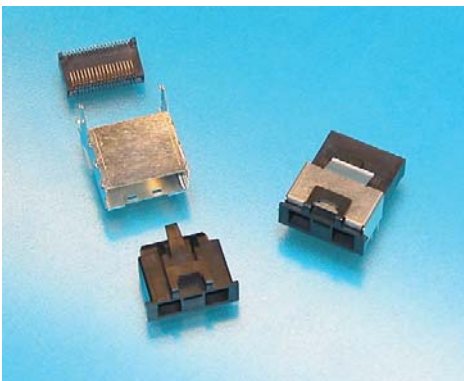




EVERCLEAR Mini Multi-Lane High Speed Interconnects & Cable Assemblies



DESCRIPTION

Tyco Electronics' EVERCLEAR product family is the next generation high speed multi-lane interconnect for internal and external receptacle applications and external cable assemblies. The system is designed to meet 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
- Potential for 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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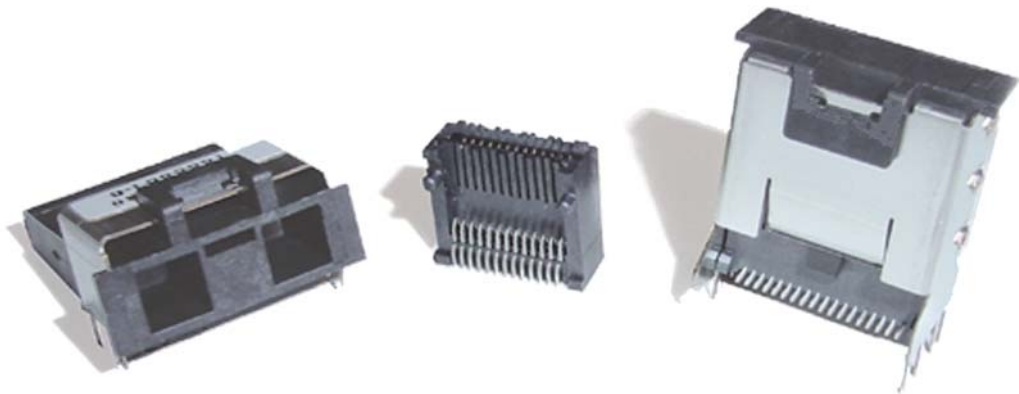
Japan: 81-44-844-8013

InfiniBand is a trademark of the InfiniBand Trade Association.
FCIA is a trademark of Fibre Channel Industry Association.

 **Tyco Electronics**
Our commitment. Your advantage.

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.

Note: Part Numbers are RoHS Compliant.

PRODUCT APPLICATION

External Mini SAS Cable Assemblies



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.

Note: Part Numbers are RoHS Compliant.

Cable Assembly Options:

- Custom cable lengths
- Right angle connector assemblies
- Various keying options
- Customized Equalization

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



ELECTRICAL TESTING

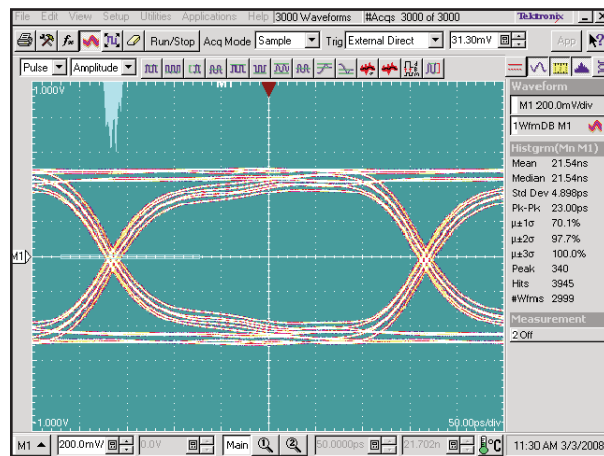
EVERCLEAR External Cable Assembly Test Results Summary

