

Cisco 200G QSFP56 Cables and Transceiver Modules

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The Cisco® family of QSFP modules provide solutions for AI/ML data center applications, Network Interface Cards (NICs) on servers, and for data center switches, while leveraging the breakout capabilities and backward compatibility to lower-speed QSFP pluggable modules and cables.

Product overview

The Cisco 200GBASE Quad Small Form-Factor Pluggable (QSFP) portfolio offers customers a wide variety of super high-density transceiver modules and the flexibility of 200 Gigabit Ethernet connectivity options for data center, AI/ML, high performance computing networks, enterprise core and distribution layers, and service provider applications. The QSFP56 modules and cables are part of Cisco Optics complete portfolio of QSFP-based pluggable solutions.

Table 1. Feature and Benefits of Cisco QSFP56 Modules

Feature	Benefit
Hot-swappable	Input/output device that plugs into QSFP ports
Interoperable	Interoperable with other IEEE-compliant 200GBASE interfaces where applicable
Certified on Cisco platform	Certified and tested on Cisco ports for superior performance, quality, and reliability
Compliant with IEEE 802.3	High-speed electrical and optical interfaces compliant to IEEE 802.3
Compliant with MSA	Compliant to SFF QSFP56 MSA CMIS Rev4.1, OIF 56G PAM4, IEEE 802.3 requirements
Port compatibility	The QSFP56 modules and cables can operate in higher speed QSFP112, and QSFP-DD ports
Breakout capability	Some modules have the capability to interface to multiple 100G and 50G modules when operated in breakout mode, providing higher port density for lower speed interfaces, and easing the migration to higher speed platforms

Table 2. Cisco 200G QSFP56 portfolio

Product ID	Description	Max power consumption (W)	Optical Connector
QSFP-200-CUxM	200G, QSFP56 to QSFP56, Passive Copper Cable, 1 meter, 2 meters, and 3 meters	1.5 per end	N/A
QDD-4ZQ100-CUxM	400G, QSFP-DD to 4x QSFP56 100GBASE-CR2, Passive Copper Cable, 1 meter, 2 meters, 2.5 meters, 3 meters	1.5 per end	N/A
QSFP-2Q200-CU3M	400G, QSFP-DD to 2x QSFP56 200GBASE-CR4, Passive Copper Cable, 3 meters	1.5 per end	N/A

Product ID	Description	Max power consumption (W)	Optical Connector
QSFP-4S50-CUxM	200G, QSFP56 to 4x SFP56 50GBASE-CR, Passive Copper Cable, 1 meter, 2 meters, 2.5 meters, 3 meters	1.5 per end	N/A
QSFP-200G-SR4-S	200G QSFP56 Transceiver, MPO-12, 100m OM4 MMF, 200GBASE-SR4 compliant. Can be used for 4X breakout to SFP-50G-SR and can be used for 2x 100GBASE-SR2 interfaces	4.5	MPO-12 MMF UPC
QSFP-200G-SL4	200G QSFP56 Transceiver, MPO-12, 30m (OM4 MMF). Can used for 4X breakout to SFP-50G-SL and can be used for 2x 100GBASE-SR2 interfaces up to 30m (OM4)	4.5	MPO-12 MMF UPC
QSFP-200G-FR4-S	200G QSFP56 Transceiver, 200G-FR4, 2km Duplex SMF	5	Duplex LC SMF PC/UPC

Note: Only connections with patch cords with PC or Ultra-Physical Contact (UPC) connectors are supported.

All cables and cable assemblies used must be compliant with the standards specified in the standards section of this datasheet. For more information and references on QSFP cable guides, please click on the following link: [Cisco Transceiver Modules – Brochures – Cisco](#).

Cisco 200G QSFP56 transceiver prominent features and differentiators

Cisco QSFP-200-CuxM



Figure 1.
QSFP-200-CuxM

The Cisco 200G QSFP-200-CuxM module (Figure 1) primarily enables high-bandwidth 200G links and supports 200G & 100G Ethernet rates. It provides a port-to-port passive copper direct-attach solution. QSFP-200-CuxM cables are suitable for very short links and offer a cost-effective way to establish a 200-Gigabit link between ports of switches/routers within racks and across adjacent racks. Cisco currently offers 200G QSFP-200-CuxM passive copper cables in lengths of 1, 2, and 3 meters. Forward Error Correction (FEC) is performed on the host platform.

