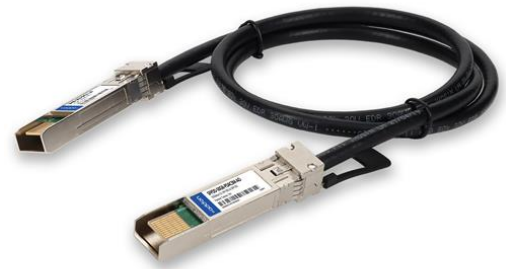


SFPDD-50GB-PDAC3M-AO

MSA and TAA 50GBase-CU SFP-DD to SFP-DD Direct Attach Cable (Passive Twinax, 3m, 27AWG)

Features

- SFP-DD module compliant to SFP-DD MSA Rev. 2.1
- SFP-DD-MIS Rev. 2
- Compliant to IEEE802.3cd & IEEE802.3bj high-frequency test standards
- 27AWG
- Passive twinax
- 50Gbps transmission
- Operating Temperature 0 to 70 Celsius
- Built-in EEPROM functions
- RoHS compliant and lead-free



Applications

- 50GBase Ethernet

Product Description

This is a MSA Compliant 50GBase-CU SFP-DD to SFP-DD direct attach cable that operates over passive copper with a maximum reach of 3m. It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. We stand behind the quality of our products and proudly offer a limited lifetime warranty. This cable is TAA (Trade Agreements Act) compliant and is built to comply with MSA (Multi-Source Agreement) standards.

AddOn's transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."



Absolute Maximum Ratings

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|----------------------------|--------|------|------|------|------|
| Supply Voltage | Vcc | 3.13 | 3.3 | 3.47 | V |
| Storage Temperature | Tstg | -40 | | 85 | °C |
| Operating Case Temperature | Tc | 0 | | 70 | °C |
| Humidity | RH | 5 | | 85 | % |
| Data Rate (FDR10) | | | 50 | | Gbps |

Physical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|-----------------|-----------|------|------|------|------|
| Length | L | | | 3 | m |
| AWG | | | | 27 | AWG |
| Jacket Material | Black PVC | | | | |
| Flame Rating | VW-1 | | | | |

Electrical Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|-------------|---|------|-------|------|
| Resistance | Rcon | | | 3 | Ω |
| Insulation Resistance | Rins | | | 10 | MΩ |
| Raw Cable Impedance | Zca | 95 | | 110 | Ω |
| Mated Connector Impedance | Zmated | 85 | | 110 | Ω |
| Maximum Insertion Loss at 13.28GHz | SDD21 | 8 | | 17.16 | dB |
| Differential to Common-Mode Return Loss | SCD11/22 | $\text{Return_loss}(f) \geq \begin{cases} 22 - \left(\frac{20}{25.78}\right)f, & 0.01 \leq f < 12.89 \\ 15 - \left(\frac{6}{25.78}\right)f, & 12.89 \leq f \leq 19 \end{cases}$ | | | dB |
| Differential to Common-Mode Conversion Loss | SCD21-SDD21 | $\text{Conversion_loss}(f) - \text{IL}(f) \geq \begin{cases} 10, & 0.01 \leq f < 12.89 \\ 27 - \left(\frac{29}{22}\right)f, & 12.89 \leq f < 15.7 \\ 6.3, & 15.7 \leq f \leq 19 \end{cases}$ | | | dB |
| Minimum COM | COM | 3 | | | dB |
| Rise Time (20-80%) | | | | 25 | ps |

