

## X66120-2-PRO

NetAPP® Compatible TAA 40GBase-CU QSFP+ to 4xSFP+ Direct Attach Cable (Passive Twinax, 2m, 30AWG)

### Features

- Hybrid cable conforms to the Small Form Factor SFF-8436 and SFF-8431
- Maximum aggregate data rate: 40 Gbps (4 x 10 Gbps)
- Support for multi-gigabit data rates: 1 Gbps - 10Gbps (per channel)
- 20-PIN connector
- Power Supply: +3.3V
- High-Density QSFP 38-PIN and 4x SFP
- Lower power consumption: 0.02W
- Operating temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free



### Applications:

- 10/40Gigabit Ethernet
- Infiniband 4x SDR, DDR, QDR

### Product Description

This is a NetAPP® Compatible 40GBase-CU QSFP+ to 4xSFP+ direct attach cable that operates over passive copper with a maximum reach of 2m. It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. We stand behind the quality of our products and proudly offer a limited lifetime warranty. This cable is TAA (Trade Agreements Act) compliant and is built to comply with MSA (Multi-Source Agreement) standards.

Proline's 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.



## Absolute Maximum Ratings

| Parameter                   | Symbol            | Min. | Typ. | Max. | Unit |
|-----------------------------|-------------------|------|------|------|------|
| Storage Ambient Temperature | T <sub>stg</sub>  | -40  |      | 85   | °C   |
| Operating Case Temperature  | T <sub>c</sub>    | 0    |      | 70   | °C   |
| Power Supply Voltage        | V <sub>cc</sub>   | 3.14 | 3.3  | 3.47 | V    |
| Power Dissipation           | P <sub>Diss</sub> |      |      | 0.02 | W    |

## Pin Descriptions

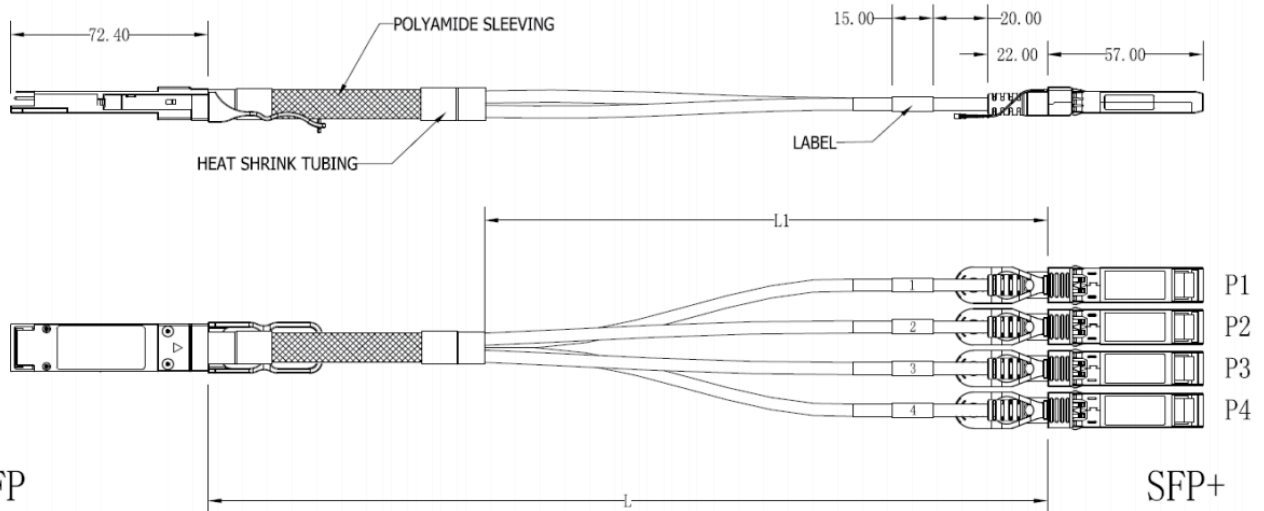
| Pin | Logic       | Symbol  | Name/Description  | Notes |
|-----|-------------|---------|---|-------|
| 1   |             | GND     | Module Ground.  | 1     |
| 2   | CML-I       | Tx2-    | Transmitter Inverted Data Input.                        |       |
| 3   | CML-I       | Tx2+    | Transmitter 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     | ModSelL | Module Select.  | 2     |
| 9   | LVTTL-I     | ResetL  | Module Reset.   | 2     |
| 10  |             | VccRx   | +3.3V Receiver Power Supply.                            |       |
| 11  | LVC MOS-I   | SCL     | 2-Wire Serial Interface Clock.                          | 2     |
| 12  | LVC MOS-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. Internally pulled down to the GND.      |       |
| 28  | LVTTL-O     | IntL    | Interrupt output should be pulled up on the 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 |

**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. Requirements defined for the host side of the Host Edge Card Connector are listed. Recommended host board power supply filtering is shown. VccRx, Vcc1, and VccTx may be internally connected within the QSFP+ module in any combination. The connector pins are each rated for a maximum current of 500mA.

**Mechanical Specifications**



QSFP

SFP+

|                  |       |             |         |
|------------------|-------|-------------|---------|
| $L \leq 0.5$     | +3/-3 | $L1 = 4/5L$ | +6/-6   |
| $0.5 < L \leq 3$ | +5/-5 | $L1 = 4/5L$ | +10/-10 |
| $3 < L \leq 10$  | +8/-8 | $L1 = 4/5L$ | +16/-16 |

**About Us:**

Proline Options is one of North America's leading providers of transceivers and high speed cabling. With a reputation for quality, tested products that cover the connectivity spectrum, Proline Options has a solution for you regardless of the specification.

At Proline Options, every product is tested in its intended application - never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.



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