Cisco QSFP-4S50-CUxM



Figure 2.
QSFP-4S50-CUxM

The Cisco 200G QSFP-4S50-CUxM passive copper cable (Figure 2) enables high-bandwidth breakout from a 200G port to four SFP56 50GE links. It provides a QSFP56 to 4x SFP56 50GBASE-CR copper direct-attach solution. QSFP-4S50-CuxM cables are suitable for very short links and offer a cost-effective way to establish a 4x 50-Gigabit link between a QSFP 200G port and four SFP56 50GE ports on switches or servers within or between adjacent racks. Cisco currently offers 200G QSFP-4S50-CUxM passive copper cables in lengths of 1, 2, and 3 meters. FEC is performed on the host platform.

Cisco QDD-4ZQ100-CUxM



Figure 3.
QDD-4ZQ100-CUxM

The Cisco 400G QDD-4ZQ100-CUxM passive copper cable (Figure 3) enables high-bandwidth breakout from a 400G port to four QSFP56 100GE links. It provides a QSFP-DD-to-4x QSFP56 100GBASE-CR2 copper direct-attach solution. QDD-4ZQ100-CuxM cables are suitable for very short links and offer a cost-effective way to establish a 4x 100-Gigabit link between a QSFP-DD 400G port and four 100GE ports on switch or servers within or between adjacent racks. Cisco currently offers 400G QDD-4ZQ100-CUxM passive copper cables in lengths of 1, 2, 2.5, and 3 meters. FEC is performed on the host platform.

Cisco QDD-2Q200-CU3M



Figure 4.
QDD-2Q200-CU3M

The Cisco QDD-2Q200-CU3M passive copper cable (Figure 4) provides high-bandwidth breakout from a 400G port to two 200GE links. It provides a QSFP-DD-to-2x QSFP56 200GBASE-CR4 copper direct-attach solution. QDD-2Q200-Cu3M cables are suitable for very short links and offer a cost-effective way to establish a 2x 200-Gigabit link between a QSFP-DD 400G port and two 200GE ports on switches or servers within or between adjacent racks. Cisco currently offers QDD-2Q200-CU3M passive copper cables in 3 meters lengths. FEC is performed on the host platform.

Cisco QSFP-200G-SR4-S



Figure 5.
QSFP-200G-SR4-S

The Cisco QSFP-200G-SR4-S Module (Figure 5) supports 200GE links and up to two 100GBASE-SR2 breakout links or four 50GBASE-SR lengths of up to 100m over OM4 MMF. The module has four pairs of Multi-Mode Fiber (MMF) with an MPO-12 UPC connector. It is compliant to the IEEE 802.3bm protocol and 200GAUI-4/CEI-56G-VSR-PAM4 standards. The 200 Gigabit Ethernet signal is carried over four parallel pairs of fibers at a nominal wavelength of 850nm at 50Gbps per fiber. It can also be used as 2x100GE breakout to 100GBASE-SR2 modules. FEC is performed on the host platform.

Cisco QSFP-200G-SL4



Figure 6.
QSFP-200G-SL4

The Cisco QSFP-200G-SR4 Short Link QSFP Module (Figure 6) supports 200GE links and up to two 100GBASE-SR2 breakout links or four 50GBASE-SR lengths of up to 30m over OM4 MMF. The module has four pairs of MMF with an MPO-12 UPC connector. It is compliant to the 200GAUI-4/CEI-56G-VSR-PAM4 standards. The 200 Gigabit Ethernet signal is carried over four parallel pairs of fibers by two 50Gbps at a nominal wavelength of 850nm. FEC is performed on the host platform.

