

## QSFP-40GB-PDAC3MLZ-AR-AO

Arista Networks® Compatible TAA 40GBase-CU QSFP+ to QSFP+ Direct Attach Cable (Passive Twinax, 3m, Infiniband FDR10, 28AWG, LSZH)

### Features

- QSFP module compliant to SFF-8661
- QSFP MSA
- IEEE802.3bj
- 28AWG
- Passive copper
- 40Gbps (4x10G Infiniband FDR10)
- RoHS 2.0 compliant and lead-free
- Operating Temperature 0 to 70 Celsius



### Applications

- Infiniband FDR10
- 40GBase-CU

### Product Description

This is a Arista Networks® Compatible 40GBase-CU QSFP+ to QSFP+ Infiniband FDR10 LSZH 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)          |        |      | 40 (4x10) |      | Gbps |

### Physical Characteristics

| Parameter       | Symbol                                  | Min. | Typ. | Max. | Unit |
|-----------------|---|------|------|------|------|
| Length          | L                                       |      |      | 3    | M    |
| AWG             |   |      |      | 28   | AWG  |
| Jacket Material | LSZH, Black                             |      |      |      |      |
| Top Shell       | Zinc Alloy, Nickel-Plated Over Copper   |      |      |      |      |
| Bottom Shell    | Zinc Alloy, Nickel-Plated Over Copper   |      |      |      |      |
| Pull Latch      | Stainless Steel + Pull Ring, PA66, Blue |      |      |      |      |

### Electrical Specifications

| Parameter                               | Symbol   | Min.   | Typ. | Max. | Unit |
|---|----------|--|------|------|------|
| Resistance                              | Rcon     |  |      | 3    | Ω    |
| Insulation Resistance                   | Rins     |  |      | 10   | MΩ   |
| Raw Cable Impedance                     | Zca      | 95   | 100  | 110  | Ω    |
| Mated Connector Impedance               | Zmated   | 85   | 100  | 110  | Ω    |
| Insertion Loss at 7.03125GHz            | SDD21    |  |      | 15   | dB   |
| Return Loss                             | SDD11/22 | $\text{Return\_Loss}(f) \geq \begin{cases} -9.5 + 0.37(f), & 0.05 \leq f < 8 \\ -4.75 + 7.4 * \log_{10}\left(\frac{f}{14}\right), & 8 \leq f < 14.1 \end{cases}$                     |      |      | dB   |
| Differential to Common-Mode Return Loss | SCD11/22 | $\text{Return\_Loss}(f) \geq \begin{cases} -22 + 20\left(\frac{f}{25.78}\right), & 0.01 \leq f < 12.89 \\ -15 + 6\left(\frac{6}{25.78}\right), & 12.89 \leq f \leq 14.1 \end{cases}$ |      |      | dB   |
| Minimum COM                             | COM      | 3  |      |      | dB   |
| Rise Time (20-80%)                      |          |  |      | 34   | ps   |

