**C-O800-2Q400-2M-C**

Arista Networks® C-O800-2Q400-2M Compatible TAA 800GBase-CU OSFP to 2xQSFP112 Direct Attach Cable (Passive Twinax, 2m)

**Features:**

- OSFP Module Compliant to MSA Standards
- QSFP112 Module Compliant to MSA Standards
- Transmission Data Rate Up to PAM4 106.25Gbps Per Channel
- Enable 800Gbps to 2x400Gbps Transmission
- Built-In EEPROM Functions with Write Protection
- Operating Temperature Range: 0 to 70 Celsius
- RoHS Compliant and Lead-Free

**Applications:**

- 800GBase Ethernet

**Product Description**

This Arista Networks® C-O800-2Q400-2M compatible 800GBase-CU OSFP to 2xQSFP112 direct attach cable operates over passive copper with a maximum reach of 2.0m (6.6ft). 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.

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.")

TAA COMPLIANT

**Rev. 032626**

## General Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| **Storage Temperature** | Tstg | -40 | | 85 | °C |
| **Operating Case Temperature** | Tc | 0 | | 70 | °C |
| **Supply Voltage** | Vcc | 3.13 | 3.3 | 3.47 | V |
| **Relative Operating Humidity** | RH | 5 | | 85 | % |
| **Data Rate** | DR | | 800 | | Gbps |

## Physical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| **Length** | L | | | 2 | M | |
| **AWG** | | | 26 | | AWG | |
| **Jacket Material** | | Plastic Braided Mesh Technology Net, Silver Gray | | | | |

## Electrical Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| **Resistance** | Rcon | | | 3 | Ω | |
| **Insulation Resistance** | Rins | | | 10 | MΩ | |
| **Raw Cable Impedance** | Zca | 95 | | 110 | Ω | |
| **Mated Connector Impedance** | Zmated | 85 | | 115 | Ω | |
| **Maximum Insertion Loss @26.56GHz** | SDD21 | 11 | | 19.75 | dB | |
| **Differential- to Common-Mode Return Loss** | SDD11/ 22 | $RLcd(f) \geq \begin{cases} 22 - 10(f/26.56) & 0.05 \leq f < 26.56 \\ 15 - 3(f/26.56) & 26.56 \leq f \leq 40 \end{cases}$ | | | dB | 1 |
| **Differential- to Common-Mode Conversion Loss** | SCD21-SDD21 | $\text{Conversion_loss}(f) - \begin{cases} 10 & 0.05 \leq f < 12.89 \\ 14 - 0.3108f & 12.89 \leq f \leq 40 \end{cases}$ | | | dB | 1 |
| **Common-Mode to Common-Mode Return Loss** | SCC11-22 | $RLcc(f) \geq 1.08$ | | | dB | 1 |
| **Minimum COM** | COM | 3 | | | dB | |

