Cisco OSFP 800G Riding Heat Sink Transceiver Modules

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Riding heat sink OSFP 800G provides connectivity for Network Interface Cards (NIC) and liquid cooled switches and routers used in AI front-end and back-end networks with reaches up to 500m.

Product overview

Cisco® OSFP Riding Heat Sink (RHS) 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) Multi Source Agreement (MSA) for pluggable transceivers. These modules are primarily used in Network Interface Cards (NIC) with OSFP-RHS ports and can also be used in liquid cooled switches and routers. Cisco OSFP 800G RHS modules are used in AI applications for both front-end and back-end networks as well as other data center applications. OSFP VR8 reach up to 50m over parallel Multi-Mode Fiber (MMF) and OSFP DR8 reach up to 500m over parallel Single-Mode Fiber (SMF). The modules comply with the OSFP MSA configuration with Riding Heat Sink. 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.



Features and benefits

Table 1. Features and benefits

Feature	Benefit
Hot-swappable	I/O device that plugs into an 800GE OSFP-RHS 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-RHS 800G host platforms 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
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)	Module firmware can be upgraded to support Versatile Diagnostic Monitoring (VDM).

Table 2. Cisco OSFP-RHS 800G portfolio

Product ID	Description
OSFPR-800G-VR8	OSFP-RHS (Riding Heat Sink) Transceiver, 800GBASE-VR8, Dual MPO-12 APC, 30/50m (OM3/OM4) parallel MMF (Multimode Fiber)
OSFPR-800G-DR8	OSFP-RHS (Riding Heat Sink) Transceiver, 800GBASE-DR8, Dual MPO-12, 500m parallel SMF (Single-Mode Fiber)

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Prominent feature

OSFPR-800G-VR8

The Cisco OSFPR-800G-VR8 module supports 800GBASE-VR8 as well as 2x 400GBASE-VR4, 4x 200GBASE-VR2, and 8x 100GBASE-VR1 breakouts for links up to 50m (OM4/5). 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 module requirements with Riding Heat Sink. 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. The module is shipped with firmware that does not support VDM but can be upgraded.

OSFPR-800G-DR8



Figure 1. OSFPR-800G-DR8

The Cisco OSFPR-800G-DR8 module (Figure 1) supports 800GBASE-DR8 as well as 2x 400GBASE-DR4, 4x 200GBASE-DR2, and 8x 100GBASE-DR1 breakouts for links up to 500m. 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 module requirements for ports designed for OSFP Riding Heat Sink. 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 OSFPR-800G-DR8 module is field firmware upgradeable, complying with CMIS 5.3 firmware upgradability process. The module is shipped with firmware that does not support VDM but can be upgraded.

Table 3. OSFP-RHS port and cabling specifications

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

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Platform support

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

Table 4. Electrical specifications

Product	Description	Nominal data rate	High-speed electrical	Link meter
OSFPR-800G-VR8	OSFP-RHS (Riding Heat Sink) Transceiver, 800GBASE-VR8, Dual MPO-12, 30/50m (OM3/OM4) parallel MMF	800GE	800GAUI-8	30m (OM3) 50m (OM4/5)
OSFPR-800G-DR8	OSFP-RHS (Riding Heat Sink) Transceiver, 800GBASE-DR8, Dual MPO-12, 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
OSFPR-800G-VR8	OSFP-RHS (Riding Heat Sink) Transceiver, 800GBASE-VR8, Dual MPO-12, 30/50m (OM3/OM4) parallel MMF	-4.6	4	-6.3	4	1.6 (OM3) 1.7 (OM4/5)	842-948	2.4x10-4
OSFPR-800G-DR8	OSFP-RHS (Riding Heat Sink) Transceiver with Integrated Heat Sink, 800GBASE- DR8, Dual 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.

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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
OSFPR-800G-VR8	OSFP-RHS (Riding Heat Sink) Transceiver, 800GBASE-VR8, Dual MPO-12, 30/50m (OM3/OM4) parallel MMF
OSFPR-800G-DR8	OSFP-RHS (Riding Heat Sink) Transceiver, 800GBASE-DR8,2x MPO-12, 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
- IEEE 802.3ck
- IEEE 802.3df

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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-RHS (Riding Heat Sink) modules

Part ID	Laser class
OSFPR-800G-VR8	1
OSFPR-800G-DR8	1

Warranty

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

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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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For more information

For more information about Cisco 800G OSFP-RHS transceiver module compatibility and support, please refer to the Cisco Transceiver Modules Compatibility Matrix.

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