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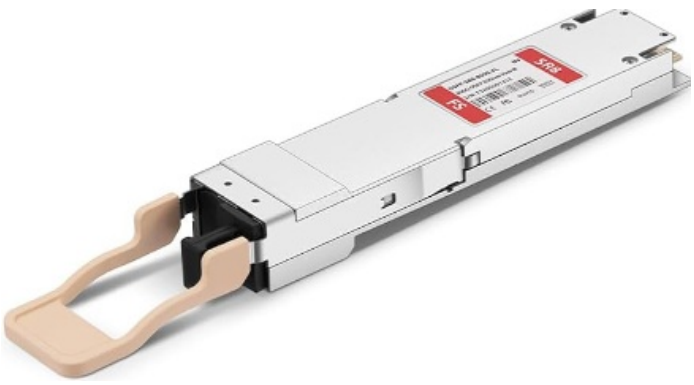
FS OSFP-SR8-800G Transceiver Module



Specifications

- Product Name: OSFP-SR8-800G Transceiver Module
- Version: V1.0.253A

Overview

- The FS OSFP-SR8-800G is an 800Gb/s 2x400Gb/s Twin-port OSFP transceiver that supports InfiniBand or Ethernet protocols.
- This SR8 multimode, parallel, 8-channel transceiver uses two 4-channel MPO-12/APC optical connectors at 400Gb/s each.
- The parallel multimode, short reach 8-channel (2xSR4) uses 100G-PAM4 modulation and has a maximum fiber reach of 50 meters using 8 multimode fibers.
- The 50-meter length assumes two optical patch panels in the link.
- The OSFP-SR8-800G transceiver features a finned heatsink design and is usually used in Quantum-2 InfiniBand or Ethernet air-cooled switches.
- The transceiver combinations guarantee optimal operation in InfiniBand or Ethernet end-to-end systems and customer networking solutions.
- Rigorous production testing ensures the best out-of-the-box installation experience, performance, and durability.

Note: Images are for reference only. Product labels, colors, and sizes may vary.

Key Features

- InfiniBand or Ethernet
- 800G 2xSR4/SR8 multimode transceiver
- 8x 100G-PAM4 Electrical to Dual 4x 100G-PAM4 optical Parallel
- Support 800G-to-two 400G ConnectX-7 links or 800G-to-four 200G ConnectX-7 links
- Finned-Top OSFP used in Quantum-2 or Ethernet air-cooled switches
- Maximum reach: 30m using OM3 fiber, 50m using OM4 fiber

- Dual MPO-12/APC optical connector
- 850nm VCSEL
- 16 W max power
- Single 3.3V power supply
- Class 1 laser safety
- CMIS 5.1 compliant
- Hot pluggable, OSFP MSA, and RoHS compliant
- Commercial temperature range 0 to +70°C (32 to 158°F)

Applications

- FS OSFP-SR8-800G is designed to maximize the performance of HPC networks, requiring high-bandwidth, low-latency, highly reliable connections between InfiniBand or Ethernet elements.
- It can link upward in NVIDIA Quantum or Ethernet architectures for switch-to-switch applications, downward for top-of-rack switch links to ConnectX® smart network adapters, and to BlueField® DPUs in compute servers and storage subsystems.

Connectivity Scenarios

- The twin-ports enable several unique configurations to connect switches to switches, ConnectX-7 adapters, and BlueField-3 DPUs.
- The twin-port OSFP uses two 4-channel MPO-12/APC optical connectors with two 4-channel fiber cables.
- These can link to a single port 400G OSFP or QSFP112 transceivers used in ConnectX-7 adapters and/or BlueField-3 DPUs.
- The electronics, optics, and optical connectors are the same for both single-port OSFP and QSFP112.
- Both ConnectX-7 and BlueField-3 devices can be used with twin-port OSFP transceivers at the same time, with their respective form-factor type.
- Twin-port multimode OSFP transceivers remain at 16 W for all configurations linking OSFP switches, OSFP and QSFP112 adapters, and DPUs simultaneously.
- Linking twin-port transceivers with 1:2 fiber splitter cables to 400G transceivers automatically creates 200Gb/s transceivers by activating only 2 channels, and automatically reduces power consumption in the 400G OSFP transceiver from 8.5 to

5.5 W, and automatically reduces power consumption in the 400G QSFP112 transceiver from 9 to 6 W.

Use cases

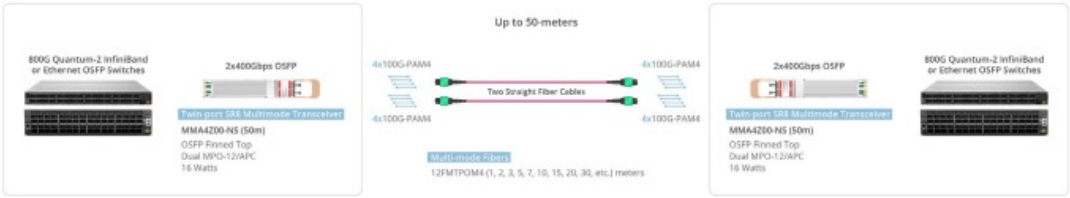
All combinations of twin-port 2x400G OSFP, 400G single-port OSFP/QSFP112 transceivers support either InfiniBand or Ethernet protocols. The ConnectX-7 and BlueField-3 contain both InfiniBand and Ethernet protocols. InfiniBand environments require InfiniBand-compliant transceivers and switches, while Ethernet environments necessitate Ethernet-specific transceivers and switches.