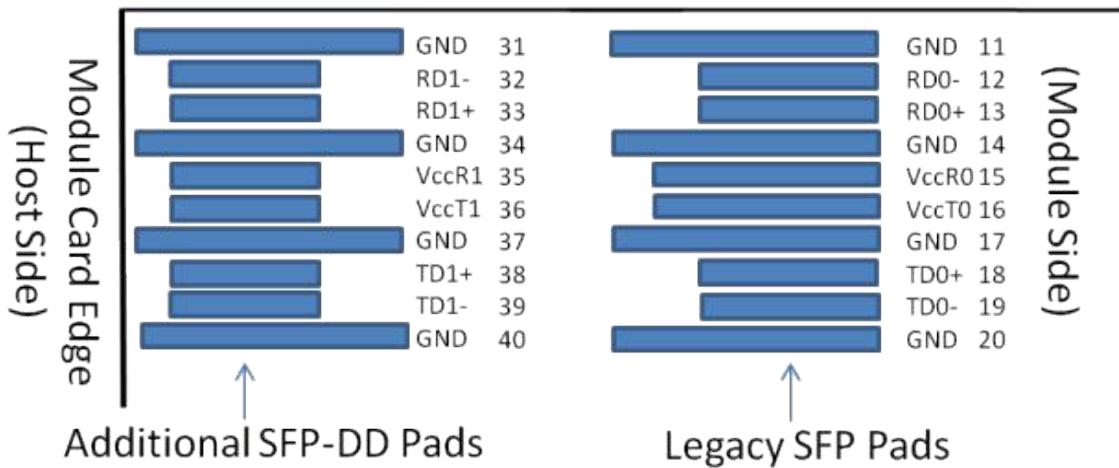
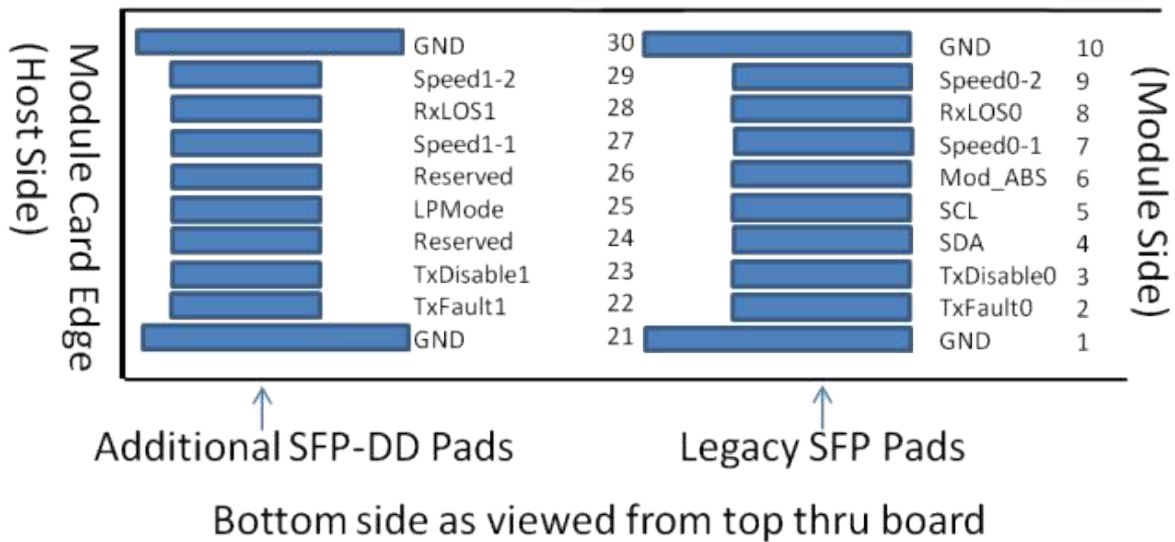
Pin Descriptions