**Notes:**

1. For $0.05 \leq f \leq 40$GHz, where f is the frequency in GHz.

**Pin Descriptions for OSFP**

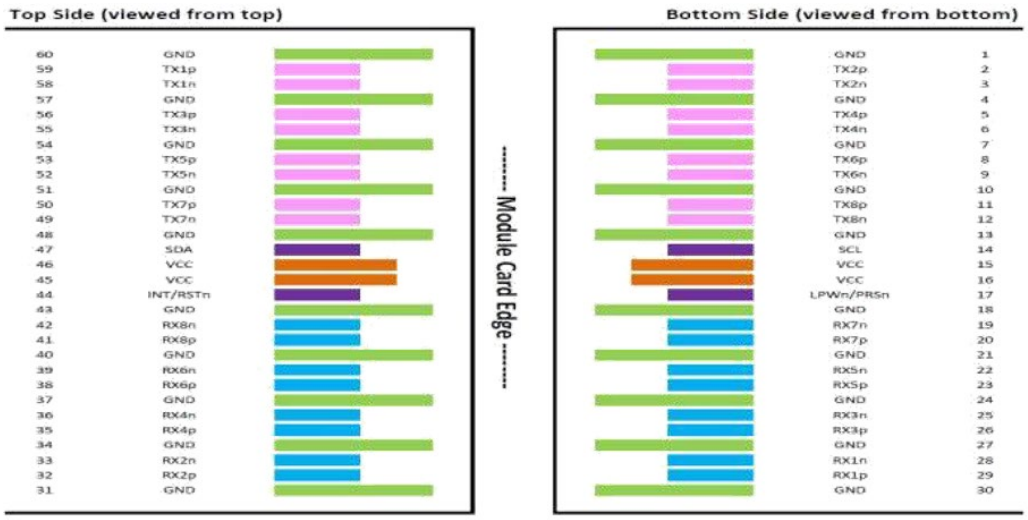
| Pin | Symbol | Name/Description | Logic | Plug Sequence | Direction | Notes |
|---|---|---|---|---|---|---|
| **1** | GND | Module Ground. | | 1 | | |
| **2** | Tx2+ | Transmitter Data Non-Inverted. | CML-I | 3 | Input from Host | |
| **3** | Tx2- | Transmitter Data Inverted. | CML-I | 3 | Input from Host | |
| **4** | GND | Module Ground. | | 1 | | |
| **5** | Tx4+ | Transmitter Data Non-Inverted. | CML-I | 3 | Input from Host | |
| **6** | Tx4- | Transmitter Data Inverted. | CML-I | 3 | Input from Host | |
| **7** | GND | Module Ground. | | 1 | | |
| **8** | Tx6+ | Transmitter Data Non-Inverted. | CML-I | 3 | Input from Host | |
| **9** | Tx6- | Transmitter Data Inverted. | CML-I | 3 | Input from Host | |
| **10** | GND | Module Ground. | | 1 | | |
| **11** | Tx8+ | Transmitter Data Non-Inverted. | CML-I | 3 | Input from Host | |
| **12** | Tx8- | Transmitter Data Inverted. | CML-I | 3 | Input from Host | |
| **13** | GND | Module Ground. | | 1 | | |
| **14** | SCL | 2-Wire Serial Interface Clock. | LVCMOS-I/O | 3 | Bi-Directional | 1 |
| **15** | Vcc | +3.3V Power. | | 2 | Power from Host | |
| **16** | Vcc | +3.3V Power. | | 2 | Power from Host | |
| **17** | LPWn/PRSn | Low-Power Mode/Module Present. | Multi-Level | 3 | Bi-Directional | 2 |
| **18** | GND | Module Ground. | | 1 | | |
| **19** | Rx7- | Receiver Data Inverted. | CML-O | 3 | Output from Host | |
| **20** | Rx7+ | Receiver Data Non-Inverted. | CML-O | 3 | Output from Host | |
| **21** | GND | Module Ground. | | 1 | | |
| **22** | Rx5- | Receiver Data Inverted. | CML-O | 3 | Output from Host | |
| **23** | Rx5+ | Receiver Data Non-Inverted. | CML-O | 3 | Output from Host | |
| **24** | GND | Module Ground. | | 1 | | |
| **25** | Rx3- | Receiver Data Inverted. | CML-O | 3 | Output from Host | |
| **26** | Rx3+ | Receiver Data Non-Inverted. | CML-O | 3 | Output from Host | |
| **27** | GND | Module Ground. | | 1 | | |
| **28** | Rx1- | Receiver Data Inverted. | CML-O | 3 | Output from Host | |
| **29** | Rx1+ | Receiver Data Non-Inverted. | CML-O | 3 | Output from Host | |
| **30** | GND | Module Ground. | | 1 | | |
| **31** | GND | Module Ground. | | 1 | | |
| **32** | Rx2+ | Receiver Data Non-Inverted. | CML-O | 3 | Output from Host | |
| **33** | Rx2- | Receiver Data Inverted. | CML-O | 3 | Output from Host | |
| **34** | GND | Module Ground. | | 1 | | |
| **35** | Rx4+ | Receiver Data Non-Inverted. | CML-O | 3 | Output from Host | |
| **36** | Rx4- | Receiver Data Inverted. | CML-O | 3 | Output from Host | |
| **37** | GND | Module Ground. | | 1 | | |
| **38** | Rx6+ | Receiver Data Non-Inverted. | CML-O | 3 | Output from Host | |
| **39** | Rx6- | Receiver Data Inverted. | CML-O | 3 | Output from Host | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **40** | GND | Module Ground. | | 1 | | |
| **41** | Rx8+ | Receiver Data Non-Inverted. | CML-O | 3 | Output from Host | |
| **42** | Rx8- | Receiver Data Inverted. | CML-O | 3 | Output from Host | |
| **43** | GND | Module Ground. | | 1 | | |
| **44** | INT/RSTn | Module Interrupt/Module Reset. | Multi-Level | 3 | Bi-Directional | 2 |
| **45** | Vcc | +3.3V Power. | | 2 | Power from Host | |
| **46** | Vcc | +3.3V Power. | | 2 | Power from Host | |
| **47** | SDA | 2-Wire Serial Interface Data. | LVCMOS-I/O | 3 | Bi-Directional | 1 |
| **48** | GND | Module Ground. | | 1 | | |
| **49** | Tx7- | Transmitter Data Inverted. | CML-I | 3 | Input from Host | |
| **50** | Tx7+ | Transmitter Data Non-Inverted. | CML-I | 3 | Input from Host | |
| **51** | GND | Module Ground. | | 1 | | |
| **52** | Tx5- | Transmitter Data Inverted. | CML-I | 3 | Input from Host | |
| **53** | Tx5+ | Transmitter Data Non-Inverted. | CML-I | 3 | Input from Host | |
| **54** | GND | Module Ground. | | 1 | | |
| **55** | Tx3- | Transmitter Data Inverted. | CML-I | 3 | Input from Host | |
| **56** | Tx3+ | Transmitter Data Non-Inverted. | CML-I | 3 | Input from Host | |
| **57** | GND | Module Ground. | | 1 | | |
| **58** | Tx1- | Transmitter Data Inverted. | CML-I | 3 | Input from Host | |
| **59** | Tx1+ | Transmitter Data Non-Inverted. | CML-I | 3 | Input from Host | |
| **60** | GND | Module Ground. | | 1 | | |

