Cisco QSFP 40-Gbps Bidirectional Short-Reach Transceiver

Product Overview

The Cisco® Quad Small Form-Factor (QSFP) 40-Gbps Bidirectional (BiDi) Transceiver (Figure 1) is a short-reach pluggable optical transceiver with a duplex LC connector for 40 Gigabit Ethernet short-reach data communications and interconnect applications using multimode fiber (MMF). The Cisco QSFP 40-Gbps BiDi transceiver offers customers a solution that uses existing duplex MMF infrastructure for 40 Gigabit Ethernet connectivity. Unlike with other existing 40 Gigabit Ethernet solutions on the market, with the Cisco QSFP 40-Gbps BiDi transceiver customers can upgrade their network from 10 Gigabit Ethernet to 40 Gigabit Ethernet without incurring any fiber infrastructure upgrade cost. The Cisco QSFP 40-Gbps BiDi transceiver can enable 40 Gigabit Ethernet connectivity in a range of up to 100 meters over OM3 fiber, which meets most data center reach requirements. It complies with the Multiple Source Agreement (MSA) QSFP specification, enabling customers to use it on all Cisco QSFP 40-Gbps platforms and achieve high density in a 40 Gigabit Ethernet network. It can be used in data centers, high-performance computing (HPC) networks, enterprise and distribution layers, and service provider transport applications.

Figure 1. Cisco QSFP BiDi transceiver

Main Features and Benefits

Main features and benefits of the Cisco QSFP 40-Gbps BiDi transceiver include:

- Low infrastructure cost for 40 Gigabit Ethernet network
- Seamless upgrade from 10 Gigabit Ethernet to 40 Gigabit Ethernet
- 100m reach over OM3 fiber, which meets most data center reach requirements
- Duplex LC connector for use with duplex MMF
- QSFP MSA specification-compliant form factor
- Hot-swappable I/O device that plugs into a Cisco QSFP-based switch, router, or optical platform port
- Support for “pay-as-you-populate” model
- Easy-to-use pull-release handle that is color coded for reach identification

Technical Specifications

The Cisco QSFP 40-Gbps BiDi transceiver has two 20-Gbps channels, each transmitted and received simultaneously on two wavelengths when connected to a duplex MMF. The result is an aggregated 40-Gbps link over a duplex MMF (Figure 2).

Figure 2. Cisco QSFP BiDi Transceiver: Duplex MMF with LC Connectors at Both Ends

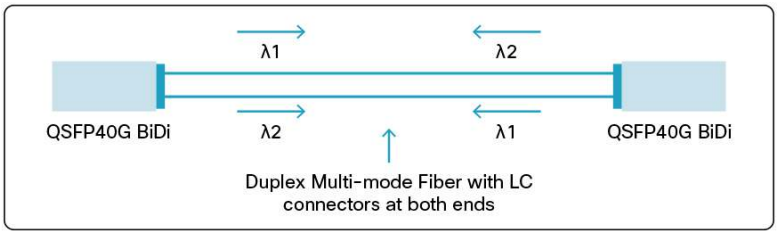


Table 1 presents the specifications for the transceiver, and Table 2 presents cabling specifications.

Table 1. Transceiver Specifications

	Parameter	Specification
Optical parameters	Maximum transmit power[*1] (per channel)	+5.0 dBm
	Minimum transmit power[*1] (per channel)	–4.0 dBm
	Maximum receive power[*1] (per channel)	+5.0 dBm
	Minimum receiver power[*1] (per channel)	–6.0 dBm
	Transmit and receive wavelength band 1	832 to 868 nm
	Transmit and receive wavelength band 2	882 to 918 nm
Physical specifications	Maximum outer dimensions (H x W x D)	13.5 x 18.4 x 72.4 mm
	Weight	< 100g typical
Temperature range	Operating temperature	+10 to +70°C
	Storage temperature	–40 to +85°C
Power consumption	Maximum power consumption	3.5W
Relative humidity	Relative humidity range	5 to 95%

[*1] Transmitter and receiver power is in average unless specified otherwise.

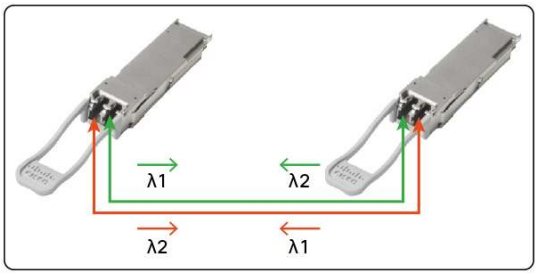
Table 2. Cabling Specifications

Wavelength	Cable Type	Core Size	Modal Bandwidth (MHz x km)	Cable Distance
850 to 900 nm	MMF	50.0 microns	• 500 (OM2) • 2000 (OM3) • 4700 (OM4) • OM4+	• 30m • 100m[*2] • 125m[*3] • 150m[*4]

[*2] Connector loss budget for OM3 Fiber is 1.5dB.
[*3] 125m over OM4 fiber is with an Engineered Link with 1dB budget for connector loss.
[*4] 150m over OM4+ Fiber is an Engineered Link with 1dB budget for connector loss. One of the recommended fibers for OM4+ is Panduit's Signature Core Fiber. Please refer to the below link for additional information
http://www.panduit.com/en/signature-core

The optical interconnection between two BiDi transceivers is shown in Figure 3.

Figure 3. Optical Connection Among Two Cisco QSFP BiDi Transceivers



Platform Support

The Cisco QSFP 40-Gbps BiDi transceiver is supported on Cisco switches and routers. For more details, refer to the document Cisco 40 Gigabit Ethernet Transceiver Modules Compatibility Matrix.

Warranty

- Standard warranty: The standard warranty is 90 days.
- Extended warranty (optional): Cisco QSFP BiDi Tranceiver can be covered in a Cisco SMARTnet® Service support contract for the Cisco platform chassis.

Regulatory and Standards Compliance

- Standards
  - GR-20-CORE: Generic Requirements for Optical Fiber and Optical Fiber Cable
  - QSFP+ MSA SFF-8436
  - Restriction of Hazardous Substances (RoHS) 6 compliant
- Safety
  - Laser Class 1 21CFR-1040 LN50 7/2001 and IEC60825-1
    (Note: Both channels transmit power as shown in Figure 2.)

Ordering Information

To place an order, visit the Cisco Ordering homepage at https://cisco-apps.cisco.com/cisco/psn/commerce and use the information in Table 3, which provides ordering Information for the Cisco QSFP 40-Gbps BiDi Short-Reach Transceiver and spares.

Table 3. Ordering Information

Part Number	Description
QSFP-40G-SR-BD	Cisco QSFP40G BiDi Short-reach Transceiver
QSFP-40G-SR-BD=	Cisco QSFP40G BiDi Short-reach Transceiver (spare)

For More Information

For more information about the Cisco QSFP 40-Gbps Bidir transceiver, contact your local sales representative or visit http://www.cisco.com/en/US/products/hw/modules/ps5455/prod_module_series_home.html.

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