**CAB-Q-S-X.XM-C**
Arista Networks® Compatible TAA Compliant 40GBase-CU QSFP+ to 4xSFP+ Direct Attach Cable (Passive Twinax, X.Xm)

**Features**

- Hybrid cable conforms to the Small Form Factor SFF-8436 and SFF-8431
- Support for multi-gigabit data rates: 1 Gb/s – 10Gb/s (per channel)
- Maximum aggregate data rate: 40 Gb/s (4 x 10 Gb/s)
- Hybrid cable link length up to 5m (passive limiting)
- High-Density QSFP 38-PIN and 4x SFP 20-PIN connector
- Power Supply: +3.3V
- Lower power consumption: 0.02 W (typ.)
- Operating case temperature: 0 to 70°C

**Applications**

- 10G/40 Gigabit Ethernet
- InfiniBand4x SDR, DDR, QDR
- Switches, Routers, and HBAs
- Data Centers
- Fiber Channel

**Standards Compliance**

QSFP+

- SFF-8436
- InfiniBand
- QSFP+ MSA
- RoHS Compliant

SFP+

- SFF-8431
- SFP+ MSA
- RoHS Compliant

**Product Description**

This is an Arista Networks® compatible 40GBase-CU QSFP+ to 4xSFP+ direct attach cable that operates over passive copper with a maximum reach of 7.0m (22.9ft). 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' direct attach cables 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 Rating

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| **Storage Ambient Temperature** | | -40 | | 85 | °C |
| **Operating Case Temperature** | Tc | 0 | | 70 | °C |
| **Power Supply Voltage** | $V_{CC3}$ | 3.14 | 3.3 | 3.47 | V |
| **Power Dissipation** | PD | | | 0.02 | W |

## Pin Descriptions

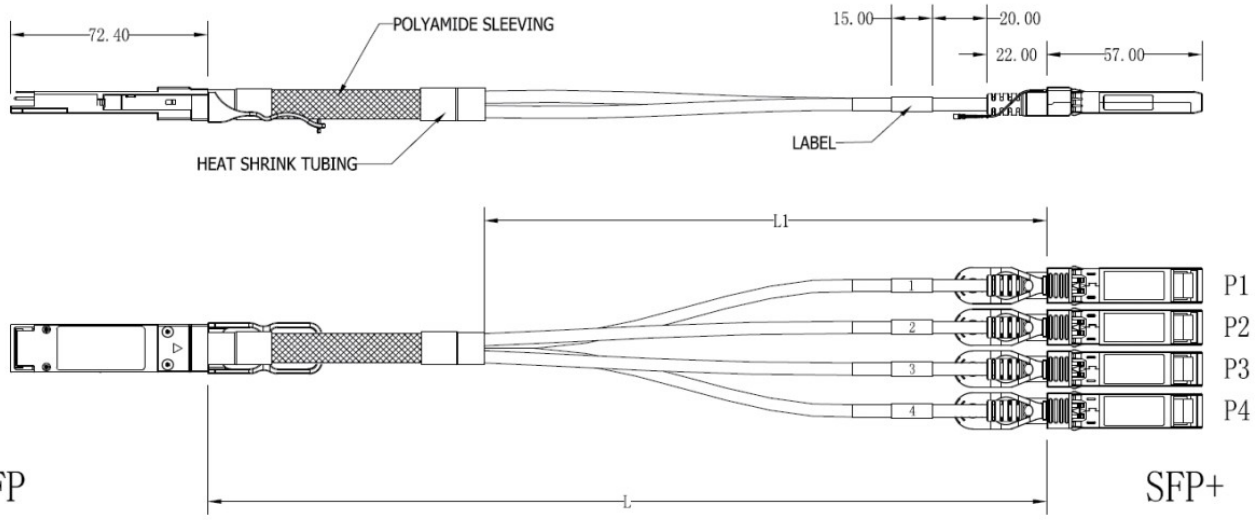
| Pin | Logic | Symbol | Name/Descriptions | Ref. |
|---|---|---|---|---|
| **1** | | GND | Module Ground | 1 |
| **2** | CML-I | Tx2- | Transmitter inverted data input | |
| **3** | CML-I | Tx2+ | Transmitter non-inverted data input | |
| **4** | | GND | Module Ground | 1 |
| **5** | CML-I | Tx4- | Transmitter inverted data input | |
| **6** | CML-I | Tx4+ | Transmitter non-inverted data input | |
| **7** | | GND | Module Ground | 1 |
| **8** | LVTTL-I | MODSEIL | Module Select | 2 |
| **9** | LVTTL-I | ResetL | Module Reset | 2 |
| **10** | | VCCRx | +3.3v Receiver Power Supply | |
| **11** | LVCMOS-I | SCL | 2-wire Serial interface clock | 2 |
| **12** | LVCMOS-I/O | SDA | 2-wire Serial interface data | 2 |
| **13** | | GND | Module Ground | 1 |
| **14** | CML-O | RX3+ | Receiver non-inverted data output | |
| **15** | CML-O | RX3- | Receiver inverted data output | |
| **16** | | GND | Module Ground | 1 |
| **17** | CML-O | RX1+ | Receiver non-inverted data output | |
| **18** | CML-O | RX1- | Receiver inverted data output | |
| **19** | | GND | Module Ground | 1 |
| **20** | | GND | Module Ground | 1 |
| **21** | CML-O | RX2- | Receiver inverted data output | |
| **22** | CML-O | RX2+ | Receiver non-inverted data output | |
| **23** | | GND | Module Ground | 1 |
| **24** | CML-O | RX4- | Receiver inverted data output | |
| **25** | CML-O | RX4+ | Receiver non-inverted data output | |
| **26** | | GND | Module Ground | 1 |
| **27** | LVTTL-O | ModPrsL | Module Present, internal pulled down to GND | |
| **28** | LVTTL-O | IntL | Interrupt output should be pulled up on host board | 2 |
| **29** | | VCCTx | +3.3v Transmitter Power Supply | |
| **30** | | VCC1 | +3.3v Power Supply | |

| | | | | |
|---|---|---|---|---|
| **31** | LVTTL-I | LPMode | Low Power Mode | 2 |
| **32** | | GND | Module Ground | 1 |
| **33** | CML-I | Tx3+ | Transmitter non-inverted data input | |
| **34** | CML-I | Tx3- | Transmitter inverted data input | |
| **35** | | GND | Module Ground | 1 |
| **36** | CML-I | Tx1+ | Transmitter non-inverted data input | |
| **37** | CML-I | Tx1- | Transmitter inverted data input | |
| **38** | | GND | Module Ground | 1 |

**Note:**

1. GND is the symbol for signal and supply (power) common for the QSFP+ module. All are common with the QSFP+ module and all module voltages are references to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.
2. Vcc Rx, Vcc1 and Vcc Tx are the receiver and transmitter power supplies and shall be applied concurrently. Requirements defined for the host side of the Host Edge Card Connector are listed in Table 6. Recommended host board power supply filtering is shown in Figure 4. Vcc Rx Vcc1 and Vcc Tx may be internally connected within the QSFP+ Module in any combination. The connector pins are each rated for a maximum current of 500 mA.

**Mechanical Specifications**




| | | | |
|---|---|---|---|
| L≤0.5 | +3/−3 | L1=4/5L | +6/−6 |
| 0.5<L≤3 | +5/−5 | L1=4/5L | +10/−10 |
| 3<L≤10 | +8/−8 | L1=4/5L | +16/−16 |