

### MC2207312-020-C

Mellanox® MC2207312-020 Compatible TAA Compliant 56GBase-AOC QSFP+ Active Optical Cable (850nm, MMF, 20m)

#### Features:

- Complies with QSFP MSA high- density form factor
- Multi-rate capability: 1.06Gbps to 14.025Gbps per channel
- Four-channel full-duplex active optical cable
- Single 3.3V power supply
- Round, riser-rated (OFNR)
- Built-in digital diagnostic functions
- Hot Pluggable
- Commercial Temperature 0 to 70 Celsius
- Metal with lower EMI
- RoHS Compliant and Lead-Free



#### Applications:

- x

#### Product Description

This is a Mellanox® MC2207312-020 compatible 56GBase-AOC QSFP+ to QSFP+ active optical cable that operates over multi-mode fiber with a maximum reach of 20.0m (65.6ft). At a wavelength of 850nm, it has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This active optical 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.

ProLabs' 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.")



## General Specifications

| Parameter                    | Symbol | Min. | Typ. | Max.               | Unit |
|------------------------------|--------|------|------|--------------------|------|
| Supply Voltage               | Vcc    | 3.13 | 3.3  | 3.47               | V    |
| Storage Temperature          | Tstg   | -20  |      | +85                | °C   |
| Operating Case Temperature   | Tc     | 0    |      | 70                 | °C   |
| Data Rate per Channel        | DR     | 1    |      | 14.0645            | Gbps |
| Bit Error Rate               | BER    |      |      | <10 <sup>-12</sup> |      |
| Data Speed Tolerance         | ΔDR    | -100 |      | 100                | ppm  |
| Link Distance with OM3 fiber | D      | 0    |      | 20                 | m    |

## Electrical Specifications

| Parameter                             | Symbol | Min.    | Typ. | Max. | Unit  | Notes           |
|---------------------------------------|--------|---------|------|------|-------|-----------------|
| Power Supply Voltage                  | Vcc    | 3.13    | 3.3  | 3.47 | V     |                 |
| Power Consumption                     |        | -       |      | 1.5  | W     |                 |
| Supply Current                        |        |         | 230  |      | mA    | Per End Typical |
| Differential Input Impedance          | ZIN    | 90      | 100  | 110  | Ω     |                 |
| Differential Output Impedance         | ZOUT   | 90      | 100  | 110  | Ω     |                 |
| Differential Input Voltage Amplitude  | ΔVIN   | 300     |      | 1100 | mVp-p |                 |
| Differential Output Voltage Amplitude | ΔVOUT  | 500     |      | 800  | mVp-p |                 |
| Bit Error Rate                        | BR     |         |      | E-12 |       |                 |
| Input Logic Level - High              | VIH    | 2.0     |      | Vcc  | V     |                 |
| Input Logic Level - Low               | VIL    | 0       |      | 0.8  | V     |                 |
| Output Logic Level - High             | VOH    | Vcc-0.5 |      | Vcc  | V     |                 |
| Output Logic Level - Low              | VOL    | 0       |      | 0.4  | V     |                 |