## Pin Descriptions

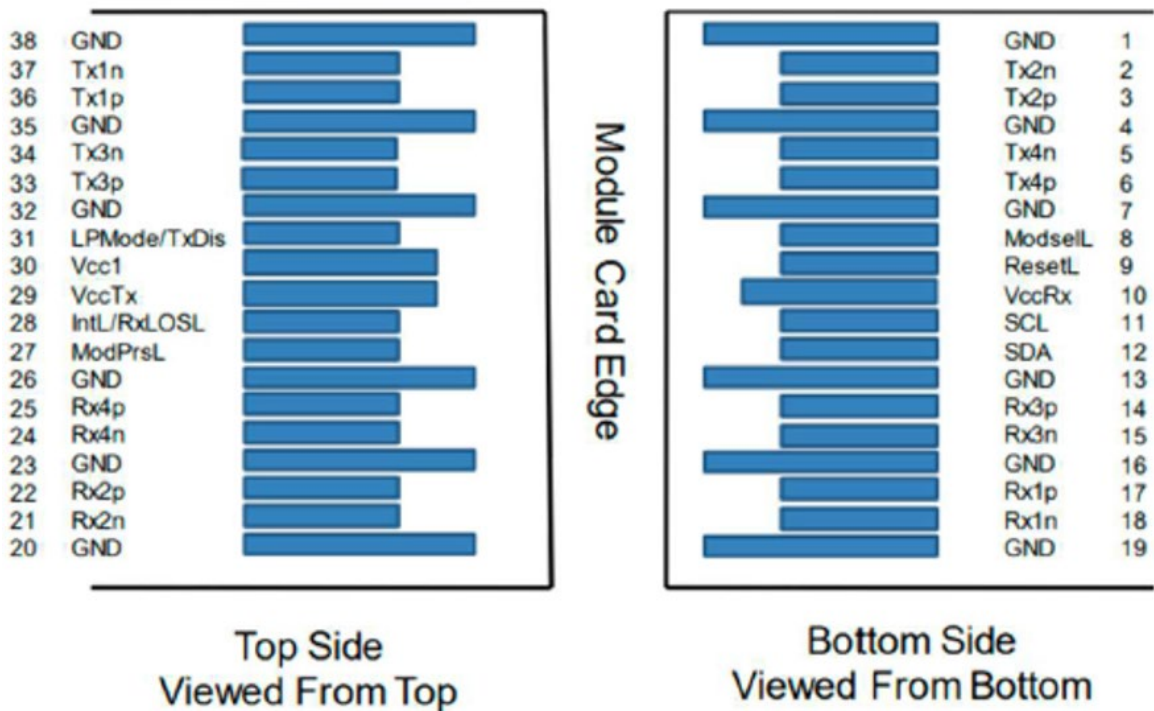
| Pin | Logic       | Symbol        | Name/Description  | Plug Sequence | Note |
|-----|-------------|---------------|---|---------------|------|
| 1   |             | GND           | Module Ground.  | 1             | 1    |
| 2   | CML-I       | Tx2-          | Transmitter Inverted Data Input.  | 3             |      |
| 3   | CML-I       | Tx2+          | Transmitter Non-Inverted Data Input.  | 3             |      |
| 4   |             | GND           | Module Ground.  | 1             | 1    |
| 5   | CML-I       | Tx4-          | Transmitter Inverted Data Input.  | 3             |      |
| 6   | CML-I       | Tx4+          | Transmitter Non-Inverted Data Input.  | 3             |      |
| 7   |             | GND           | Module Ground.  | 1             | 1    |
| 8   | LVTTTL-I    | ModSelL       | Module Select.  | 3             |      |
| 9   | LVTTTL-I    | ResetL        | Module Reset.   | 3             |      |
| 10  |             | VccRx         | +3.3V Power Supply Receiver.  | 2             | 2    |
| 11  | LVC MOS-I/O | SCL           | 2-Wire Serial Interface Clock.  | 3             |      |
| 12  | LVC MOS-I/O | SDA           | 2-Wire Serial Interface Data.   | 3             |      |
| 13  |             | GND           | Module Ground.  | 1             | 1    |
| 14  | CML-O       | Rx3+          | Receiver Non-Inverted Data Output.  | 3             |      |
| 15  | CML-O       | Rx3-          | Receiver Inverted Data Output.  | 3             |      |
| 16  |             | GND           | Module Ground.  | 1             | 1    |
| 17  | CML-O       | Rx1+          | Receiver Non-Inverted Data Output.  | 3             |      |
| 18  | CML-O       | Rx1-          | Receiver Inverted Data Output.  | 3             |      |
| 19  |             | GND           | Module Ground.  | 1             | 1    |
| 20  |             | GND           | Module Ground.  | 1             | 1    |
| 21  | CML-O       | Rx2-          | Receiver Inverted Data Output.  | 3             |      |
| 22  | CML-O       | Rx2+          | Receiver Non-Inverted Data Output.  | 3             |      |
| 23  |             | GND           | Module Ground.  | 1             | 1    |
| 24  | CML-O       | Rx4-          | Receiver Inverted Data Output.  | 3             |      |
| 25  | CML-O       | Rx4+          | Receiver Non-Inverted Data Output.  | 3             |      |
| 26  |             | GND           | Module Ground.  | 1             | 1    |
| 27  | LVTTTL-O    | ModPrsL       | Module Present.   | 3             |      |
| 28  | LVTTTL-O    | IntL/RxLOSL   | Interrupt. Optionally configurable as RxLOSL via the management interface (SFF-8636).     | 3             |      |
| 29  |             | VccTx         | +3.3V Power Supply Transmitter.   | 2             | 2    |
| 30  |             | Vcc1          | +3.3V Power Supply.   | 2             | 2    |
| 31  | LVTTTL-I    | LPMoDe/Tx Dis | Low-Power Mode. Optionally configurable as TxDis via the management interface (SFF-8636). | 3             |      |
| 32  |             | GND           | Module Ground.  | 1             | 1    |
| 33  | CML-I       | Tx3+          | Transmitter Non-Inverted Data Input.  | 3             |      |
| 34  | CML-I       | Tx3-          | Transmitter Inverted Data Input.  | 3             |      |