**Notes:**

1. Open-drain with pull-up resistor on the host.
2. See below for required circuit.

**Electrical Pin-Out Details for OSFP**



**Pin Descriptions for QSFP112**

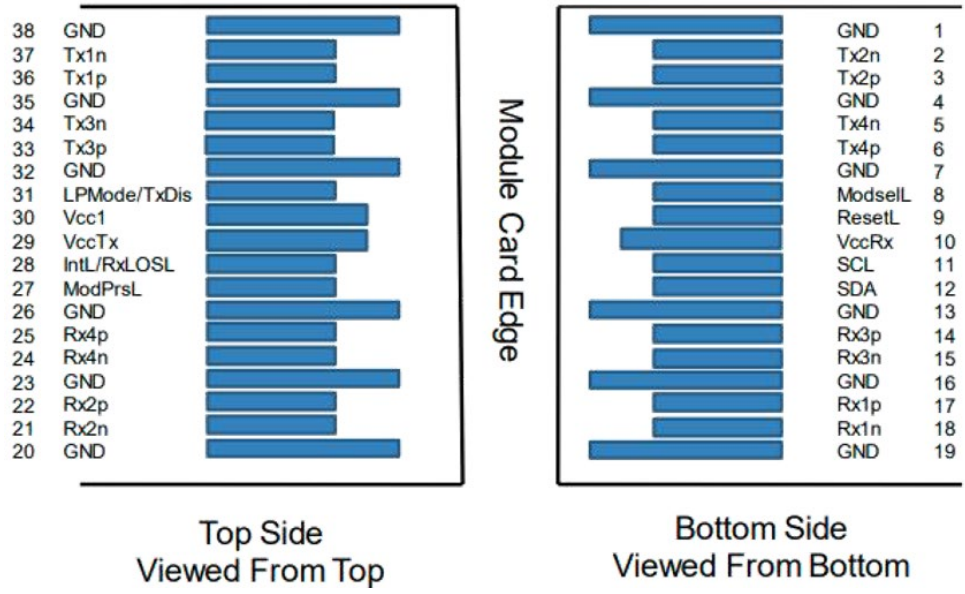
| Pin | Logic | Symbol | Name/Description | Plug Sequence | Notes |
|---|---|---|---|---|---|
| **1** | | GND | Module Ground. | 1 | 1 |
| **2** | CML-I | Tx2- | Transmitter Inverted Data Input. | 3 | |
| **3** | CML-I | Tx2+ | Transmitter Non-Inverted Data Input. | 3 | |
| **4** | | GND | Module Ground. | 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 | ModSelL | Module Select. | 3 | |
| **9** | LVTTL-I | ResetL | Module Reset. | 3 | |
| **10** | | VccRx | +3.3V Receiver Power Supply. | 2 | 2 |
| **11** | LVCMOS-I/O | SCL | 2-Wire Serial Interface Clock. | 3 | |
| **12** | LVCMOS-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. | 3 | |
| **29** | | Vcc | +3.3V Transmitter Power Supply. | 2 | 2 |
| **30** | | Vcc | +3.3V Power Supply. | 2 | 2 |
| **31** | LVTTL-I | LPMode | Low-Power Mode. | 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 |

