

Solution Tunable Optical Module OSFP



AI Overview

Tunable OSFP modules are high-performance, pluggable optical transceivers designed for scalable, high-speed data center and hyperscale networks, supporting 400G, 800G, and emerging 1.6T bandwidths with advanced thermal and electrical management.

Overview of OSFP The Octal Small Form-Factor Pluggable (OSFP) standard is an open, vendor-neutral interface designed for high-density, high-speed optical connectivity in modern data centers, AI clusters, and hyperscale environments. OSFP modules support eight electrical lanes, each capable of 50G, 100G, or 200G PAM4 signaling, enabling total bandwidths of 400G, 800G, and 1.6T depending on the module generation. Unlike QSFP-DD, OSFP prioritizes thermal headroom, electrical performance, and future scalability, making it ideal for AI and GPU-intensive workloads.

Tunable Optical Capabilities Tunable OSFP modules allow dynamic adjustment of the optical wavelength, which is critical for Dense Wavelength-Division Multiplexing (DWDM) applications. This tunability enables:

- Flexible deployment across multiple channels without changing hardware
- Optimized spectrum utilization for metro, regional, and data center interconnects
- Support for 800ZR and 800G ZR+ coherent optics, achieving distances up to 120 km for 800ZR and beyond 1000 km for 800G ZR+

Tunable modules leverage advanced DSP ASICs and silicon photonics, providing high-performance signal processing, low power consumption, and interoperability with OIF, OpenZR+, and OpenROADM standards.

Thermal and Electrical Design OSFP modules are engineered for high thermal dissipation, with integrated heatsinks supporting 30–60W power budgets for 1.6T modules. The form factor ensures efficient airflow and cooling, critical for AI cluster deployments and high-density switch configurations. Electrical design supports break-out applications and maintains backward compatibility with previous OSFP generations, ensuring smooth upgrades from 400G to 1.6T.

Applications Tunable OSFP modules are widely...

Article Content

400G and 800G OSFP transceivers | Smartoptics

OSFP cables: DAC & AOC To complement OSFP transceivers, Smartoptics offers a range of high-performance cabling solutions for different networking needs:

Cisco DP04QSDD-HE0 Compatible 100-400GbE DCO QSFP-DD DWDM Tunable ...

Cisco DP04QSDD-HE0 Compatible 100G-400G QSFP-DD High-Power (Bright) DCO ≤80km Unamplified SMF DOM LC Duplex DWDM Tunable Coherent Optical Transceiver Module

Understanding OSFP Modules: Your Guide to High

OSFP (Octal Small Form-factor Pluggable) modules are becoming increasingly important in achieving high-speed optical connectivity in the fast

800G Digital Coherent Optics DCO Transceiver Market 2026-2034

Beyond the top tier, a diverse set of niche innovators is expanding the competitive landscape. Zhongji Innolight and Hisense Broadband have introduced cost-optimized coherent

800G/400G Coherent OSFP/QSFP-DD Transceiver Modules | Optical

FS 800G/400G Coherent OSFP/QSFP-DD optical transceiver module solutions offer a range of OSFP/QSFP-DD modules 120km/500km reach, and used for Edge DCI, LH, Regional, Metro and

Understanding Optics Module Trends and Growth Dynamics

The Optics Module market is expanding rapidly, driven by data center proliferation and 5G deployment. Analyze the 12% CAGR to \$42 billion by 2033 with our market insights.

Cisco QSFP-DD and OSFP 800G ZR/ZR+ Coherent

These digital coherent optics modules enable 800G traffic over amplified DWDM links up to 120 km for 800ZR and over 1000 km for 800G ZR+.

