Cisco OSFP 800G Transceiver Modules

Contents

Product overview

The Cisco® OSFP 800G transceiver modules provide 800 Gigabit Ethernet (GE), 2x 400GE, 4x 200GE, and 8x 100GE connectivity options, complying with the Octal Small Form Factor Pluggable (OSFP) MSA for pluggable transceivers. The modules comply with the OSFP MSA configuration with integrated closed top heat sink. These transceivers are used in AI applications for both front-end and back-end networks as well as other data center applications. They meet the IEEE 800GE requirements along with the flexibility of 400GE, 200GE, and 100GE connectivity options for data centers, high-performance computing networks, enterprise core and distribution layers, and service provider applications. The OSFP 800G modules are Cisco's new generation of pluggable transceiver modules based on the OSFP form factor specification.

Table 1. Feature and benefits

Feature	Benefit
Hot-swappable	I/O device that plugs into an 800GE Cisco OSFP port.
Interoperable	Interoperable with other IEEE-compliant 800GE, 400GE, 200GE, and 100GE interfaces where applicable.
Certified on Cisco platform	Certified and tested on Cisco OSFP 800G ports for superior performance, quality, and reliability.
Compatible with IEEE 802.3	High-speed electrical and optical compliance with IEEE 802.3.
Compatible with MSA	Compliance with OSFP MSA, OIF CMIS Rev 5.3,
Breakout capability	Modules have the capability to interface to multiple 100GE, 200GE, and 400GE modules, providing higher port density for 100GE, 200GE, and 400GE interfaces.
OIF CMIS Compliant	Modules are compliant to CMIS 5.3.
Versatile Diagnostic Monitoring (VDM)	Modules firmware can be updated for Versatile Diagnostic Monitoring (VDM) observable.

Table 2. Cisco OSFP 800G portfolio

Product ID	Description	Max power consumption (W)	Optical connector
OSFP-800G-VR8	OSFP (Integrated Heat Sink) Transceiver, 800GBASE-VR8, Dual MPO-12 APC, 30/50m (OM3/OM4) parallel MMF	16	Dual MMF MPO-12 APC
OSFP-800G-DR8	OSFP (Integrated Heat Sink) Transceiver, 800GBASE-DR8, Dual MPO-12, 500m parallel SMF	16	Dual SMF MPO-12 APC
OSFP-800G-DR8P	OSFP (Integrated Heat Sink) Transceiver, 800GBASE-DR8, MPO-16 APC, 500m parallel SMF	16	SMF MPO-16 APC

Note: The OSFP-800G-VR8, OSFP-800G-DR8 and OSFP-800G-DR8P require patch cords with angled physical contact (APC) MPO connectors. All cables and cable assemblies used must comply with the standards specified in the standards section of this data sheet.

Prominent features and differentiators

OSFP-800G-DR8

Figure 1.
OSFP-800G-VR8

The Cisco OSFP-800G-VR8 module (Figure 1) supports 800GE as well as 2x 400GE, 4x 200GE, and 8x 100GE breakouts for links up to 50m(OM4/5) in reach. The module has eight pairs of multi-mode fiber with dual MPO-12 APC connectors. It is compliant with IEEE 802.3 800GBASE-VR8 and OSFP MSA requirements. Optical signals are carried over eight pairs of parallel lanes, with one wavelength per lane. The optical interface can interoperate with any IEEE-compliant module regardless of the form factor. Forward Error Correction (FEC) is performed on the host platform. The OSFP-800G-VR8 module is field firmware upgradeable, complying with CMIS 5.3 firmware upgradability process. Module firmware is available to support VDM.

OSFP-800G-DR8

Figure 2.
OSFP-800G-DR8

The Cisco OSFP-800G-DR8 module (Figure 2) supports 800GE as well as 2x 400GE, 4x 200GE, and 8x 100GE breakouts for links up to 500m in reach. The module has eight pairs of single-mode fiber with dual MPO-12 APC connectors. It is compliant with IEEE 802.3 800GBASE-DR8 and OSFP MSA requirements. Optical signals are carried over eight pairs of parallel lanes, with one wavelength per lane. The optical interface can interoperate with any IEEE-compliant module regardless of the form factor. Forward Error Correction (FEC) is performed on the host platform. The OSFP-800G-DR8 module is field firmware upgradeable, complying with CMIS 5.3 firmware upgradability process. Module firmware is available to support VDM.

OSFP-800G-DR8P

Figure 3.
OSFP-800G-DR8P

The Cisco OSFP-800G-DR8P module (Figure 3) supports 800GE as well as 2x 400GE, 4x 200GE, and 8x 100GE breakouts for links up to 500m in reach. The module has eight pairs of single-mode fiber with an MPO-16 APC connector. It is compliant with IEEE 802.3 800GBASE-DR8 and OSFP MSA requirements. Optical signals are carried over eight pairs of parallel lanes, with one wavelength per lane. The optical interface can interoperate with any IEEE-compliant module regardless of the form factor. Forward Error Correction (FEC) is performed on the host platform. The OSFP-800G-DR8P module is field firmware upgradeable, complying with CMIS 5.3 firmware upgradability process. Module firmware is available to support VDM.