| Pin | Logic | Symbol | Name/Description | Plug Sequence | Notes |
|-----|-----------|-------------|---|---------------|-------|
| 1 | | GND | Module Ground. | 1A | 1 |
| 2 | LVTTTL-O | Tx_Fault0 | Transmitter Fault Indication for Channel 0. | 3A | |
| 3 | LVTTTL-I | Tx_Disable0 | Transmitter Disable for Channel 0. | 3A | |
| 4 | LVCOS-I/O | SDA | Management I/F Data. | 3A | |
| 5 | LVCOS-I/O | SCL | Management I/F Clock. | 3A | |
| 6 | LVTTTL-O | MOD_ABS | Module Absent. | 3A | |
| 7 | LVTTTL-I | Speed0-1 | Rx Rate Select for Channel 0. | 3A | |
| 8 | LVTTTL-O | RxLOS0 | Rx Loss of Signal for Channel 0. | 3A | |
| 9 | LVTTTL-I | Speed0-2 | Tx Rate Select for Channel 0. | 3A | |
| 10 | | GND | Module Ground. | 1A | 1 |
| 11 | | GND | Module Ground. | 1A | 1 |
| 12 | CML-O | RD0- | Inverse Received Data Out for Channel 0. | 3A | |
| 13 | CML-O | RD0+ | Received Data Out for Channel 0. | 3A | |
| 14 | | GND | Module Ground. | 1A | 1 |
| 15 | | VccR0 | Receiver Power. | 2A | 2 |
| 16 | | VccT0 | Transmitter Power. | 2A | 2 |
| 17 | | GND | Module Ground. | 1A | 1 |
| 18 | CML-I | TD0+ | Transmit Data In for Channel 0. | 3A | |
| 19 | CML-I | TD0- | Inverse Transmit Data In for Channel 0. | 3A | |
| 20 | | GND | Module Ground. | 1A | 1 |
| 21 | | GND | Module Ground. | 1B | 1 |
| 22 | LVTTTL-O | Tx_Fault1 | Transmitter Fault Indication/Interrupt for Channel 1. | 3B | |
| 23 | LVTTTL-I | Tx_Disable1 | Transmitter Disable for Channel 1. | 3B | |
| 24 | | Reserved | Reserved for Future Use. | 3B | |
| 25 | LVTTTL-I | LPMODE | Low-Power Mode Control. | 3B | |
| 26 | | Reserved | Reserved for Future Use. | 3B | |
| 27 | LVTTTL-I | Speed1-1 | Rx Rate Select for Channel 1. | 3B | |
| 28 | LVTTTL-O | RxLOS1 | Loss of Signal for Channel 1. | 3B | |
| 29 | LVTTTL-I | Speed1-2 | Tx Rate Select for Channel 1. | 3B | |
| 30 | | GND | Module Ground. | 1B | 1 |
| 31 | | GND | Module Ground. | 1B | 1 |
| 32 | CML-O | RD1- | Inverse Received Data Out for Channel 1. | 3B | |
| 33 | CML-O | RD1+ | Received Data Out for Channel 1. | 3B | |
| 34 | | GND | Module Ground. | 1B | 1 |
| 35 | | VccR1 | Receiver Power for Channel 1. | 2B | 2 |
| 36 | | VccT1 | Transmitter Power for Channel 1. | 2B | 2 |
| 37 | | GND | Module Ground. | 1B | 1 |
| 38 | CML-I | TD1+ | Transmit Data In for Channel 1. | 3B | |
| 39 | CML-I | TD1- | Inverse Transmit Data In for Channel 1. | 3B | |
| 40 | | GND | Module Ground. | 1B | 1 |

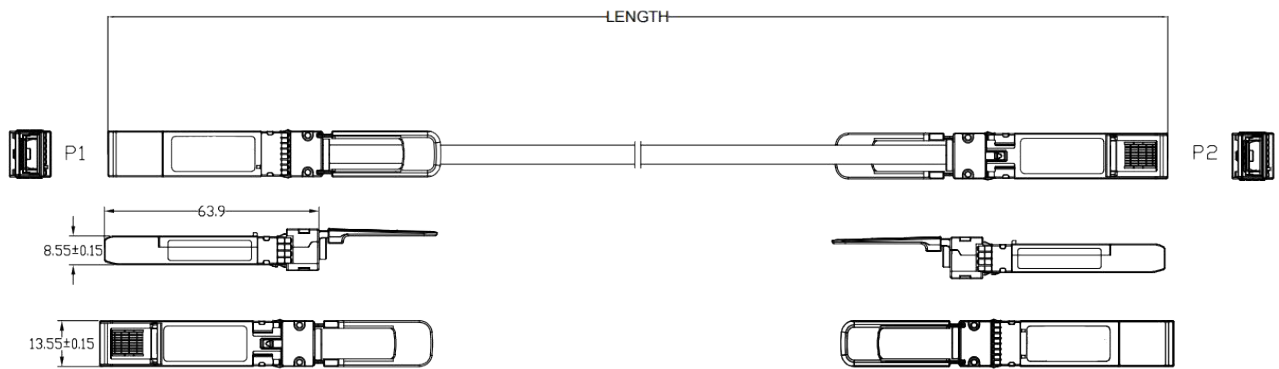
Notes:

1. GND is the symbol for signal and supply (power) common for the module. All are common within the module, and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.
2. VccT0, VccT1, VccR0, and VccR1 are applied concurrently and may be internally connected within the module in any combination.

Electrical Pin-Out Details



Mechanical Specifications



Notes:

1. 4 pairs, black PVC jacket, and RoHS 2.0 compliant.
2. 100% conductor test conditions: voltage of 5V, insulation resistance of 10M Ω , and a conduction resistance of maximum 3 Ω .
3. High-frequency test according to IEEE802.3bj & IEEE802.3cd standards.

About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is engrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.



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