations available, see Tyco Electronics' drawing 1888321.

PRODUCT APPLICATION

Internal & External Mini SAS Cable Assemblies



	0.23 Meter	0.30 Meter	0.5 Meter	1.0 Meter
<b>Internal Cable Assembly</b>	1902752-2	1902752-3	1902752-1	1902752-4



Type	P/N	Length	AWG	Equalization
Mini SAS to Mini SAS Standard keying (2-4, 4-6)	1928391-1	0.5 meter	28	Unequalized
	1928391-2	1.0 meter	28	Unequalized
	1928391-3	2.0 meters	28	Equalized
	1928391-4	3.0 meters	28	Equalized
	1928391-5	4.0 meters	28	Equalized
	1928391-6	5.0 meters	28	Equalized
	1928391-7	6.0 meters	24	Equalized
	1928391-8	4.0 meters	24	Equalized
	1928391-9	5.0 meters	24	Equalized
Mini SAS to Mini SAS Universal Keying (2-4-6,6-4-2)	2053534-1	0.5 meter	28	Unequalized
	2053534-2	1.0 meter	28	Unequalized
	2053534-3	2.0 meters	28	Equalized
	2053534-4	3.0 meters	28	Equalized
	2053534-5	4.0 meters	28	Equalized
	2053534-6	5.0 meters	28	Equalized
	2053534-7	6.0 meters	24	Equalized
	2053534-8	4.0 meters	24	Equalized
	2053534-9	5.0 meters	24	Equalized
Mini SAS to SAS 4X Universal Key (2-4-6)	1928392-1	0.5 meter	28	Unequalized
	1928392-2	1.0 meter	28	Unequalized
	1928392-3	2.0 meters	28	Unequalized
	1928392-4	3.0 meters	28	Equalized
	1928392-5	4.0 meters	28	Equalized
	1928392-6	5.0 meters	28	Equalized
	1928392-7	6.0 meters	28	Equalized

Other keying options are available.

## Cable Assembly Options:

- Custom cable lengths
- Customized Equalization
- Various keying options
- Internal assembly side bands
- Right angle connector assemblies

\*Please contact Tyco Electronics for specific requirements or additional information.



## ELECTRICAL TESTING

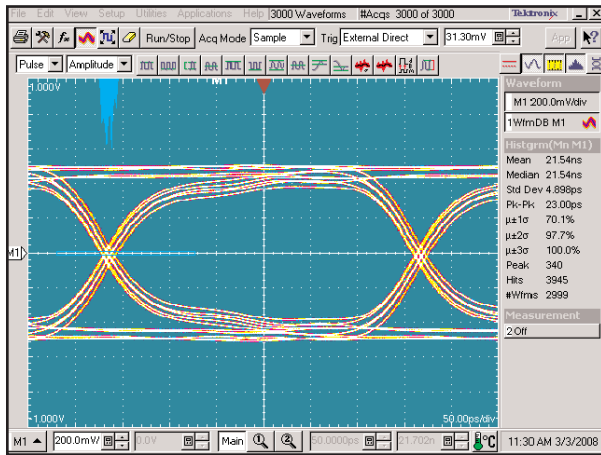
### EVERCLEAR External Cable Assembly Test Results Summary

Cable AWG	Cable Length [M]	Impedance 100+/-10 OHMS		Intra-Pair Skew 50 PS Max	ISI 60 PS Max	Insertion Loss	Near-End Cross Talk
		Min.	Max.				
28	0.5	90.9	105.6	3.1	19	See Report	See Report
28	1	90.9	105.6	1.8	23	See Chart	See Chart
28	2	90.9	105.4	2.6	17	See Report	See Report
28	3	90.8	107.6	4.9	23	See Report	See Report
24	4	91.6	104.6	2.6	14	See Report	See Report
24	5	91.8	103.6	4.3	16	See Chart	See Chart
24	6	91.7	102.8	0.6	17	See Report	See Report