QDD-200G-FR4-S



Figure 7.
QSFP-200G-FR4-S

The Cisco QSFP-200G-FR4-S Module (Figure 7) supports link lengths of up to 2km SMF with a duplex LC connector. It is compliant to IEEE 802.3 for 200GBASE-FR4 requirements, and 200GAUI-4/CEI-56G-VSR-PAM4 standards. The 200 Gigabit Ethernet signal is carried over four CWDM grid optical wavelengths. Multiplexing and demultiplexing of the four wavelengths are managed within the device. FEC is performed on the host platform.

Table 3. QSFP port and cabling specifications

Cisco 200G QSFP56	Nominal wavelength (nm)	Cable type	Core size (microns)	Modal bandwidth	Cable distance	Pull tab color
QDD-200-CU1M		Passive copper cable assembly			1 m	Tan
QSFP-200-CU2M			2 m	Brown		
QSFP-200-CU3M			3 m	Orange		
QSFP-4S50-CU1M			1m	Tan		
QSFP-4S50-CU2M			2m	Brown		
QSFP-4S50-CU3M			3m	Orange		
QDD-2Q200-CU3M			3m	Orange		
QDD-4ZQ100-CU1M			1m	Tan		
QDD-4ZQ100-CU2M			2m	Brown		
QDD-4ZQ100-CU2.5M			2.5m	Yellow		
QDD-4ZQ100-CU3M			3m	Orange		
QSFP-200G-SR4-S	850		MMF	50	2000 (OM3) 4700 (OM4) 4700 (OM5)	70m (OM3) 100m (OM4) 100m (OM5)

Cisco 200G QSFP56	Nominal wavelength (nm)	Cable type	Core size (microns)	Modal bandwidth	Cable distance	Pull tab color
QSFP-200G-SL4	850	MMF	50	2000 (OM3) 4700 (OM4) 4700 (OM5)	20m (OM3) 30m (OM4) 30m (OM5)	Purple
QSFP-200G-FR4-S	1270, 1290, 1310, 1330	SMF	G.652		2 km	Green

Platform support

Cisco QSFP modules are supported on Cisco switches, routers and NICs as well as third-party host platforms and NICs. For more details, refer to the [Cisco Transceiver Modules Compatibility Matrix](#).

Specifications

Table 4. Electrical specifications

Product	Description	Nominal Datarate	High-speed electrical	Link meter
QSFP-200-CUxM	200G QSFP56, Passive Copper Cable	200GE	200GAUI-4 C2M, OIF CEI-56G-VSR-PAM4	1,2,3
QSFP-4S50-CUxM	200GE QSFP56 to 4x 50GE SFP56 Passive Copper Cable	4x 50GE	4x 50GAUI C2M, OIF CEI-56G-VSR-PAM4	1,2,3
QDD-4ZQ100-CUxM	400G QSFP-DD to 4x QSFP56 100GBASE-CR2, Passive Copper Cable	4x 100GE	4x 100GBASE-CR2, OIF CEI-56G-VSR-PAM4	1,2,2.5,3
QDD-2Q200-CU3M	400G QSFP-DD to 2x QSFP56 200GBASE-CR4, Passive Copper Cable	2x 200GE	200GAUI-4 C2M, OIF CEI-56G-VSR-PAM4	3
QSFP-200G-SR4-S	200G QSFP56 Transceiver, MPO-12 UPC, 100m OM4 MMF, 200GBASE-SR4, Can be used for 2X breakout to 100GBASE-SR2 and 4x 50GBASE-SR	200GE	200GAUI-4/CEI-56G-VSR- PAM4	70m (OM3) 100m (OM4) 100m (OM5)
QSFP-200G-SL4	200G QSFP56 Transceiver, MPO-12 UPC, 30m OM4 MMF, 200GBASE-SR4, Can be used for 2X breakout to 100GBASE-SL2 and 4x 50GBASE-SL	200GE	200GAUI-4/CEI-56G-VSR- PAM4	20m (OM3) 30m (OM4) 30m (OM5)
QSFP-200G-FR4-S	200G QSFP56 Transceiver, 200GBASE-FR4, Duplex LC, 2km Duplex SMF	200GE	200GAUI-4/CEI-56G-VSR- PAM4	2 km