The use cases include:

- Switch-to-switch at 800Gb/s
- Switch-to-two combinations of 400G ConnectX-7 and/or BlueField-3
- Switch-to-four combinations of 200G ConnectX-7 and/or BlueField-3
- Switch-to-DGX H100 GPU Systems

Switch-to-switch at 800Gb/s

Two OSFP-based switches can be linked together at 800G (2x400GG) using two twin-port OSFP transceivers and two straight, multimode fiber cables (12FMTPOM44) up to 50 meters.

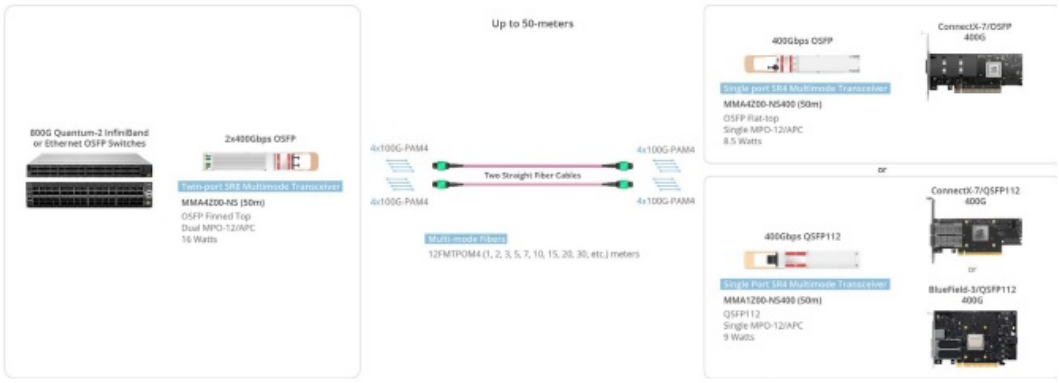


Switch-to-two combinations of 400G ConnectX-7 and/or BlueField-3

A twin-port OSFP transceiver using two, straight fiber cables can support up to two adapters and/or DPU combinations. Each of the two, 4-channel fiber cables (12FMTPOM4) can link to a 400G transceiver up to 50 meters in either OSFP (OSFP-SR4-400G-FL) or QSFP112 (QSFP112-SR4-400G-FL) form-factor. The electronics, optics, and optical connectors are the same for both single port OSFP and QSFP112 form factors, and OSFP power consumption is 8.5 W, QSFP112 power consumption is 9 W.

- Only ConnectX-7/OSFPs support single-port OSFP.The
- QSFP112 form-factor is used in ConnectX-7/QSFP112s and/or BlueField-3/3/QSFP112 DPUs.

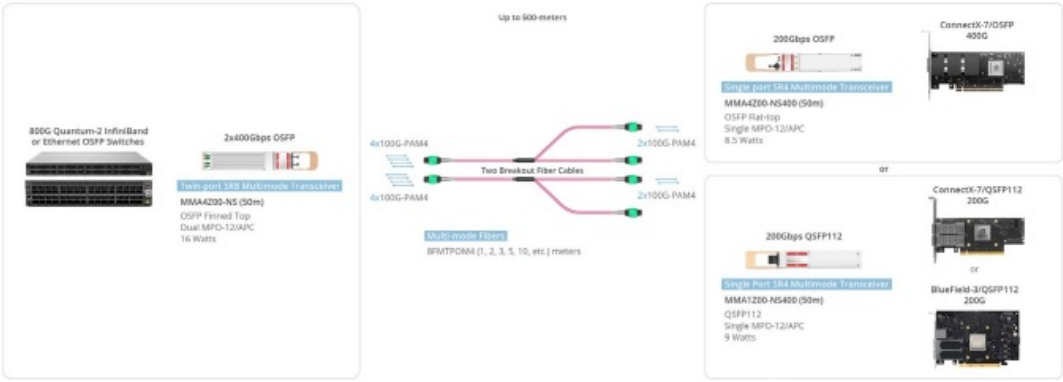
Any combination of ConnectX-7 and BlueField-3 using OSFP or QSFP112 can be used at the same time on twin port OSFP transceivers.



