



### **QSFP-100GB-AOC9MLP-J-OPC**

Juniper Networks® Compatible TAA 100GBase-AOC QSFP28 to QSFP28 Low Power Active Optical Cable (850nm, MMF, 9m, Infiniband EDR, LSZH)

#### **Features**

- Up to 25.78Gbps per channel
- 4-channel full-duplex
- Single 3.3V power supply
- Low power consumption: 1.65W per cable end
- Infiniband EDR
- LSZH cable jacket
- Hot pluggable
- Operating Temperature 0 to 70 Celsius
- RoHS compliant and lead-free



#### **Applications:**

- 100GBase Ethernet

#### **Product Description**

This is a Juniper Networks® compatible 100GBase-AOC QSFP28 to QSFP28 Infiniband EDR LSZH active optical cable that operates over active fiber with a maximum reach of 9.0m (29.5ft). 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.

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

## Absolute Maximum Ratings

| Parameter                  | Symbol | Min. | Typ. | Max. | Unit | Notes |
|----------------------------|--------|------|------|------|------|-------|
| Storage Temperature        | Tstg   | -40  |      | 85   | °C   | 1     |
| Operating Case Temperature | Tc     | 0    |      | 70   | °C   |       |
| Power Supply Voltage       | Vcc    | 3.13 | 3.30 | 3.47 | V    |       |
| Supply Voltage             | VIN    | 0    |      | 4.0  | V    |       |
| Power Supply Current       | Icc    |      | 500  |      | mA   | 2     |
| Relative Humidity          | RH     | 0    |      | 85   | %    |       |
| Power Consumption          | PD     |      | 1.65 | 1.73 | W    | 2     |

### Notes:

1. Ambient.
2. Per end.

## Cable Specifications

| Parameter           | Value                            | Unit | Notes |
|---------------------|----------------------------------|------|-------|
| Cable Diameter      | LSZH: $\varnothing 3.0 \pm 0.15$ | mm   |       |
| Minimum Bend Radius | 30                               | mm   | 1     |
| Length Tolerance    | +300/-0                          | mm   |       |
| Cable Jacket        | LSZH, Aqua                       |      |       |

### Notes:

1. Without tension.

## Electrical Characteristics

| Parameter                      | Symbol  | Min. | Typ.  | Max.      | Unit     | Notes |
|--------------------------------|---------|------|-------|-----------|----------|-------|
| Data Rate Per Channel          | BR      |      | 25.78 |           | Gbps     |       |
| Transmitter                    |         |      |       |           |          |       |
| Input Differential Impedance   | RIN     |      | 100   |           | $\Omega$ |       |
| Differential Data Input Swing  | VIN,pp  | 200  |       | 900       | mV       |       |
| Receiver                       |         |      |       |           |          |       |
| Output Differential Impedance  | ROUT    |      | 100   |           | $\Omega$ |       |
| Differential Data Output Swing | VOUT,pp |      |       | 800       | mV       |       |
| Bit Error Ratio @25.78Gbps     |         |      |       | $10^{-8}$ |          | 1     |

### Notes:

1. Pre-FEC Bit Error Ratio with a PRBS  $2^{31}-1$  test pattern.

## Pin Descriptions

| Pin | Symbol  | Name/Description                     | Notes |
|-----|---------|--------------------------------------|-------|
| 1   | GND     | Module Ground.                       | 1     |
| 2   | Tx2-    | Transmitter Inverted Data Input.     |       |
| 3   | Tx2+    | Transmitter Non-Inverted Data Input. |       |
| 4   | GND     | Module Ground.                       | 1     |
| 5   | Tx4-    | Transmitter Inverted Data Input.     |       |
| 6   | Tx4+    | Transmitter Non-Inverted Data Input. |       |
| 7   | GND     | Module Ground.                       | 1     |
| 8   | ModSelL | Module Select.                       |       |
| 9   | ResetL  | Module Reset.                        |       |
| 10  | VccRx   | +3.3V Receiver Power Supply.         | 2     |
| 11  | SCL     | 2-Wire Serial Interface Clock.       |       |
| 12  | SDA     | 2-Wire Serial Interface Data.        |       |
| 13  | GND     | Module Ground.                       | 1     |
| 14  | Rx3+    | Receiver Non-Inverted Data Output.   |       |
| 15  | Rx3-    | Receiver Inverted Data Output.       |       |
| 16  | GND     | Module Ground.                       | 1     |
| 17  | Rx1+    | Receiver Non-Inverted Data Output.   |       |
| 18  | Rx1-    | Receiver Inverted Data Output.       |       |
| 19  | GND     | Module Ground.                       | 1     |
| 20  | GND     | Module Ground.                       | 1     |
| 21  | Rx2-    | Receiver Inverted Data Output.       |       |
| 22  | Rx2+    | Receiver Non-Inverted Data Output.   |       |
| 23  | GND     | Module Ground.                       | 1     |
| 24  | Rx4-    | Receiver Inverted Data Output.       |       |
| 25  | Rx4+    | Receiver Non-Inverted Data Output.   |       |
| 26  | GND     | Module Ground.                       | 1     |
| 27  | ModPrsL | Module Present.                      |       |
| 28  | IntL    | Interrupt.                           |       |
| 29  | VccTx   | +3.3V Transmitter Power Supply.      | 2     |
| 30  | Vcc1    | +3.3V Power Supply.                  | 2     |
| 31  | LPMMode | Low-Power Mode.                      | 3     |
| 32  | GND     | Module Ground.                       | 1     |
| 33  | Tx3+    | Transmitter Non-Inverted Data Input. |       |
| 34  | Tx3-    | Transmitter Inverted Data Input.     |       |
| 35  | GND     | Module Ground.                       | 1     |

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

#### Notes:

1. GND is the symbol for signal and supply (power) common for the QSFP module. All are common within the QSFP module, and all module voltage 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 the receiver and transmitter power supplies and shall be applied concurrently. VccRx, Vcc1, and VccTx may be internally connected within the QSFP transceiver module in any combination. The connector pins are each rated for a maximum current of 500mA.
3. Not in use.

#### Electrical Pin-Out Details



Mechanical Specifications



## **OptioConnect**

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