

10GBASE XENPAK



The XENPAK (pronounced “zen-pack”) pluggable interface is an industry standard or multi-source agreement (MSA) for pluggable 10 Gigabit Ethernet optics.

XENPAK optics are supported on:

- BlackDiamond® 10808 (10G6X, 10G2X, 10G2H modules)
- BlackDiamond 8800 (10G4X module)
- BlackDiamond 6800 (10GX3 module)
- Summit® 400 series and Summit X450 series (XGM-2xn module)

	SR XENPAK	LR XENPAK	ER XENPAK	ZR XENPAK
Fiber Type	Multimode (MMF)	Single-mode (SMF)	Single-mode (SMF)	Single-mode (SMF)
Connector type	SC	SC	SC	SC
Launch power Min (avg.)	-7.3 dBm ¹	-8.2 dBm ¹	-4.7 dBm ¹	0 dBm
Receiver power range				-7dBm to -22 dBm
Optical link budget	Depends on fiber type ²	6.2 dB	10.9 dB	22 dB
Wavelength range	840 to 860 nm	1260 to 1355 nm	1530 to 1565 nm	1530 to 1565 nm
Distance range	2 m to 300 m ³	2 m to 10 km	2 m to 40 km ⁴	40 km to 80 km ⁵
Chromatic Dispersion tolerance max				1600 ps/nm
Mean Time Between Failure (MTBF)		900,000 hours	3,000,000 hours	

* Note: All Extreme Networks qualified XENPAK pluggables meet or exceed the IEEE 802.3ae 10 Gigabit Ethernet specification. The table above shows some XENPAK parameters that may be useful for 10 Gigabit Ethernet deployments.

¹ This information is provided as a reference value and not a pass/fail criteria. The launch power (measured using the average power method used by power meters) is measured at the factory. This data is provided with each module shipped.

² 62.5µm (160/200 MHz*km) = 1.6 dB (typically 26 meters)
 62.5µm (200 MHz*km) = 1.6dB (typically 33 meters)
 50µm (400 MHz*km) = 1.7 dB (typically 66 meters)
 50µm (500 MHz*km) = 1.8 dB (typically 82 meters)
 50µm (2000 MHz*km) = 2.6 dB (typically 300 meters)

³ Depends on type (e.g 62.5µm or 50µm) and modal bandwidth (e.g. 160Mhz*km, 500Mhz*km, 2000Mhz*km etc.)

⁴ 5 dBm minimum attenuation required. At 0.3 dB/km, this is approximately 16.7 km

⁵ Typical reference values for distance. Optical specifications guaranteed: Tx power>0 dBm, Rx sensitivity < -22 dBm with no path dispersion penalty. Dispersion tolerance up to 1600ps/nm

SPECIFICATIONS

Physical Specifications

- Inserts into a XENPAK slot on a 10 Gigabit Ethernet I/O module
- Dimensions (H x W x D): 0.9 x 1.7 x 5.3 in. (2.3 x 4.3 x 13.5 cm)
- Weight: 0.25 lb (0.11 kg) unpackaged, 0.5 lb (0.23 kg) packaged
- Shipping box dimensions (H x W x D): 1.9 x 5.3 x 8.0 in (4.8 x 13.5 x 20.3 cm)

Environmental Conditions

- Operating Temperature: 0°C to 40°C
- Storage Temperature: -40°C to 70°C
- Operating Humidity: 10% to 95% relative humidity, non-condensing
- EN/ETSI 300 019-2 v2.1.2 - Operational, storage and transportation conditions for telecommunication equipment.

Safety Compliance

North American Safety of ITE

- UL60950 3rd Edition, Registered Component (USA Safety of ITE)

European Safety of ITE

- EN60950:2000+All Available Country Deviations
- Low Voltage Directive (LVD) International
- Safety of ITE

Laser Safety

- EN60825-1:1994, A11:1996, A2:2001
- 21 CFR Subpart J, Class 1 Laser
- CDRH Letter of Approval

EMI/EMC Compliance

North America EMC for ITE

- FCC CFR 47 Part 15 Class A (USA)

European EMC standards

- EN 55022:1998 Class A
- EN 55024:1998 Class A includes IEC 61000-4-2, 3, 4, 5, 6, 11
- ETSI EN 300 386: v1.3.1 2001-09
- (EMC Telecommunications)
- 89/336/EEC EMC Directive

International EMC Certifications

- CISPR 22:1997 Class A (International Emissions)
- CISPR 24:1997 Class A (International Immunity)

Note: All XENPAK modules meet the above standards when installed in Extreme Networks equipment.

ORDERING INFORMATION

Part Number	Part Name	Description
10110	SR XENPAK	10 Gigabit Ethernet XENPAK Transceiver, 850nm, up to 300m on Multimode fiber, SC connector
10111	LR XENPAK	10 Gigabit Ethernet XENPAK Transceiver, 1310nm, up to 10km on single-mode fiber, SC connector
10112	ER XENPAK	10 Gigabit Ethernet XENPAK Transceiver, 1550nm, up to 40km on single-mode fiber, SC connector
10113	ZR XENPAK	10 Gigabit Ethernet XENPAK Transceiver, 1550nm, up to 80km on single-mode fiber, SC connector



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