

Optical Module OSFP Packaging Interface Standard



Overview

OSFP (Octal Small Form Factor Pluggable) is a pluggable optical transceiver interface standard that supports eight electrical lanes (Tx/Rx) per module. Each lane can operate up to 100G PAM4, allowing total bandwidths of 400G or 800G depending on configuration. This specification defines the electrical connectors, electrical signals and power supplies, mechanical and thermal requirements of the OSFP Module, connector and cage systems. Unlike the backward-compatible QSFP-DD, OSFP introduces a slightly larger mechanical form to. MSA (Multi-Source Agreement) standards define the mechanical, electrical, and management interfaces of optical transceivers, enabling multi-vendor interoperability, supply chain flexibility, and large-scale network deployment. Understanding MSA is critical for compatibility validation, cost. 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. While the industry-standard OSFP (Octal Small Form-Factor Pluggable) module has successfully enabled 400Gbps, 800Gbps, and 1.6Tbps optical pluggable modules, it is limited to 32 modules per Rack Unit (RU), typically requiring 2 RUs to achieve 102.

Article Content

Jul 06, 2026

OSFP IHS vs OSFP RHS: Thermal Design and Key

This article introduces two thermal designs for OSFP IHS and OSFP RHS optical modules, explaining their main differences in structure, heat

Jun 14, 2026

SFP-10G-LR-1310nm 20km LC DDM Optical Transceiver

QSFP28 optical module: the interface package size of QSFP28 is the same with QSFP+, which is mainly used in Data Center application. OSFP (Octal Small

Apr 23, 2026

NVIDIA Optical Modules: QSFP-DD/OSFP 800G Solutions,

Explore NVIDIA's 800G optical modules with QSFP-DD and OSFP form factors. Learn about performance specifications, compatibility features, and application scenarios for AI clusters

Nov 28, 2025

OSFP vs. OSFP-XD: Choosing the Right 1.6T Transceiver Form Factor

OSFP is a compact form factor specification designed for high-speed optical modules. It connects to host devices through standardized interfaces, defining the layout for power, control, and...

Mar 28, 2026

OSFP OCTAL SMALL FORM FACTOR PLUGGABLE MODULE

Figure 3-2 shows the dimensions of the Standard OSFP module. Note that the module is shown with a typical latch release mechanism without a pull tab. Alternate latch release mechanisms are allowed.

Nov 21, 2025

Optical Interconnect Technology Analysis: LPO, NPO,

Exploring optical interconnects for AI data centers: LPO for low-power, short-distance links, NPO for high-density, near-package connections,

Apr 27, 2026

Technology from 400G to 800G to 1.6T Transceivers

This paper describes the technical route of optical communication from 400G to 800G to 1.6T optical modules and compares pluggable and CPO.

Sep 07, 2025

1.6T DR8/DR8+/2xDR4/2xDR4+ OSFP PAM4 Optical Transceiver

Optical Transceiver Jabil 1.6T DR8/DR8+/2xDR4/DR4+ (Data Center Reach 8-lane) OSFP PAM4 Optical Transceiver is a small form-factor, high speed, and low power consumption product targeted

Mar 01, 2026

Global 400G Optical Module Market Growth 2026-2032

The 400G Optical Module is a core transceiver device in high-speed optical communication systems, typically in a compact, rectangular, pluggable package. Its structure includes integrated

Jan 05, 2026

OSFP MSA Rev 5.0

The OSFP module contains a PCB with contact pads (i.e., module PC board; paddle card) that mate with a connector as specified in Section 5.10 of this document. Critical dimensions for the contact

Dec 22, 2025

Understanding the OSFP Standard: The Open 400G/800G Optical

What Is the OSFP Standard? OSFP (Octal Small Form Factor Pluggable) is a pluggable optical transceiver interface standard that supports eight electrical lanes (Tx/Rx) per module. Each

Feb 09, 2026

Implementation Agreement for a 3.2Tb/s Co-Packaged (CPO) Module

ABSTRACT: This Implementation Agreement specifies key aspects and electro-optical-mechanical details of a 3.2Tb/s Co-Packaged Module encompassing optical and copper cable attach