Table 5. Optical specifications

Product	Description	Average Transmit Power per lane (dBm) min	Average Transmit Power per lane (dBm) max	Average Receive Power per lane (dBm) min ¹	Average Receive Power per lane (dBm) max	Maximum Supported Insertion Loss (IL) (dB)	Wavelength (nm)	Pre-FEC
QSFP-400G-SR4-S	200G QSFP56 Transceiver, MPO-12 UPC, 100m OM4 MMF, 200GBASE-SR4. Can be used for 2X breakout to 100GBASE-SR2 and 4x 50GBASE-SR	-6.5	4	-8.4	4	1.9	850	2.4x10 ⁻⁴
QSFP-400G-SL4	200G QSFP56 Transceiver, MPO-12 UPC, 30m OM4 MMF, 200GBASE-SR4, Can be used for 2X breakout to 100GBASE-SL2 and 4x 50GBASE-SL	-6.5	4	-8.4	4	1.6	850	2.4x10 ⁻⁴
QSFP-200G-FR4-S	200G QSFP56 Transceiver, 200GBASE-FR4, Duplex LC, 2km Duplex SMF	-4.2	4.7	-8.2	4.7	4	1270, 1290, 1310, 1330	2.4x10 ⁻⁴

¹ Average receive power per lane (min) is informative and not the principal indicator of signal strength. A received power below this value cannot be compliant; however, a value above this does not ensure compliance.

Table 6. Mechanical specifications

Module	Specification
Module dimension with pull tab	(H x W x D) 8.5 x 18.4 x 78.3/93.3 mm
Module weight (Max)	Optical modules
	QSFP-200-CU1M
	QSFP-200-CU2M
	QSFP-200-CU3M
	QSFP-4S50-CU1M
	QSFP-4S50-CU2M
	QSFP-4S50-CU3M

Module		Specification
	QDD-2Q200-CU3M	600 g
	QDD-4ZQ100CU1M	400 g
	QDD-4ZQ100-CU2M	600 g
	QDD-4ZQ100-CU2.5M	700 g
	QDD-4ZQ100-CU3M	800 g
QSFP-200G Module operation temperature		0 to 70° C
Copper cable operation temperature		0 to 70° C
Storage temperature		-40 to 85° C

QSFP Breakout Capability and Module Interoperation

Some of Cisco's QSFP modules have the capability to be operated in breakout mode on specific platforms. This allows the QSFP port to be configured as if it were two 100G or four 50GE ports. This function provides users the ability to use the latest 200G or 400G ports platforms with the latest features while still providing connectivity to existing 50GE or 100GE platforms that are already in the network. This eases the migration to higher speeds on a port-by-port basis while providing very-high density Ethernet interfaces. These modules will interoperate with Cisco as well as 3rd party modules that comply with the same standards. Tables 7-10 provides brief overview of the various optical breakout options, compatibility and reach to 100GE modules. Module optical interoperability can also be verified with the [Cisco Module Interoperability Matrix](#).

Table 7. QSFP56 MMF PAM4 Breakout Interoperation and Link Reach

Standard (PAM4)	100GBASE-SR2	50GBASE-SR
Product ID	½ QSFP- 200G-SR4- S	SFP-50G-SR
QSFP-200G-SR4-S (2x 100G Breakout) (4x 50G Breakout)	100m/OM4 (1.9 dB)	100m/OM4 (1.9 dB)
QSFP-200G-SL4 (2x 100G Breakout) (4x 50G Breakout)	30m/OM4 (1.6 dB)	30m/OM4 (1.6 dB)

