

Key Features

- ➔ Smallest and lowest power 10 GbE and 40 GbE optic module form factor
- ➔ Hot swappable to maximize uptime and simplify serviceability
- ➔ Optical interoperability with pluggable form factors meeting IEEE Ethernet standards
- ➔ Flexibility of media and interface choice on a port-by-port basis
- ➔ Robust design for enhanced reliability
- ➔ Pre-qualified for compatibility with Pica8 open switches

Overview

Pica8's Small Form-Factor Pluggable (SFP+) and Quad Small Form-factor Pluggable (QSFP+) optics modules offer customers a variety of high-density and low-power 10 GbE and 40 GbE connectivity options over fiber media.

Pica8 offers three transceiver types, each optimized for a different media and reach.

10GBASE-SR



10GBASE-LR



40GBASE-SR4



10 Gigabit Ethernet SFP+ Options

10GBASE-SR	Up to 300 m link length over OM3 multimode fiber. Optical interoperability with 10GBASE-SRL
10GBASE-LR	Up to 10 km link length over standard single-mode fiber (G.652)

40 Gigabit Ethernet QSFP+ Optic Options

40GBASE-SR4	Up to 100 m link length over parallel OM3 multimode fiber or 150 m over OM4 multimode fiber
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* To ensure that specifications are met over FDDI-grade OM1 and OM2 fibers, the transmitter should be coupled through a mode conditioning patch cord. No mode conditioning patch cord is required for applications over OM3.

Ordering Information

Order Number	Product Description
P-SFP-10G-SR	10GBASE-SR SFP+ Optics Module
P-SFP-10G-LR	10GBASE-LR SFP+ Optics Module
P-QSFP-40G-SR4	40GBASE-SR4 QSFP+ Optics Module, up to 100m over OM3 MMF or 150m over OM4 MMF

Physical Characteristics

- SFP+ HxWxD:
12.3 x 13.7 x 56.5mm
- QSFP+ HxWxD:
12.7 x 18.4 x 71.0mm

Environmental Characteristics

- Operating Temperature 0 - 70 °C
- Storage Temperature -40 - 85 °C
- Relative Humidity 5 - 95%
- Operating Altitude 0 - 10,000 ft

Power Requirements

- The maximum power consumption for Pica8 SFP+ modules is less than 1W
- The maximum power consumption for Pica8 QSFP+ modules is less than 1.5W

Safety

- Laser Class 1: 21 CFR 1040.10 Laser Notice 50
- Laser Class 1: IEC 60825-1

IEEE Compliance

- 802.3ae 10 Gigabit Ethernet
- 802.3ba 40 Gigabit Ethernet

Standards Compliance

- RoHS-6

10 Gigabit Ethernet SFP+ Optics Specifications

PHY Type	Connector Type	Wavelength (nm)	Cable Type	Core Size (um)	Modal Bandwidth (MHz*Km)	Tx power (dBm)	Rx power (dBm)	Operating Distance (m)
10GBASE-SR	LC	850	MMF	62.5 50.0 50.0 50.0	200 500 2000 4700	-7.3 to -1	< 9.9	33 m 82 m 300 m 550 m
10GBASE-LR	LC	1310	SMF	9.3	-	-8.2 to 0.5	< 14.4	10 km

** To ensure that specifications are met over FDDI-grade OM1 and OM2 fibers, the transmitter should be coupled through a mode conditioning patch cord. No mode conditioning patch cord is required for applications over OM3.

40 Gigabit Ethernet QSFP+ Optic Specifications

PHY Type	Connector Type	Wavelength (nm)	Cable Type	Core Size (um)	Modal Bandwidth (MHz*Km)	Tx power (dBm)	Rx power (dBm)	Operating Distance (m)
40GBASE-SR4	12-Fiber MPO (MTP)	850	OM3 OM4	50.0 50.0	2000 4700	-7.6 to -2.4 Per Lane	-5.4 to 2.5 Per Lane	100 m 150 m

Uncertified Optics and Cables Supported

Interface Type	SFP+ Ports	QSFP+ Ports
1000BASE-SX, LX, TX	Supported	-
10GBASE-CR4	Pre-Terminated Twinax Copper Ranging From 0.5m to 7m	-
10GBASE-SR	300 m	-
10GBASE-LRM	300 m	-
10GBASE-LR	10 km	-
40GBASE-CR4	-	Pre-Terminated Twinax Copper Ranging From 0.5m to 7m
40GBASE-SR4	-	100 m (OM3) / 150 m (OM4)
40GBASE-LR4	-	10 km

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