

Key Features

Deployment flexibility of 10GbE or GbE modules in the same physical port

Smallest and lowest power 10GbE optic module form factor

Hot swappable to maximize uptime and simplify serviceability

Optical interoperability with XFP, X2 and XENPAK pluggable form factors

Flexibility of media and interface choice on a port-by-port basis

Robust design for enhanced reliability

Overview

The Arastra Small Form-Factor Pluggable (SFP) Optics Modules and Cables offer customers a wide variety of high-density and low-power 10 Gigabit and 1 Gigabit Ethernet connectivity options over fiber or copper media.

To accommodate an ever increasing spectrum of 10 Gigabit Ethernet applications, Arastra offers five transceiver types, each optimized for a different media and distance reach. In addition, the SFP+ ports also support three Gigabit Ethernet SFP transceiver types for single-mode fiber, multi-mode fiber and Cat-5 copper.



10GBASE-CR Copper Cable



10GBASE-SRL SFP+



1000BASE-T SFP

10 Gigabit Ethernet SFP+ Options

PHY Type	Reach
10GBASE-SR	Up to 300m link length with 2000 MHz*km MMF (OM3). Optical interoperability with 10GBASE-SRL
10GBASE-SRL	Up to 100m link length with 2000 MHz*km MMF (OM3). Optical interoperability with 10GBASE-SR
10GBASE-LRM	Up to 220m link length with 50 μm and 62.5 μm MMF links
10GBASE-LR	Up to 10 km link length on standard single-mode fiber (SMF, G.652)
10GBASE-CR	Pre-terminated twin-ax copper cables with link lengths of 1m, 2m, 3m and 5m

Gigabit Ethernet SFP Options

PHY Type	Product Description
1000BASE-SX	Up to 550m link length with 500 MHz*km MMF. (OM2)
1000BASE-LX	Up to 10 km link length on SMF and up to 550m on MMF*
1000BASE-T	Up to 100m link length over Category 5 copper cables

*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.

Physical Characteristics

- Size HxWxD: 0.48 x 0.54 x 2.22"
(12.3 x 13.7 x 56.5mm)

Environmental Characteristics

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

Power Requirements

- The maximum power consumption for Aratra SFP and SFP+ modules is less than 1 Watt.

Safety

- Laser Class 1 21CFR-1040.10 LN#50
- Laser Class 1 IEC60825-1

IEEE Compliance

- 802.3ab 1000BASE-T
- 802.3z 1000BASE-X
- 802.3ae 10 Gigabit Ethernet

Standards Compliance

- GR-20-CORE
- GR-326-CORE
- GR-1435-CORE

10 Gigabit Ethernet Copper Cable Specifications

PHY Type	Connector Type	Wavelength (nm)	Cable Type	Core Size (um)	Modal Bandwidth (MHz*Km)	Operating Distance (m)
10GBASE-CR	SFP+ (Both ends)	-	Twinax Copper	-	-	1m 2m 3m 5m

10 Gigabit Ethernet SFP+ Specifications

PHY Type	Connector Type	Wavelength (nm)	Cable Type	Core Size (um)	Modal Bandwidth (MHz*Km)	Operating Distance (m)
10GBASE-SR	LC	850	MMF	62.5	200	33m
				50.0	400	66m
				50.0	500	82m
				50.0	2000	300m
10GBASE-SRL	LC	850	MMF	62.5	200	11m
				50.0	400	22m
				50.0	500	27m
				50.0	2000	100m
10GBASE-LRM	LC	1310	MMF	62.5	500	220m
				50.0	400	100m
				50.0	500	220m
10GBASE-LR	LC	1310	SMF	G.652		10km

Gigabit Ethernet SFP Specifications

PHY Type	Connector Type	Wavelength (nm)	Cable Type	Core Size (um)	Modal Bandwidth (MHz*Km)	Operating Distance (m)
1000BASE-SX	LC	850	MMF	62.5	160	220m
				62.5	200	275m
				50.0	400	500m
				50.0	500	550m
1000BASE-LX	LC	1300	MMF*	62.5	500	550m
				50.0	400	550m
				50.0	500	550m
			SMF			10km
1000BASE-T	RJ-45	-	Cat5 (UTP)			100m

All cables and cable assemblies used must be compliant with the standards specified in the standards section.

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**Minimum cabling distance for -LR, -SR, -SX, -LX modules is 2m and 0.5m for -LRM modules according to IEEE standards

Ordering Information

Order Number	Product Description
CAB-SFP-SFP-1M	10GBASE-CR SFP+ Cable 1 Meter
CAB-SFP-SFP-2M	10GBASE-CR SFP+ Cable 2 Meter
CAB-SFP-SFP-3M	10GBASE-CR SFP+ Cable 3 Meter
CAB-SFP-SFP-5M	10GBASE-CR SFP+ Cable 5 Meter
SFP-10G-SR	10GBASE-SR SFP+ Optics Module
SFP-10G-SRL	10GBASE-SRL SFP+ Optics Module
SFP-10G-LRM	10GBASE-LRM SFP+ Optics Module
SFP-10G-LR	10GBASE-LR SFP+ Optics Module
SFP-1G-SX	1000BASE-SX SFP Optics Module
SFP-1G-LX	1000BASE-LX SFP Optics Module
SFP-1G-T	1000BASE-T SFP Copper Module

Warranty

The Arastra small form factor pluggables and cables include a 1 year limited hardware warranty, which covers parts repair or replacement with a 10-business day turn-around after unit received.

Service and Support

Additional support services including advanced hardware replacement are available.

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