Table 3. OSFP port and cabling specifications

Cisco 800G OSFP	Nominal wavelength (nm)	Cable type	Core size (microns)	Modal bandwidth	Cable distance	Pull tab color
OSFP-800G-VR8	850	MMF	50	2000 (OM3) 4700 (OM4) 4700 (OM5)	30m (OM3) 50m (OM4/5)	Purple
OSFP-800G-DR8	1310	SMF	G.652		500m	Orange
OSFP-800G-DR8P	1310	SMF	G.652		500m	Orange

Platform support

Cisco OSFP 800G modules are supported on Cisco switches and routers. For more details, refer to the Cisco Transceiver Modules Compatibility Matrix.

Specifications

Table 4. Electrical specifications

Product	Description	Nominal data rate	High-speed electrical	Link meter
OSFP-800G-VR8	OSFP Transceiver, 800GBASE-VR8, Dual MPO-12, 30/50m (OM3/OM4) parallel MMF	800GE	800GAUI-8	30m (OM3) 50m(OM4/5)
OSFP-800G-DR8	OSFP Transceiver, 800GBASE-DR8, Dual MPO-12, 500m parallel SMF	800GE	800GAUI-8	500m

Product	Description	Nominal data rate	High-speed electrical	Link meter
OSFP-800G-DR8P	OSFP Transceiver, 800GBASE-DR8, MPO-16, 500m parallel SMF	800GE	800GAUI-8	500m

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
OSFP-800G-VR8	OSFP Transceiver, 800GBASE-DR8, MPO-12, 500m parallel MMF	-4.6	4	-6.3	4	1.6 (OM3) 1.7(OM4/5)	842-948	$2.4x10^{-4}$
OSFP-800G-DR8	OSFP Transceiver, 800GBASE-DR8, MPO-12, 500m parallel SMF	-2.9	4	-5.9	4	3	1310	$2.4x10^{-4}$
OSFP-800G-DR8P	OSFP Transceiver, 800GBASE-DR8, MPO-12, 500m parallel SMF	-2.9	4	-5.9	4	3	1310	$2.4x10^{-4}$

[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

Specification	Value
Module dimension with pull tab	(H x W x D) 13 x 22.58 x 116 mm (0.51 x 0.89 x 4.57 in.) max
Module weight (max)	100 g (3.5 oz)
Module operation temperature	0° to 70°C (32° to 158°F)
Storage temperature	-40 to 85°C (-40° to 185°F)

Table 7. Ordering information

Part ID	Product description
OSFP-800G-VR8	OSFP Transceiver, 800GBASE-DR8,2x MPO-12, 30m (OM3)/50m (OM4/5) parallel MMF
OSFP-800G-DR8	OSFP Transceiver, 800GBASE-DR8,2x MPO-12, 500m parallel SMF
OSFP-800G-DR8P	OSFP Transceiver, 800GBASE-DR8, MPO-16, 500m parallel SMF

Regulatory and standards compliance

Standards

- OSFP MSA OSFP Octal Small Form Factor Pluggable Module, Rev 5.1, specification
- 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 5.3
- IEEE Std 802.3-2018 IEEE Standard for Ethernet
- IEEE 802.3ba CL88
- IEEE 802.3df 800GAUI-8
- IEEE 802.3ck
- IEEE 802.3df

Safety

- Laser Class 1 21CFR-1040 LN#50
- Laser Class 1 IEC60825-1
- 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 with FCC Part 15 (30 MHz to 40 GHz) and CISPR32/CISPR22 (30 to 6000 MHz)
- RFI compliance with EN/IEC 61000-4-3 and GR-1089-CORE (10kHz to 10 GHz) .
- ESD compliance with EN/IEC 61000-4-2 and GR-1089
- Certification to IEC/EN 60825-1 +A2
- RoHS 6 compliance

Table 8. Laser class for OSFP modules

Part ID	Laser class
OSFP-800G-VR8	1
OSFP-800G-DR8	1
OSFP-800G-DR8P	1

Warranty

Standard warranty: 5 years. Expedited replacement available via a Cisco Smart Net Total Care® Service support contract.

Product sustainability

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

Table 9. 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
Material	Product packaging weight and materials	Contact: environment@cisco.com

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Additional information

For more information about Cisco 800G OSFP transceiver modules, contact your sales representative or visit www.cisco.com/en/US/products/hw/modules/ps5455/prod_module_series_home.html.

Document history

New or Revised Topic	Described In	Date
Initial Release		January 31, 2025
Added OSFP-800G-VR8 and OSFP-800G-DR8P		March 28, 2025

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