May 07, 2026

Cisco OSFP 800G Transceiver Modules Data Sheet

The optical interface can interoperate with any IEEE 400GBASE-FR4 compliant module regardless of the form factor. Forward Error Correction (FEC)

Oct 11, 2025

Optical Transceivers MSA Standards Technical Guide

From SFP and QSFP to today's QSFP-DD and OSFP form factors, MSA specifications define how optical modules are mechanically, electrically, and logically designed—ensuring that products from

Aug 11, 2025

Development trend of optical

Development trend of optical interconnect technology in intelligent computing centers Summary 6 High rate :Intelligent computing centers are driving the acceleration and innovation of optical module chips

May 10, 2026

Linear Pluggable Optics - An Overview

Comparison of proposed solutions: In response, several solutions such as Linear Receive Optics (LRO), Linear Pluggable Optics (LPO) and Co-Packaged Optics (CPO) have been proposed. Fig. 1

Jul 31, 2025

Optical Modules Market Research Report 2034

The optical modules market was valued at \$14.8 billion in 2025 and is projected to reach \$39.6 billion by 2034, growing at a CAGR of 11.5%.

Jun 09, 2026

Data Center Interconnect

Data Center Interconnect using 400G-ZR optical modules and the OSFP-LS Arista dramatically simplifies Data Center Interconnect (DCI) using 400G-ZR optics and the OSFP-Line System (OSFP

Jan 04, 2026

Optical module - A comprehensive exploration

The optical module is composed of optoelectronic devices, functional circuits, and optical interfaces. It mainly performs photoelectric and

Jan 16, 2026

BUVAuncom 800G OSFP SR8 Optical Transceiver 850nm 50m MMF

800G OSFP SR4 Optical Transceiver Module. Our 800G OSFP SR4 module is a high-speed optical transceiver designed for next-generation data centers and AI computing networks supports

Dec 02, 2025

Optical module - A comprehensive exploration

The optical module is one of the core devices of the optical communication system, and its development has a vital impact on its related

Jun 19, 2026

OSFP Optical Transceiver MSA Spec

This specification defines the electrical connectors, electrical signals and power supplies, mechanical and thermal requirements of the OSFP Module, connector and cage systems. The OSFP

Jan 30, 2026

Co-Packaged Optics (CPO) Market Trends 2026: AI Data Center Optical ...

Explore the future of co-packaged optics (CPO) in AI data centers. Learn how silicon photonics, optical I/O, and high-speed optical interconnect technologies are shaping next-generation

Apr 27, 2026

Global 800G Optical Module Market Growth 2026-2032

Typically housed in industry-standard pluggable form factors such as QSFP-DD800 and OSFP, the module integrates multiple core components including optical transmitters and receivers,

Apr 06, 2026

1.6T OSFP 2xDR4/DR8, 1310nm, 500m, DDM, CDR,

The MJ-OSFP1.6TB-DR8 is a cost-effective, high-performance OSFP module tailored for AI datacenter applications, delivering an aggregate throughput of 1.6

Nov 19, 2025

XPO: Redefining Pluggable Optics for AI Networking

This section outlines the five critical requirements that define the next generation of data center optics and examines why existing standards—originally developed for traditional cloud computing

Dec 18, 2025

Optical Transceivers MSA Standards Technical Guide

MSA standards are not just theoretical specifications — they directly influence the mechanical, electrical, optical, and firmware design of SFP, QSFP, QSFP-DD, and OSFP modules.

Jun 10, 2026

1.6T OSFP Transceivers

Amphenol's 200G/lane optical modules support DR4, FR4, 2×DR4, 2×FR4, AOC, and breakout AOC configurations with LC or MPO ports — ideal for 800G/1.6T ethernet applications. Fully compliant

Apr 09, 2026

Optical Module Package Market 2025

Optical Module Package Market was valued at 8942 million in 2024 and is projected to reach US\$ 20220 million by 2032, at a CAGR of 12.7%

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://khanimamboguesthouse.co.za>

Email: sales@khanimamboguesthouse.co.za

Phone: +27 64 852 1973

Address: Unit 7, Greenway Business Park, 8 Innovation Drive, Centurion, 0157, South Africa

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