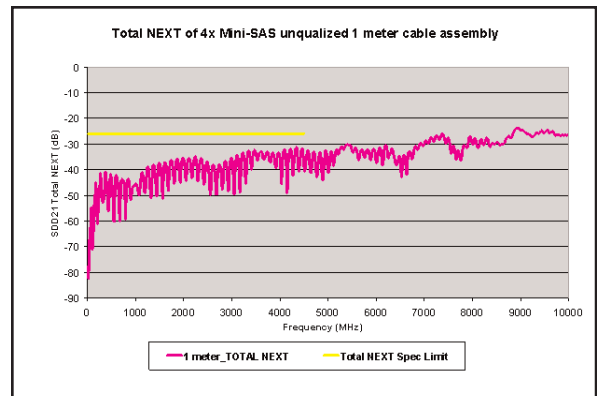
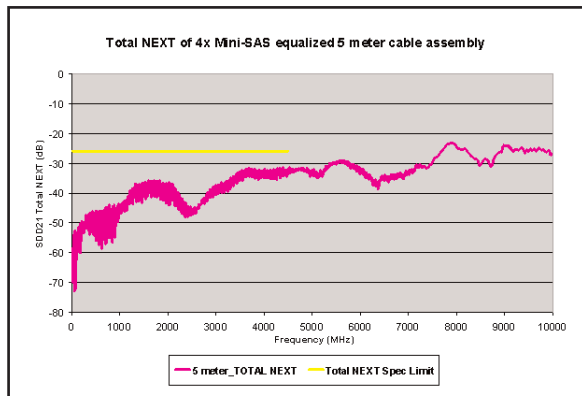
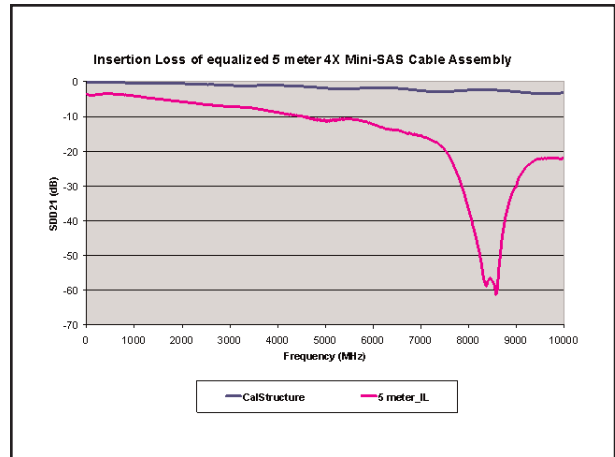
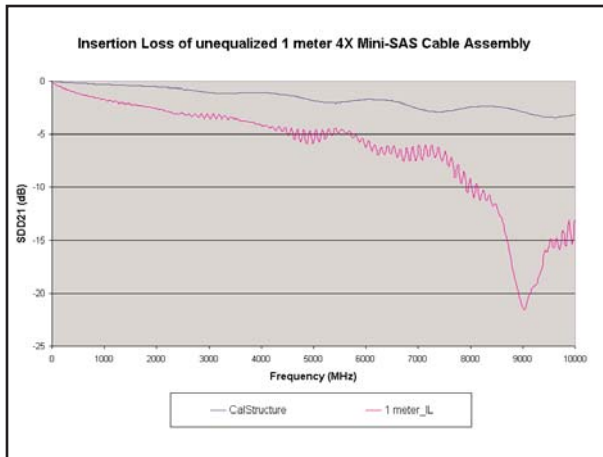
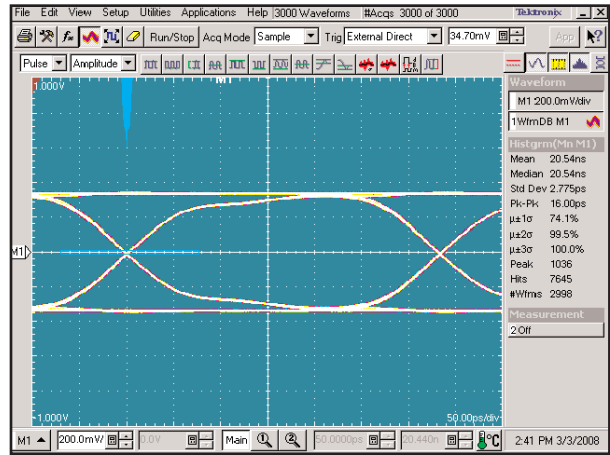
Test Report available from Tyco Electronics upon request.

ISI Through Cable Assembly Measurements

1m Cable Assembly (Unequalized)



5m Cable Assembly (Equalized)



## Restriction on the use of Hazardous Substances (RoHS)

At Tyco Electronics, we're ready to support your RoHS requirements. We've assessed more than 1.5 million end items/components for RoHS compliance, and issued new part numbers where any change was required to eliminate the restricted materials. Part numbers in this catalog are identified as:

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NOTE: For purposes of this Catalog, included within the definition of RoHS Compliant are products that are clearly "Out of Scope" of the RoHS Directive such as hand tools and other non-electrical accessories.

NOTE: Information regarding RoHS compliance is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information provided by our suppliers. This information is subject to change. For latest compliance status, refer to our website referenced at right.

## Getting the Information You Need

Our comprehensive on-line RoHS Customer Support Center provides a forum to answer your questions and support your RoHS needs. A RoHS FAQ (Frequently Asked Questions) is available with links to more detailed information. You can also submit RoHS questions and receive a response within 24 hours during a normal work week.

The Support Center also provides:

- Cross-Reference from Non-compliant to Compliant Products
- Ability to browse RoHS Compliant Products in our on-line catalog
- Downloadable Technical Data Customer Information Presentation
- More detailed information regarding the definitions used above
- So whatever your questions when it comes to RoHS, we've got the answers at [www.tycoelectronics.com/leadfree](http://www.tycoelectronics.com/leadfree)



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