

# QSFP+ to Four SFP+ Breakout Copper Cable Assemblies

To meet the needs for migration from 10 to 40 GbE, Panduit offers QSFP+ to Four SFP+ Direct Attach Breakout Cable Assemblies. As part of the Panduit High Speed Data Transport (HSDT) solution, these passive cables provide a cost-effective solution for interconnecting high speed 40 GbE switches and servers to existing 10 GbE equipment.

The 40 GbE QSFP+ end operates as four separate 10 Gb/s channels, which are connected to four 10 Gb/s SFP+ equipment ports. The four 10 Gb/s SFP+ ports can be located on the same switch/server or four different locations within the same rack. Each breakout cable includes Panduit® Tak-Ty® Hook & Loop Cable Ties, which are adjustable to control the breakout point for maximum flexibility.

End-to-end high speed data transport solutions from Panduit deliver enhanced availability, agility, and security. Visit [www.panduit.com](http://www.panduit.com) to learn more about how these solutions help customers manage risk across their physical infrastructure.



| Key Features   | Benefits  |
|--|---|
| <b>Compliant to SFF-8431</b>   | Compliant with 40GBASE-CR4 QSFP+ and 10 GbE SFP+ enabled equipment; hot pluggable to QSFP+/SFP+ compliant host ports  |
| <b>EEPROM compliant to SFF-8472</b>  | Ensures interoperability with 10 GbE and 40 GbE equipment   |
| <b>Passive low power assembly</b>  | Provides a low cost, low power alternative to fiber optics up to 3.5 meters   |
| <b>100% performance tested</b>   | Confidence that each assembly delivers specified performance for ensured network availability   |
| <b>Low latency performance</b>   | Ideal for high performance computer clustering and other latency sensitive applications   |
| <b>Robust construction</b>   | High speed, 2-pair, 10 GHz, twin-axial cable, factory terminated to QSFP+ and SFP+ modular connectors; rated to a minimum 250 mating cycles   |
| <b>Advanced connector design</b>   | Excellent EMI resistance and alien crosstalk due to continuous shielding throughout the assembly including a unique design for transitioning the four cables into the QSFP+ housing |
| <b>Adjustable breakout</b>   | Tak-Ty® Hook & Loop Cable Ties can be adjusted to control breakout points on the breakout end of the cable assembly   |
| <b>High density deployment</b>   | QSFP+ connectors triple switch port density; robust easy-to-use latching feature allows high density belly-to-belly installation and deployments                                    |
| <b>Variety of lengths</b>  | Available 1 to 3.5 meters (0.5 meter increments) for design flexibility   |
| <b>Part of the Panduit Unified Physical Infrastructure<sup>SM</sup> solution</b> | Designed to be integrated with Panduit® NetAccess™ Cabinets for design flexibility, improved thermal, and cable management  |

## Key applications include:

- Top of Rack Switch to Server
- 8 Gb/s Fibre Channel
- Fibre Channel over Ethernet (FCoE)
- 10 Gigabit Ethernet

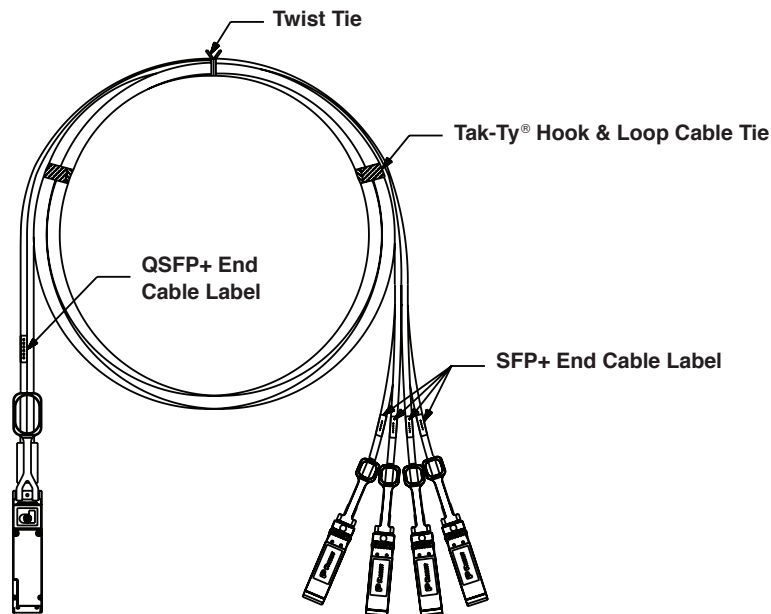
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## Technical Information

|                            |  |
|----------------------------|--|
| Characteristic impedance   | 100 +/- 10 Ohm                                 |
| Temperature range          | -25°C to 80°C (-13°F to 176°F)                 |
| IEC flame compliance       | IEC 60332-3-24                                 |
| Bend radius                | 5 x O.D. single time, 10 x O.D. repeated times |
| Insertion force to cage    | 40N (9 lbf.) maximum                           |
| Withdrawal force from cage | 30N (7 lbf.) maximum                           |
| Durability                 | 250 mating cycles minimum                      |
| ROHS status                | Compliant                                      |

## Ordering Information

| Part Number     | Length (m) | Length (Ft.) | Cable Gauge | No. Tak-Ty® Hook & Loop Cable Ties | Nominal Cable O.D. |      | Cable Color |
|-----------------|------------|--------------|-------------|------------------------------------|--------------------|------|-------------|
|                 |            |              |             |                                    | mm                 | In.  |             |
| PHQ4SFPXA1MBL   | 1          | 3.3          | 30 AWG      | 2                                  | 4.1                | 0.61 | Black       |
| PHQ4SFPXA1.5MBL | 1.5        | 5.0          | 30 AWG      | 2                                  | 4.1                | 0.61 | Black       |
| PHQ4SFPXA2MBL   | 2          | 6.6          | 30 AWG      | 3                                  | 4.1                | 0.61 | Black       |
| PHQ4SFPXA2.5MBL | 2.5        | 8.3          | 30 AWG      | 3                                  | 4.1                | 0.61 | Black       |
| PHQ4SFPXA3MBL   | 3          | 9.8          | 30 AWG      | 4                                  | 4.1                | 0.61 | Black       |
| PHQ4SFPXA3.5MBL | 3.5        | 11.6         | 30 AWG      | 4                                  | 4.1                | 0.61 | Black       |



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