BROCADE 4×16 GFC SWL (100 M) OPTICAL TRANSCEIVER

STORAGE AREA NETWORK

Optimized, Certified Optical Transceivers for the Highest-Performance Data Center Fabrics

HIGHLIGHTS

- Provides high system reliability through rigorous qualification and certification processes
- Leverages unique design parameters to provide the highest performance with industry-leading Brocade switch and backbone platforms
- Helps eliminate issues related to transceiver incompatibility, reducing downtime and support costs
- Helps eliminate issues resulting from unexpected design changes, providing ongoing end-to-end compatibility
- Optimizes connectivity with Brocade platforms to enable maximum cable distance
- Provides support for high throughput Inter-Chassis Links (ICLs)

Today's enterprise data centers are undergoing an infrastructure transformation, requiring higher speeds, greater scalability, and higher levels of performance and reliability to better meet the demands of business. As speed and performance needs increase, optical transceivers—once considered a generic component of Fibre Channel switching technologies—have become an integral part of overall system design. However, optical transceiver design margins and parameters vary widely, and can be the difference between an optimized, highly reliable fabric and incompatibility issues that drive up support costs.

Brocade® 4×16 GFC Short Wavelength (SWL) (100 M) Quad Small Form-Factor Pluggables (QSFPs), part of the Brocade family of optical transceivers, are optimized to fully leverage Brocade 16 GFC backbone and switch products. Together, these optical transceivers provide state-of-the-art performance, helping IT organizations achieve new levels of infrastructure consolidation while expanding the capabilities of their applications and services.

END-TO-END COMPATIBILITY AND RELIABILITY

Brocade 4×16 GFC SWL (100 M) QSFPs are optical transceivers that support highly reliable operations in data center fabrics and are optimized for Brocade 16 GFC switching platforms. They undergo rigorous qualification and certification testing that results in an end-to-end solution that is easier to maintain—helping to improve the availability of data center fabrics supporting mission-critical applications.

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KEY FEATURES

Brocade 4×16 GFC SWL QSFPs are hot-swappable, low-voltage (3.3 V) digital diagnostic optical transceivers that support high-speed serial links over multimode optical fiber at signaling rates up to 14.025 Gbps. They comply with the QSFP MSA mechanical specification (SFF-8436).

Brocade 4×16 GFC SWL QSFPs are multi-rated 850 nm QSFPs that comply with 14.025 Gbps Fibre Channel specifications. Product highlights include:

- 850 nm multimode VCSEL transmitter
- Diagnostic features per SFF-8472 "Diagnostic Monitoring Interface for Optical Transceivers," providing real-time monitoring of:
  - Transmitted optical power
  - Received optical power
  - Laser bias current
  - Temperature
  - Supply voltage
- Industry-standard MTP 1×12 ribbon cable connector
- 100 M link length on OM4 fiber (XBR-000232)
- IEC 60825-1 Class 1/CDRH Class 1 laser, eye-safe
- Compliance with Restriction on Hazardous Substances (RoHS) directive

FAMILY OF OPTICAL TRANSCEIVERS

Brocade offers a comprehensive family of reliable optical transceivers to provide highly compatible, high-performance connectivity to Brocade backbone, director, and switch products.

For additional ordering information, contact a Brocade representative or visit www.brocade.com/howtobuy.

BROCADE 4×16 GFC SWL SPECIFICATIONS

Systems	
Performance	Fibre Channel: 4×14.025 Gbps line speed, full duplex
Media	Hot-pluggable, industry-standard Quad Small Form-Factor Pluggable (QSFP), MTP 1×12 ribbon cable connector, Short Wavelength (SWL)

Operating parameters	Transmit (Tx):
	
	    Wavelength: 840 to 860 nm
	    Spectral width: 0.50 nm (XBR-000232)
	    Average power: −7.6 to +2.4 dBm per channel
	    RIN: −128 dB/Hz max
	    Optical return loss: 12 dB max
	    OMA: −2.5 to +3 dBm per channel
	Receive (Rx):
	    Wavelength: 840 to 860 nm
	    Average power: 2.4 dBm max per channel
	    Optical return loss: −12 dB min
	    SRS OMA: −10 dBm max per channel
	    3 dB cutoff maximum: 18 GHz

Operating distances	XBR-000232: 66 M on OM3 multimode fiber, 100 M on OM4 multimode fiber • 1 dB patch panel connector loss is allowed for 100 M OM4 link distance when FEC is enabled
Mechanicals	
Size	Width: 18.35 mm (0.72 in.) Height: 12.67 mm (0.50 in.) Depth: 71.00 mm (2.82 in.)
Environmentals	
Storage temperature	−40°C to 100°C (−40°F to 212°F)
Power	
Power dissipation	1.5 W

BROCADE 4×16 GFC SWL ORDERING INFORMATION

Systems	
XBR-000232	QSFP, SWL, 4×16 GFC, 100 M on OM4 multimode fiber, 66 M on OM3 multimode fiber

Regulatory and Standards Compliance

• North America: UL/CSA 60950, CDRH Class 1

• European Union: EN 60950, EN 60825 Class 1

Caution:

• *Do not look through the optical ports, as it is a potential eye hazard.*

• *SFP is an ESD sensitivity Class 2 device. It should be handled accordingly.*

For information related to SFF Committee documentation, visit www.sffcommittee.org.

For information about supported SAN standards, visit www.brocade.com/sanstandards.

For information about switch and device interoperability, visit www.brocade.com/interoperability.

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