



### **QSFP28-100GB-PDAC3MLZ-MX-OPC**

Mellanox® Compatible TAA 100GBase-CU QSFP28 to QSFP28 Direct Attach Cable (Passive Twinax, 3m, Infiniband EDR, 26AWG, LSZH)

#### **Features**

- Compliant to SFF-8661
- IEEE802.3bj/IB EDR Standard
- 100Gbps
- 26AWG
- Passive copper
- Operating Temperature 0 to 70 Celsius
- RoHS 2.0 compliant and lead-free



#### **Applications:**

- 100GBase-CU
- Infiniband EDR

#### **Product Description**

This is a Mellanox® compatible 100GBase-CU QSFP28 to QSFP28 Infiniband EDR LSZH direct attach cable that operates over passive copper with a maximum reach of 3.0m (9.8ft). It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This direct attach cable is TAA (Trade Agreements Act) compliant, and is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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

## 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                  |        |      | 100  |      | Gbps |

## Physical Characteristics

| Parameter       | Symbol      | Min. | Typ. | Max. | Unit |
|-----------------|-------------|------|------|------|------|
| Length          | L           |      |      | 3    | M    |
| AWG             |             |      |      | 26   | AWG  |
| Jacket Material | LSZH, Black |      |      |      |      |

## 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 12.89GHz                  | SDD21       | 8                                                                                                                                                                                             |      | 22.48 | dB   |
| Return Loss at 12.89GHz                     | SDD11/22    | $\text{Return\_Loss}(f) \geq \begin{cases} 16.5 - 2\sqrt{f}, & 0.05 \leq f < 4.1 \\ 10.66 - 14\log_{10}\left(\frac{f}{5.5}\right), & 4.1 \leq f \leq 19 \end{cases}$                          |      |       | 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   |

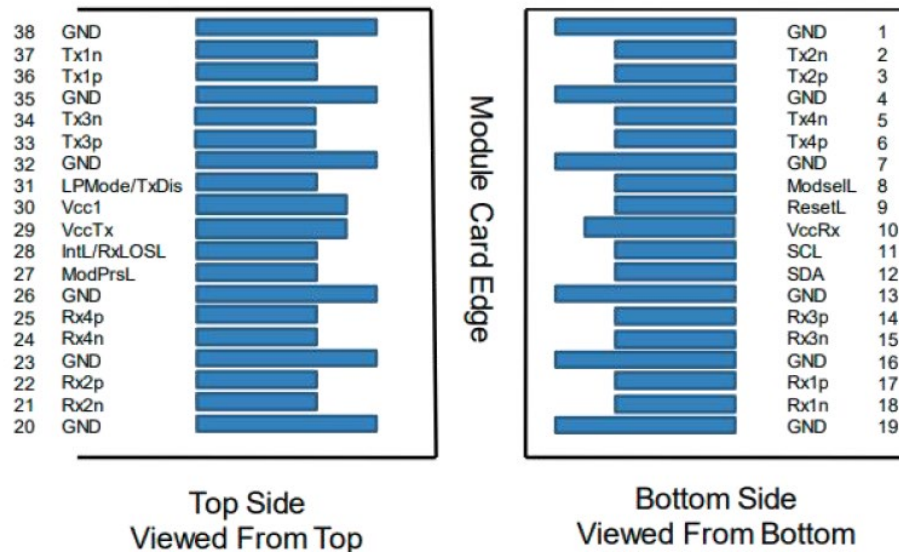
## Pin Descriptions

| Pin | Logic       | Symbol  | Name/Description                                                                               | Plug Sequence | 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   | LVTTL-I     | MODSEIL | Module Select.                                                                                 | 3             |      |
| 9   | LVTTL-I     | ResetL  | Module Reset.                                                                                  | 3             |      |
| 10  |             | VccRx   | +3.3V Receiver Power Supply.                                                                   | 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  | LVTTL-O     | ModPrsL | Module Present.                                                                                | 3             |      |
| 28  | LVTTL-O     | IntL    | Interrupt. Optionally configurable as RxLOSL via the management interface (SFF-8636).          | 3             |      |
| 29  |             | VccTx   | +3.3V Transmitter Power Supply.                                                                | 2             | 2    |
| 30  |             | Vcc1    | +3.3V Power Supply.                                                                            | 2             | 2    |
| 31  | LVTTL-I     | LPMode  | Low-Power Mode. Optionally configurable as Tx_Disable 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    |

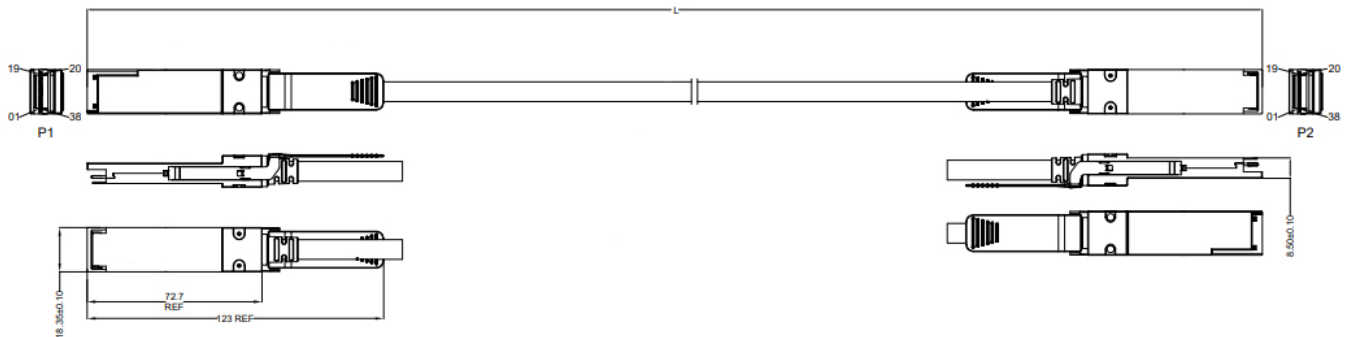
### Notes:

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 $\Omega$ .

## **OptioConnect**

### **Innovation for the Future of High-Speed Networking**

#### **Who We Are**

OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

#### **What We Do**

At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

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Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

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