Switch-to-four combinations of 200G ConnectX-7 and/or BlueField-3

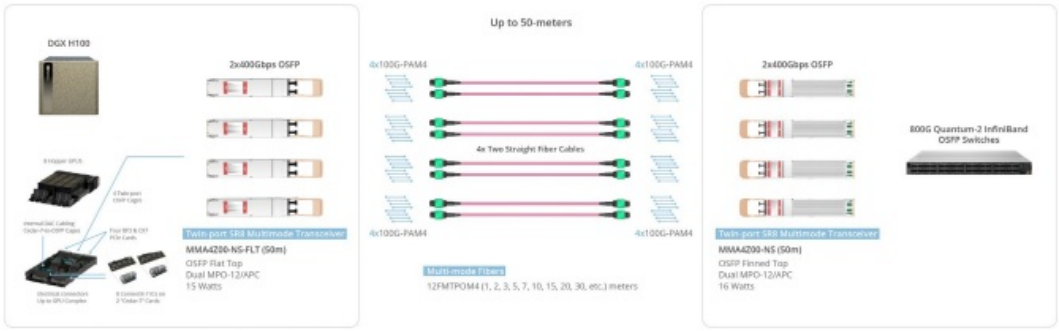
A twin-port OSFP transceiver using two, 1:2 fiber splitter cables can support up to four adapters and/or DPU combinations. Each of the two, 4-channel 1:2 fiber splitter cables (12FMTPOM4) can link to a 400G transceiver up to 50-meters in either OSFP (OSFP-SR4-400G-FL) or QSFP112 (QSFP112-SR4-400G-FL) form-factor. The electronics, optics and optical connectors are the same for both single port OSFP and QSFP112 form factors. The two-fiber channel ends only activate two of the lanes in the 400G transceiver creating a 200G device and automatically reduces the power consumption of only the 400G OSFP transceivers from 8.5 W to 5.5 W, automatically reduces the power consumption of only the 400G QSFP112 transceivers from 9 W to 6 W. Twin port OSFP power consumption remains at 16 W.

- Only ConnectX-7/OSFPs can accept single-port OSFPs.The
- QSFP112 form-factor is used in ConnectX-7/QSFP112s and/or BluieField-3-3/3/QSFP112 DPUs.
- Any combination of ConnectX-7 types and BlueField-3 can be used at the same time on twin port OSFP transceivers.



Switch-to-DGX H100 GPU Systems

The DGX-H100 contains eight “Hopper” H100 GPUs in the top chassis section, two CPUs, storage, and InfiniBand and/or Ethernet networking in the bottom server section. This contains eight 400Gb/s ConnectX-7 NICs mounted on two mezzanine boards called “Cedar-7” cards for GPU-to-GPU InfiniBand or Ethernet networking.The OSFP-SR8-800 G-FL without heat dissipation fins is deployable in DGX H100 systems, interoperating with heatsink-equipped OSFP-SR8-800G counterparts.



Ordering information

Table 1: Ordering Information for FS InfiniBand OSFP-SR8-800G Transceivers and Related Products.

Part number	Description
Transceivers	
OSFP-SR8-800G	800GBASE OSFP Finned Top 2x SR4/SR8 850nm 50m Dual MP O-12/APC MMF

OSFP-SR8-800G-FL	800GBASE OSFP Flat Top 2x SR4/SR8 850nm 50m Dual MPO-12/APC MMF
OSFP-SR4-400G-FL	400GBASE OSFP Flat Top SR4 850nm 50m MPO-12/APC MMF
QSFP112-SR4-400G	400GBASE QSFP112 SR4 850nm 50m MPO-12/APC MMF
Switches	
MQM9790-NS2F	NVIDIA® 64-Port NDR 400G InfiniBand Data Center Switch
MQM9700-NS2F	NVIDIA® 64-Port NDR 400G InfiniBand Data Center Switch
NICs	
MCX75510AAS-NEAT	ConnectX®-7 InfiniBand Adapter Card 400GbE/NDR, Single-Port OSFP
MCX75310AAC-NEAT	ConnectX®-7 InfiniBand & Ethernet Adapter Card 400GbE/NDR, Single-Port OSFP
MCX755106AS-HEAT	ConnectX®-7 InfiniBand & Ethernet Adapter Card 200GbE/NDR200, Dual-Port QSFP112
Cables	
12FMTPOM4	MPO-12 APC (Female) to MPO-12 APC (Female), MMF, Type B
8FMTPOM4	MPO-12 APC (Female) to 2 x MPO-4 APC (Female), MMF, Type B

FAQ

- **Q**: Can the OSFP-SR8-800G module be used with other transceiver types?
- **A:** The OSFP-SR8-800G module is specifically designed for use with compatible transceivers mentioned in the ordering information tables. It is recommended to refer to the product documentation for compatibility details.

Documents / Resources

	FS OSFP-SR8-800G Transceiver Module [pdf] User Guide OSFP-SR8-800G, OSFP-SR8-800G Transceiver Module, Transceiver Module, Module

References

- User Manual

FS, Module, OSFP-SR8-800G, OSFP-SR8-800G Transceiver Module, Transceiver

FS Module

—Previous Post
FS 800G OSFP Transceiver Module Instruction Manual

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