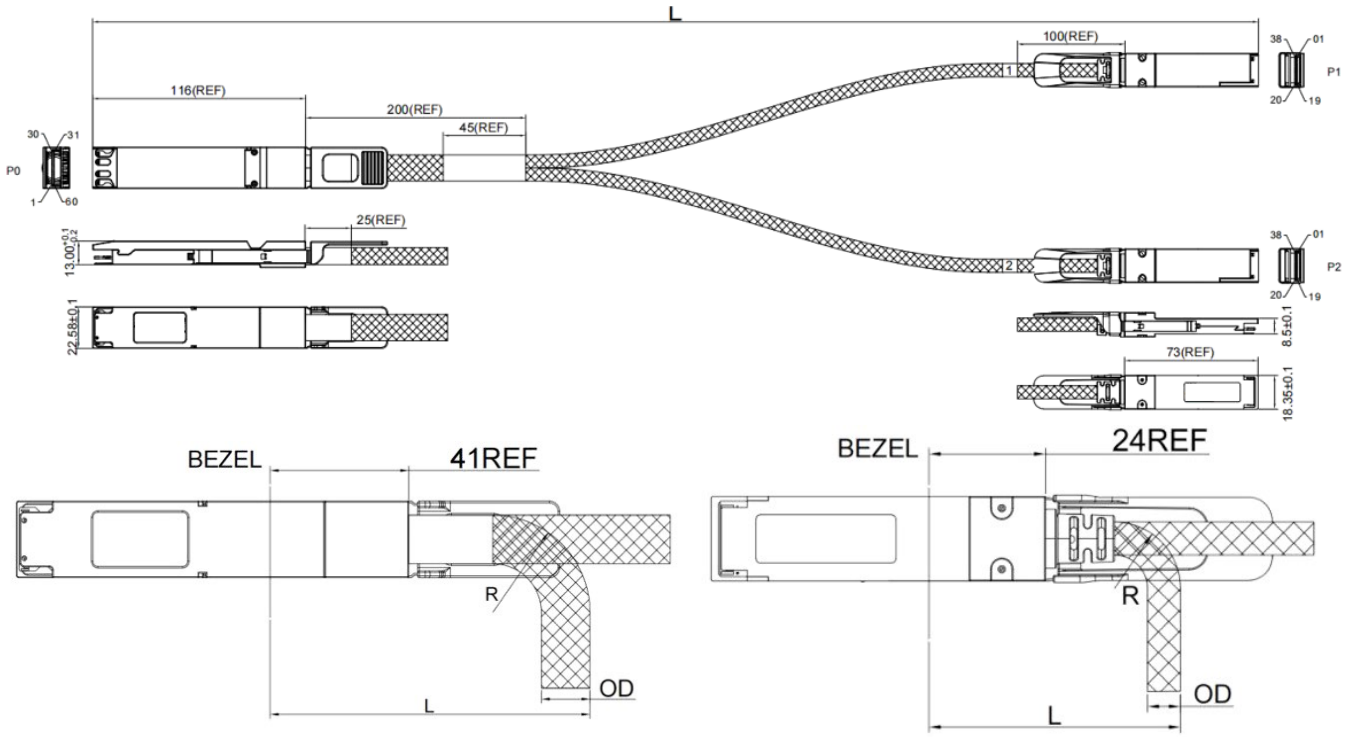
**Notes:**

1. GND is the symbol for signal and supply (power) common for the QSFP+ module. All are common within the QSFP 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 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.

**Electrical Pin-Out Details for QSFP112**



## Mechanical Specifications




| | | 800G OSFP | | | | QSFP112 | |
|---|---|---|---|---|---|---|---|
| **Gauge** | **OD** | **Bend Radius "R"** | **Min. Bend Radius "L"** | **Gauge** | **OD** | **Bend Radius "R"** | **Min. Bend Radius "L"** |
| 26AWG | 12.1MM | 25MM | 70MM | 26AWG | 8.3MM | 17MM | 55MM |

**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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