BROCADE 8 GBPS SWL MINI OPTICAL TRANSCEIVER

DATA CENTER

Optimized, Certified Optical Transceivers for Extending Data Center Networks

HIGHLIGHTS

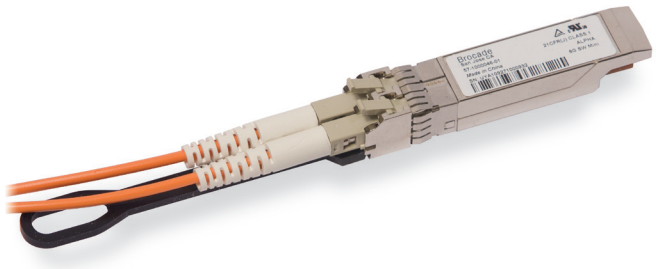
- Increases switch port density by providing a more compact design
- Provides high system reliability based on rigorous qualification and certification testing
- Leverages unique design parameters to provide the highest performance with industry-leading Brocade solutions, supporting business continuity
- Helps eliminate issues related to SFP 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

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 network 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.

The Brocade® 8 Gbps Short Wavelength (SWL) mini optical transceiver, part of the Brocade family of optical transceivers, is optimized to interoperate with the high-density 64-port blade in Brocade DCX® Backbones. To increase port density, the mini Small Form-Factor Pluggable (SFP) design narrows the optical centerline of a conventional SFP. When combined with the new Brocade DCX blade design, these optical transceivers provide higher levels of network density to enable infrastructure consolidation, while maintaining state-of-the-art performance.

END-TO-END COMPATIBILITY AND RELIABILITY

Brocade 8 Gbps SWL mini optical transceivers support highly reliable operations in data center fabrics, and are optimized for Brocade 8 Gbps switching platforms. They undergo rigorous qualification and certification testing that results in an end-to-end solution that is easier to maintain—helping improve the availability of data center fabrics supporting mission-critical applications.



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KEY FEATURES

Brocade 8 Gbps SWL mini SFPs 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 8.5 Gbps. They comply with mini SFP mechanical, optical, and electrical specifications (FC-PI-4) for dual simplex LC transceivers. The mini SFP form factor narrows the optical centerline of a conventional SFP from 6.25 mm to 5.25 mm.

The Brocade 8 Gbps SWL mini optical transceiver is a multi-rated 850 nm SFP that complies with 8.5/4.25/2.125 Gbps Fibre Channel specifications.

Product highlights include:

- 850 nm multimode VCSEL transmitter
- FC-PI-4 compliance for 8.5/4.25/2.125 Gbps operation
- 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
- Dual simplex LC connector
- 150 m link lengths at 8.5 Gbps on OM3 fiber
- IEC 60825-1 Class 1/CDRH Class 1 laser eye safe
- Compliance with Restriction on Hazardous Substances (RoHS) directive

LEADING FAMILY OF OPTICAL TRANSCEIVERS

Brocade offers a comprehensive family of reliable SFPs 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.

MAXIMIZING INVESTMENTS

To help optimize technology investments, Brocade and its partners offer complete solutions that include education, support, and services. For more information, contact a Brocade sales partner or visit www.brocade.com.

BROCADE 8 GBPS SWL MINI SFP SPECIFICATIONS

System	
Performance	Fibre Channel: 2.125, 4.250, and 8.5 Gbps line speed, full duplex; auto-sensing of 2, 4, and 8 Gbps port speeds
Media	Hot-pluggable, mini Small Form-Factor Pluggable (SFP), dual simplex LC connector; Short Range (SR)
Operating parameters	**Transmit (Tx):** Wavelength: 840 to 860 nm Average power: –8 dBm RIN: –128 dB/Hz max Optical return loss: –12 dB max OMA: –5.2 dBm min; 302 dBm max **Receive (Rx):** Average power: 0 dBm Optical return loss: –12 dB Unstressed sensitivity: 76 µW, –11.2 dBm SRS OMA: 148 µW, –8.3 dBm 3 dB cutoff maximum: 12 GHz
Mechanical	
Size	Width: 11.70 mm (0.46 inches) Height: 10.25 mm (0.40 inches) Depth: 56.40 mm (2.22 inches)
Environmental	
Storage temperature	–40 °C to 100 °C

Power	
Power dissipation	0.825 W

Operating Distances

OM1 62.5 µm (200–500 MHz*km)	Distance	Loss
2 Gbps Fibre Channel	0.5 to 150 m	2.10 dB
4 Gbps Fibre Channel	0.5 to 70 m	1.78 dB
8 Gbps Fibre Channel	0.5 to 21 m	1.58 dB

OM2 50 µm (500 MHz*km)	Distance	Loss
2 Gbps Fibre Channel	0.5 to 300 m	2.62 dB
4 Gbps Fibre Channel	0.5 to 150 m	2.06 dB
8 Gbps Fibre Channel	0.5 to 50 m	1.68 dB

OM3 50 µm (1500 MHz*km)	Distance	Loss
2 Gbps Fibre Channel	0.5 to 500 m	3.31 dB
4 Gbps Fibre Channel	0.5 to 380 m	2.88 dB
8 Gbps Fibre Channel	0.5 to 150 m	2.04 dB

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.

Regulatory and Standards Compliance

North America: UL/CSA 60950, CDRH Class 1
European Union: EN 60590, 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.

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