Table 8. Ordering information

Part ID	Product description
QSFP-200-CU1M	200G QSFP56 Passive Copper Cable, 1 meter
QSFP-200-CU2M	200G QSFP56 Passive Copper Cable, 2 meters
QSFP-200-CU3M	200G QSFP56 Passive Copper Cable, 3 meters
QSFP-4S50-CU1M	QSFP56 to 4x SFP56 Passive Copper Cable, 1 meter
QSFP-4S50-CU2M	QSFP56 to 4x SFP56 Passive Copper Cable, 2 meters
QSFP-4S50-CU3M	QSFP56 to 4x SFP56 Passive Copper Cable, 3 meters
QDD-4ZQ100-CU1M	QSFP-DD 4x QSFP56 100GBASE-CR2 Passive Breakout Copper Cable, 1 meter
QDD-4ZQ100-CU2M	QSFP-DD 4x QSFP56 100GBASE-CR2 Passive Breakout Copper Cable, 2 meters
QDD-4ZQ100-CU2.5M	QSFP-DD 4x QSFP56 100GBASE-CR2 Passive Breakout Copper Cable, 2.5 meters
QDD-4ZQ100-CU3M	QSFP-DD 4x QSFP56 100GBASE-CR2 Passive Breakout Copper Cable, 3 meters
QDD-2Q200-CU3M	QSFP-DD 2x QSFP56 200GBASE-CR4 Passive Breakout Copper Cable, 3 meters
QSFP-200G-SR4-S	200G QSFP56 Transceiver, 200GBASE-SR4, MPO-12 MMF, 100m
QSFP-200G-SL4	200G QSFP56 Transceiver, 200GBASE-SL4, MPO-12 MMF, 30m
QSFP-200G-FR4-S	200G QSFP56 Transceiver, 200G-FR4, Duplex LC, 2km Duplex SMF

Regulatory and standards compliance

Standards

- OIF CEI-56G-VSR-PAM4
- QSFP56 MSA
- QSFP-DD MSA hardware Rev 4.1, QSFP-DD hardware specification for QSFP double-density 8X pluggable transceiver
- GR-20-CORE: Generic Requirements for Optical Fiber and Optical Fiber Cable
- GR-326-CORE: Generic Requirements for Single-Mode Optical Connectors and Jumper Assemblies
- GR-468-CORE: Generic Requirements for Optoelectronic Devices Used in Telecommunications Equipment
- GR-1435-CORE: Generic Requirements for Multifiber Optical Connectors
- Common Management Specification (CMIS) Rev 4.0
- IEEE Std 802.3™-2022 IEEE Standard for Ethernet

Safety

- Laser Class 1 21CFR-1040 LN#50
- Laser Class 1 IEC60825-1
- Cable jacket can be certified to UL or CSA jacketed appliance wiring material, rated VW-1 or FT-1
- All cables must be type CM, CMG, CMP, or CMR. If cable is type CL2 (USA type of cable), it must also be type LVT or ELC (Canadian type of cable)
- Compliance with North American (FCC/ICES), European (CENELEC), Japanese (VCCI), and Telcordia NEBS standards
- GR-1089 EMC and Electrical Safety - Generic Criteria for Network Telecommunications Equipment
- EMI compliance on FCC Part 15 (30 MHz - 40 GHz) and CISPR32/CISPR22 (30-6000 MHz)
- RFI compliance on EN/IEC 61000-4-3 and GR-1089-CORE (10k to 10 GHz)
- ESD compliance on EN/IEC 61000-4-2 and GR-1089
- Certification to IEC/EN 60825-1 +A2
- RoHS 6 compliance

Table 9. Laser class for QSFP modules

Part ID	Laser Class
QSFP-200G-SR4-S	1
QSFP-200G-SL4	1
QSFP-200G-FR4-S	1

Product sustainability

Information about Cisco's Environmental, Social and Governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability [reporting](#).

Table 10. Cisco environmental sustainability information

Sustainability Topic	Reference	
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries and packaging	WEEE Compliance
	Information on product takeback and reuse program	Cisco Takeback and Reuse Program
	Sustainability Inquiries	Contact: csr_inquiries@cisco.com
Power	QSFP Port cabling specifications	Table 3
Material	Product packaging weight and materials	Contact: environment@cisco.com

Warranty

Standard warranty: 5 years

Expedited replacement available via a Cisco SMARTnet® Service support contract.

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Additional information

For more information about Cisco 200G QSFP copper cables and modules, contact your sales representative or visit [Cisco Optics](#).

Document history

New or Revised Topic	Described In	Date
Initial Release		January 4, 2024
Updated cable distance for QSFP-200G-SR4-S	Table 3. QSFP port and cabling specifications	September 19, 2024

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