|    |       |      |                                      |   |   |
|----|-------|------|--------------------------------------|---|---|
| 35 |       | GND  | Module Ground.                       | 1 | 1 |
| 36 | CML-I | Tx1+ | Transmitter Non-Inverted Data Input. | 3 |   |
| 37 | CML-I | Tx1- | Transmitter Inverted Data Input.     | 3 |   |
| 38 |       | GND  | Module Ground.                       | 1 | 1 |

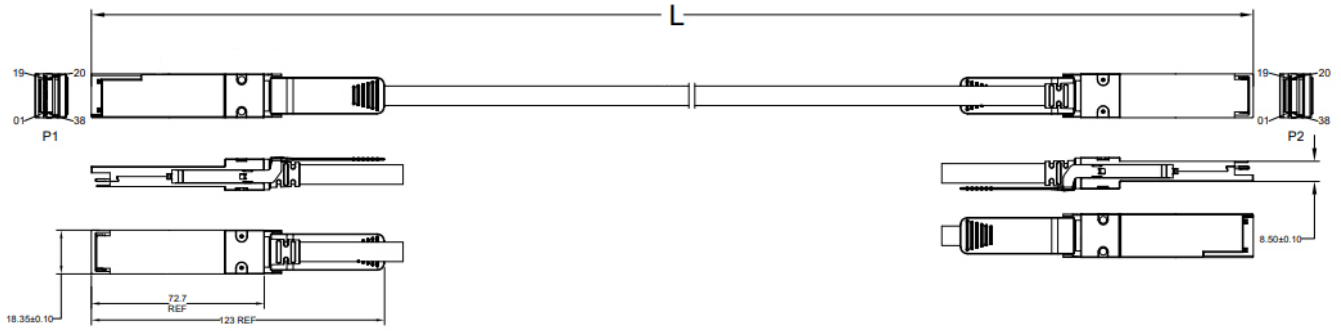
**Notes:**

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. VccRx, Vcc1, and VccTx are applied concurrently and may be internally connected within the module in any combination. Vcc contacts in SFF-8662 and SFF-8672 each have a steady state current rating of 1A.

**Electrical Pin-Out Details**



## Mechanical Specifications



### Notes:

1. 8 pairs.
2. 100% conductor test conditions: 5V, insulation resistance of  $10M\Omega$ , and conduction resistance maximum of  $3\Omega$ . IEEE802.3ba/IB FDR10 standard.

## 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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