EDSFF E1/E3 High-Speed Cable Assembly

EDSFF ORTHOGONAL CABLE ASSEMBLY WITH DIFFERENTIAL SIGNALING TO 32GT/S NRZ FOR NEXT-GENERATION SYSTEMS

Amphenol's EDSFF E1/E3 high-speed cable assembly transmits power and high-speed signals via a cable that directly connects to the main PC board supporting EDSFF E1/E3 SSD and CXL or other modules. The EDSFF 2-piece cable solution supports up to PCIe® 5.0 data rate of 32Gb/s with EDSFF standard interface Mini Cool Edge 1C/2C connectors on one cable end and on the other cable end offers the flexibility of connector form factor selection of MCIO, Multi-Trak, Backplane connectors, etc.

Ideal for use in high-speed computing data center server systems by using a high-speed cable to replace backplane and multi-level PCB motherboard routing for PCIe® high-speed signals.

TARGET MARKETS

The high-speed signals are transmitted via a high-speed cable that is connected directly to the main board, and power + side-band (low-speed) signals route to a small PCB via a MCIO board connector. There is a power cable to connect to the main board for power delivery, and side-band signals will go through the chipset on a small PCB and route back via the same MCIO board connector to the paddle card to connect to the main board. This solution can save both main board PCB cost and backplane PCB cost and offers the flexibility for placing a small PCB in the system.

Amphenol has tooled Gen 5 EDSFF orthogonal X2/X4/X8 to MCIO/Multi-Trak X8/X16 cable assembly to meet SFF-TA-1016 and SFF-TA-1035 specs, with a standard mating interface to support EDSFF E1/E3 SSD and CXL or other modules.

FEATURES

- Support X4, X8, standard links as per PCI-SIG CEM specification
- High-speed pins attach directly to raw cable
- Cost-saving solution for the whole system
- Flexible supply chain for customer
- RoHS compliant

BENEFITS

- Provides excellent performance and additional options for extreme bandwidth application
- Eliminate the PCB trace signal loss
- Save PCB cost for both motherboard and backplane
- Soldering can be done in parallel of riser PCBA process
- Meets environmental, health, and safety requirements

TECHNICAL INFORMATION

MATERIAL

- Contact Base Metal: Copper Alloy
- Contact Area Finish: Gold over Nickel
- Solder Area Finish: Tin over Nickel
- Housing Material: High-temperature thermoplastic (UL94V-0); Color: Black or off-white
- Metal Board Locks: Copper Alloy
- Board Locks Finish: Tin over Nickel
- Raw Cable: Ag plated Copper conductors with foam insulation covered by conductive foil

ELECTRICAL PERFORMANCE

- Contact Resistance: 15mΩ max. after test
- Differential Impedance: 85Ω ± 8.5Ω
- Current Rating: 1.1A per pin up to a max. 6 adjacent pins per side, 12 pins total
- SI performance: PCIe® Gen 5

MECHANICAL PERFORMANCE

- Durability Rating: 200 cycles
- Insertion Force: 1.1N/pin pair max.
- Unmating Force: 0.1N/pin pair min.

APPROVALS & CERTIFICATION

- RoHS compliant

ENVIRONMENTAL

- SFF TA 1002, EIA-364-1000.01. The test groups/sequences and durations are derived from the following requirements:
- Durability (mating/unmating) rating of 200 cycles
- Field Temperature: 65°C
- Field Life: Seven years
- Temperature Life (preconditioning): 92 hours at 105°C
- Temperature Life: 168 hours at 105°C
- Mixed Flowing Gas: 10 days

SPECIFICATIONS

- Industry
  - SFF TA 1002
  - SFF TA 1016
  - SFF TA 1020
  - SFF TA 1035

PACKAGING

- Individually packed in anti-static bags
- Cable ends packaged with dust covers

TARGET MARKETS/APPLICATIONS

Servers
Data Center

SI PERFORMANCE

SI simulation performance meet @ 32GT/s

PART NUMBERS

Description	Performance	Interface	Spec	Pull Out Type	Part Number Series
2* EDSFF Orth X4 to MCIO X8 right exit	32GT/s	1C FOR E3	SFF TA1016	PUSH BOTTOM LATCH	CBL1500202
4* EDSFF Orth X2 to MCIO X8 right exit	32GT/s	1C FOR E3	SFF TA1016	PUSH BOTTOM LATCH	CBL1500204
2* EDSFF Orth X4 to MCIO X8 straight	32GT/s	1C FOR E3	SFF TA1016	PUSH BOTTOM LATCH	CBL1500502
EDSFF Orth X4 to MCIO X8 right exit	32GT/s	1C FOR E1	SFF TA1016	PUSH BOTTOM LATCH	CBL1500541
2* DSFF Orth X4 to MCIO X8 straight	32GT/s	1C FOR E1	SFF TA1016	PUSH BOTTOM LATCH	CBL1500542
EDSFF Orth X4 to MCIO X8 right exit	32GT/s	1C FOR E3	SFF TA1035	PULL TAB LATCH	CBL1500410

Find part number details using the search box on www.amphenol-cs.com

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