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

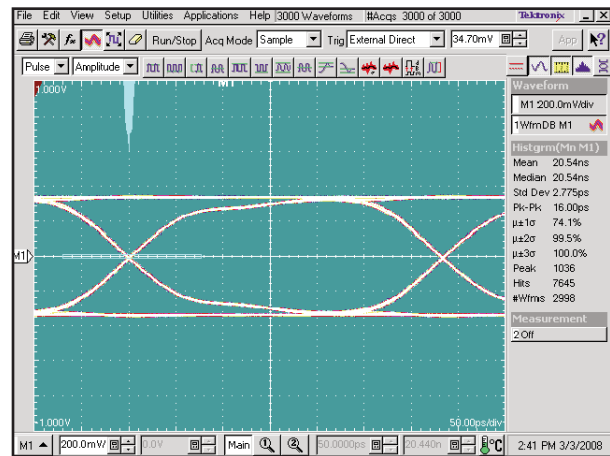
Test Report available from Tyco Electronics upon request.

ISI Through Cable Assembly Measurements

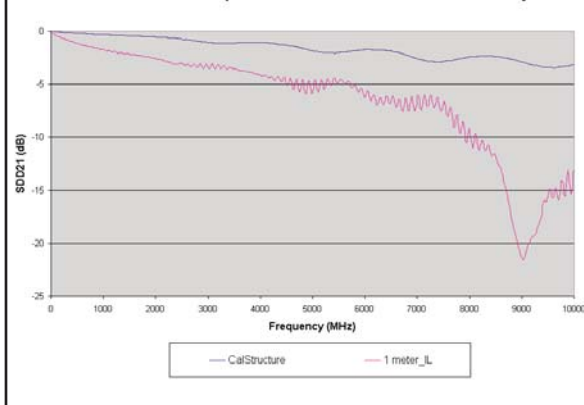
1m Cable Assembly (Unequalized)



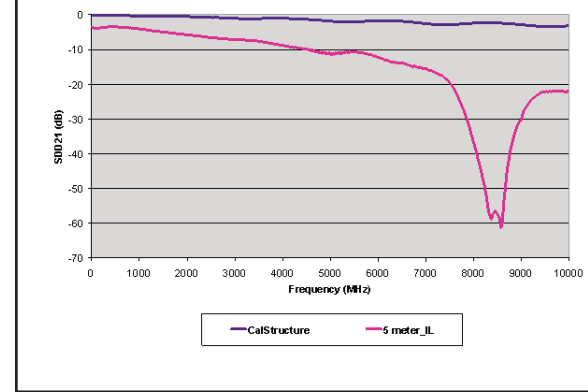
5m Cable Assembly (Equalized)



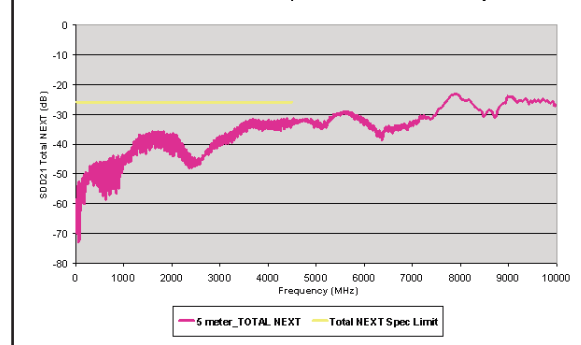
Insertion Loss of unequalized 1 meter 4X Mini-SAS Cable Assembly



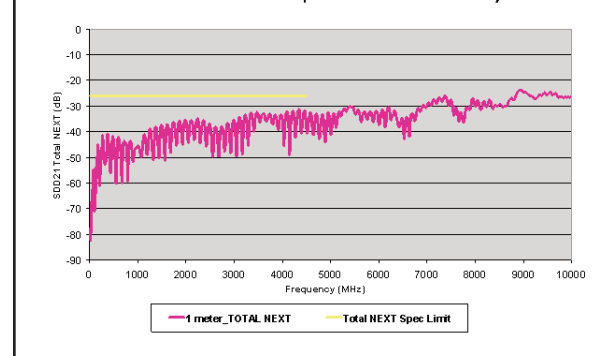
Insertion Loss of equalized 5 meter 4X Mini-SAS Cable Assembly



Total NEXT of 4x Mini-SAS equalized 5 meter cable assembly



Total NEXT of 4x Mini-SAS unequalized 1 meter cable assembly



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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



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