



miniSAS HD

Internal and External Data Center Cabling

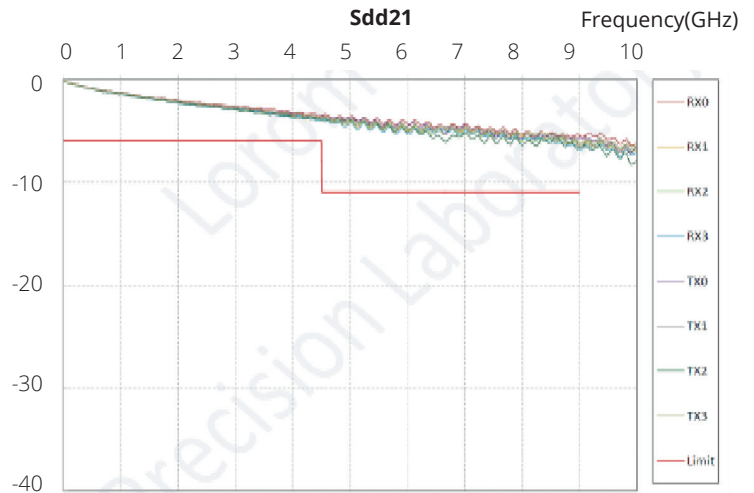
High-Speed Serial Mini-SAS HD

LOROM's unique product offering of external and internal Mini-SAS HD cable assembly solutions provides a complete product platform addressing the ever-increasing demand for higher channel density with a high level of signal integrity performance in serial I/O interfaces.

The Mini-SAS HD system provides a cost-effective, high-speed solution that meets the bandwidth requirements of current and future applications in servers and external storage systems.

Cable assemblies offered by LOROM exceed the Serial Attached SCSI

(SAS) HD requirements for mini-multilane external systems standardized port port interfaces. Specially, our Mini-SAS HD products exceed the applicable requirements of the INCITS T10 SAS 2.1 & SAS 3.0 specification and conform to the mechanical requirements described in the SFF-8644 standard. The supported data rate is 6 and 12 Gbps.



Typical 0.5m 30AWG internal miniSAS HD insertion loss

Product Features & Benefits

- LOROM paddle-card design and cable assembly is optimized for signal integrity and mechanical performance
- Both internal and external miniSAS HD cable assembly support SAS 2.1 & 3.0 specification.
- Choice of 24, 26, 28 and 30awg EMAXX bulk cable
- Fully EEPROM memory map compliant
- Scalable 4X and 8X cable plug option
- LOROM smart latch mechanism provides secure connection and optimize stacking
- Adaptive, strong EMI gasket and die-cast backshell assure proper EMI shielding
- Robust strain relief system isolates cable termination from mechanical stress
- Controlled wire management and termination process assures consistent high-speed electrical performance
- Fully compatible with SFF-8643 and SFF-8644 specification
- RoHS complaint

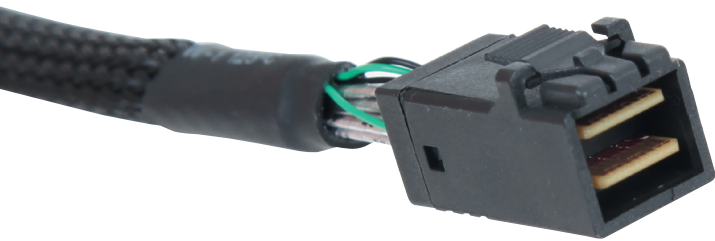
Target Markets & Applications

- Data Servers
- RAID Systems
- Storage Racks
- External Storage Systems
- SAS/SATA HBA interfaces Direct-attached Storage
- (DAS) Communications Switches

Industry Standards

- SAS 2.1 & 3.0
- SFF-8643 and SFF-8644

Mini SAS HD Internal SFF8643



Mini SAS HD External SFF



AWG	Length	Part Number
30	0.5m	LRHSP E01 D005
30	0.6m	LRHSP E01 D006
30	0.8m	LRHSP E01 D008
30	1.0m	LRHSP E01 D010

AWG	Length	Part Number
30	0.5m	LRHSP E11 D005
30	1.0m	LRHSP E11 D010
30	3.0m	LRHSP E11 D030
28	4.0m	LRHSP E11 C040
28	5.0m	LRHSP E11 C050
26	6.0m	LRHSP E11 B060
26	7.0m	LRHSP E11 B070

Electrical Characteristics

Differential Impedance of Bulk Cable:	100±5	Ohms, test with 70ps rise time
Differential Impedance of Mated Connector:	100±10	Ohms, test with 70ps rise time
Differential Insertion Loss:	≥ -6	dB, 0.01 to 4.5 GHz. Only applies to internal miniSAS HD
	≥ -11	dB, 4.5 to 9.0 GHz. Only applies to internal miniSAS HD
Differential Return Loss:	per SAS-3 Standard Revision 06	
Differential-to-Common-Mode Conversion:	< -18	dB, from 100MHz to 9GHz
Differential-to-Common-Mode Return Loss:	per SAS-3 Standard Revision 06	
Insertion Loss to Crosstalk Ratio:	< -15	dB, from 100MHz to 6GHz
Mode Conversion Minus Differential Insertion Loss:	< -10	dB, from 100MHz to 9GHz
Total NEXT	< -26	dB, from 100MHz to 6GHz

Mechanical Characteristics

Insertion Force:	250 cycles, EIA364-23
Insertion Cycles:	150N maximum, EIA 364-13
Extraction Force:	50N maximum, EIA 364-13
Cable Flexing:	75N minimum

Environmental Characteristics

Temperature Life:	105°C for 240 hours, EIA 364-17, Method A
Cyclic Temperature and Humidity	24 cycles
	1 cycle - 25°C, 80%RH to 65°C, 50%RH to 25°C 80%, EIA 364-31 Method III
Thermal Shock	55°C to +85°C, 10 cycles, EIA 364-32 Method A, Test Condition 1



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