Security Target Nokia 1830 Photonic Service Switch (PSS)

The 11QPEN4 is a 10G, Quad port, any-rate module with four optical fiber interfaces. This module supports four independent multi-rate 10G channels and is provided in a kit which includes the card

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1.6T OSFP Transceivers Explained: Advantages, Types & FS Solution

Explore the evolution of 1.6T optical transceivers, including their working principles, key technologies, module types, and deployment scenarios, plus FS 1.6T OSFP solutions for next

Top Optical Modules for POTN Deployment: SFP, QSFP, and OSFP

Modern optical transport networks are the nervous system of digital infrastructure. As data demand continues to multiply, choosing the right optical module becomes a crucial decision in

Cisco OSFP 800G Transceiver Modules Data Sheet

It is compliant with IEEE 802.3 800GBASE-VR8 and OSFP MSA module requirements with integrated heat sink. Optical signals are carried over

Leading Optical Transceiver Manufacturer since 2009-FIBERTOP

100GBASE-ER4 QSFP28 100G 1310nm 40km Optical Transceiver Module FIBERTOP
40G QSFP+ EZR4 DWDM 100km LC Optical Transceiver 10G SFP+ DWDM ZR+ 100km
100GHz Grid C-Band

OSFP1600_and_OSFP-XD

The OSFP MSA roadmap provides an excellent mechanical and electrical solution for 800G, 1.6T, and 3.2T pluggable optics with best-in-class thermal performance and support for break-out applications,

400G Optical Modules Explained: SR4 Vs. DR4 Vs. FR4 Vs. LR4

Key differences between SR4, DR4, FR4, and LR4 400G optical modules. Expert advice from Asterfusion engineers to optimize your data center network.

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

The OSFP standard marks a pivotal step toward scalable 400G and 800G optical networking, designed from the ground up for AI, cloud, and HPC infrastructures. With open MSA

OSFP 800G 2xSR4 Accelerates the Interconnection of AI and HPC

NADDOD OSFP 800G 2xSR4/SR8 optical modules support flexible link configurations to meet interconnection requirements in various scenarios: 800G Full Bandwidth Solution: A single

NADDOD NVIDIA/Mellanox MMS4C11 (980-9IAU1-00XM01)

NVIDIA/Mellanox MMS4C11 (980-9IAU1-00XM01) Compatible 1.6TBASE-2xDR4
OSFP224 IHS/Closed Finned Top 8x200G PAM4 Broadcom 3nm DSP (Sian3 | BCM83628) 1310nm 500m SMF DOM Dual

Cisco QSFP-DD and OSFP 800G ZR/ZR+ Coherent

They expand Cisco routed optical networking applications to include 800G links and are compatible with Cisco and third-party 800G-capable routers,

OSFP-IHS vs. OSFP-RHS: Choosing the Right Thermal Solution for

Compare OSFP-IHS and OSFP-RHS thermal designs for 800G and 1.6T optical modules. Learn how to choose the right OSFP solution for air-cooled, liquid-cooled, and AI data center

OSFP vs QSFP-DD Comparison | 800G Optical Module Form Factors

Detailed analysis of OSFP and QSFP-DD form factors for 800G optical modules. Compare specifications, thermal management, backward compatibility, and choose the right solution

SFP28 A 25 Gbps small form-factor hot-pluggable optical module ...

The SFP28 optical module is a further advancement based on the SFP form factor, with a data rate of 25 Gbps, and shares the same physical dimensions as SFP+. SFP28 complies with the SFP28 Multi

OSFP Optical Module Support ICs · Solutions · Magnias

Each module needs a small but precise set of support ICs — multi-voltage conversion, hot-plug load switching, rail supervision, and signal level shifting — that sit alongside the optical engine and DSP.

400G Optical Module Selection Guide: QSFP-DD vs.

Compare QSFP-DD, QSFP28, and OSFP form factors. Learn about compatibility, power constraints, migration TCO, and data center selection

Understanding OSFP Modules: Your Guide to High

Discover how OSFP modules provide high-speed optical connectivity for data center applications. Learn about the different form factors, data rates,

400G and 800G OSFP transceivers | Smartoptics

OSFP Direct Attach Copper (DAC) cables – Cost-effective, low-latency solutions for short-distance connectivity within racks and between adjacent switches. OSFP

AAOI Optical Transceiver 800G: High-Speed Data Solutions

Find top AAOI optical transceiver 800G options for AI, HPC, and data centers. Explore low-latency, high-density, and verified suppliers. Click to discover reliable, future-ready connectivity for

Contact Us

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