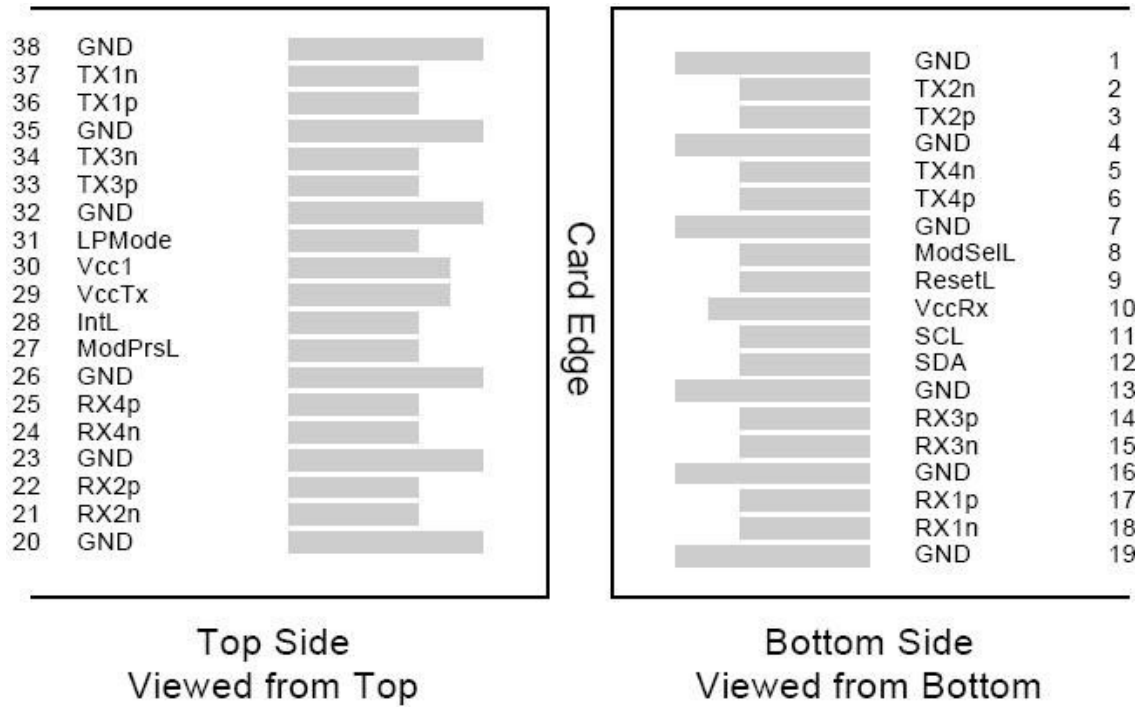
## Pin Descriptions

| Pin | Logic       | Symbol  | Name/Description                      | Note |
|-----|-------------|---------|---------------------------------------|------|
| 1   |             | GND     | Module Ground.                        | 1    |
| 2   | CML-I       | Tx2n    | Transmitter Inverted Data Input.      |      |
| 3   | CML-I       | Tx2p    | Transmitter Non-Inverted Data Output. |      |
| 4   |             | GND     | Module Ground.                        | 1    |
| 5   | CML-I       | Tx4n    | Transmitter Inverted Data Input.      |      |
| 6   | CML-I       | Tx4p    | Transmitter Non-Inverted Data Output. |      |
| 7   |             | GND     | Module Ground.                        | 1    |
| 8   | LVTLL-I     | ModSelL | Module Select.                        |      |
| 9   | LVTLL-I     | ResetL  | Module Reset.                         |      |
| 10  |             | VccRx   | + 3.3V Receiver Power Supply.         | 2    |
| 11  | LVC MOS-I/O | SCL     | 2-Wire Serial Interface Clock.        |      |
| 12  | LVC MOS-I/O | SDA     | 2-Wire Serial Interface Data.         |      |
| 13  |             | GND     | Module Ground.                        |      |
| 14  | CML-O       | Rx3p    | Receiver Non-Inverted Data Output.    |      |
| 15  | CML-O       | Rx3n    | Receiver Inverted Data Output.        |      |
| 16  |             | GND     | Module Ground.                        | 1    |
| 17  | CML-O       | Rx1p    | Receiver Non-Inverted Data Output.    |      |
| 18  | CML-O       | Rx1n    | Receiver Inverted Data Output.        |      |
| 19  |             | GND     | Module Ground.                        | 1    |
| 20  |             | GND     | Module Ground.                        | 1    |
| 21  | CML-O       | Rx2n    | Receiver Inverted Data Output.        |      |
| 22  | CML-O       | Rx2p    | Receiver Non-Inverted Data Output.    |      |
| 23  |             | GND     | Module Ground.                        | 1    |
| 24  | CML-O       | Rx4n    | Receiver Inverted Data Output.        | 1    |
| 25  | CML-O       | Rx4p    | Receiver Non-Inverted Data Output.    |      |
| 26  |             | GND     | Module Ground.                        | 1    |
| 27  | LVTTL-O     | ModPrsL | Module Present.                       |      |
| 28  | LVTTL-O     | IntL    | Interrupt.                            |      |
| 29  |             | VccTx   | +3.3 V Transmitter Power Supply.      | 2    |
| 30  |             | Vcc1    | +3.3 V Power Supply.                  | 2    |
| 31  | LVTTL-I     | LPMODE  | Low-Power Mode.                       |      |
| 32  |             | GND     | Module Ground.                        | 1    |
| 33  | CML-I       | Tx3p    | Transmitter Non-Inverted Data Input.  |      |
| 34  | CML-I       | Tx3n    | Transmitter Inverted Data Output.     |      |
| 35  |             | GND     | Module Ground.                        | 1    |
| 36  | CML-I       | Tx1p    | Transmitter Non-Inverted Data Input.  |      |
| 37  | CML-I       | Tx1n    | Transmitter Inverted Data Output.     |      |
| 38  |             | GND     | Module Ground.                        | 1    |

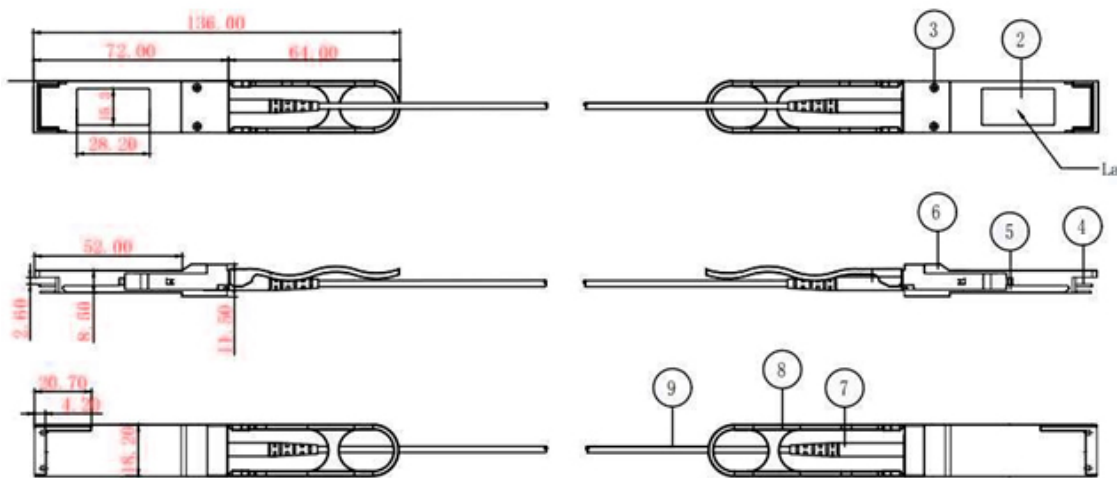
### Notes:

1. Module circuit ground is isolated from module chassis ground within the module. GND is the symbol for signal and supply (power) common for QSFP modules.
2. The connector pins are each rated for a maximum current of 500mA.

Electrical Pin-Out Details



Mechanical Specifications



## About ProLabs

Our extensive experience comes as standard. For over 20 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with more than 100 optical switching and transport platforms.

## A Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 1.6T while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

## The Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure compatible products, and immediate answers to your questions. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.



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