



Manufacturer s Independent Switch OSFP

Article Overview

OSFP (Octal Small Form-factor Pluggable) modules provide vendor-neutral, high-speed interconnect solutions for switches, supporting up to 224Gbps per lane and scalable to 1.6Tbps per port.

Overview of OSFP

The OSFP standard defines a high-density, high-speed pluggable interface for data center switches, routers, and high-performance computing systems. It supports 8- or 16-lane configurations with PAM-4 signaling, enabling aggregate data rates up to 1.6Tbps per port, and is scalable with stacked connectors for even higher throughput . OSFP modules are designed to be vendor-neutral, allowing interoperability across different switch manufacturers while maintaining consistent electrical, mechanical, and thermal performance .

Key Features

- o High-Speed Performance: Supports 56Gbps, 112Gbps, and 224Gbps PAM-4 per lane, with total port bandwidth up to 1.6Tbps .
- o Thermal Management: Hexagonal ventilation, integrated heat sinks, and liquid-cooling options help mitigate heat in high-density deployments .
- o Interoperability: Compatible with multiple cable types including direct-attach copper (DAC), active copper (AEC/ACC), optical modules, and pluggable transceivers .
- o Backward Compatibility: OSFP connectors can mate with previous-generation 56G and 112G designs, simplifying upgrades .
- o Mechanical Reliability: Precision-engineered connectors with EMI shielding, laser-welded terminals, and robust cage designs reduce mating errors and signal degradation .

Applications

OSFP modules are ideal for hyperscale data centers, AI and machine learning clusters, high-performance computing, and service provider networks. They support co-packaged optics, 800G coherent pluggables, and long-reach interconnects for metro and regional Ethernet networks . The standard ensures that switches from different manufacturers can use the same OSFP modules, enabling flexible deployment and simplified sourcing.

Manufacturer-Independent Considerations

- o Compliance with OSFP MSA and IEEE standards ensures interoperability across vendors .
- o Multiple vendors (e.g., Molex, Amphenol, Acacia) provide OSFP modules and cages, allowing system

integrators to select components based on performance, thermal requirements, and cost .

o Scalability: OSFP supports future upgrades to higher line rates without redesigning the switch port, making it suitable for evolving AI and high-bandwidth workloads . In summary, manufacturer-independent OSFP solutions provide a standardized, high-speed, and thermally optimized interface for modern switches, enabling interoperability, scalability, and flexibility in high-density data center and network deployments .

The OSFP Management interface is described in a separate OSFP Management Specification. This document provides a common

OSFP optical modules have several notable features: Eight-Channel High-Speed Data Transmission: OSFP achieves

Electronic copies of the design calculations, independent check calculations, design and check computer files, contract plans and

The Octal Small Form Factor Pluggable (OSFP) Connector System provides single- or dual-port, 8- or 16-lane I/O connectivity with

Hier sollte eine Beschreibung angezeigt werden, diese Seite lässt dies jedoch nicht zu.

The OSFP (octal small form factor pluggable) is a type of transceiver that connects a network device, such as a switch, to fiber or

Amphenol Commercial OSFP Interconnect System features 60 contacts per port, with a 0.6mm contact pitch, and

The OSFP form factor was designed specifically for 400G applications and has been further developed to support 800G and 1.6T

This specification defines the electrical connectors, electrical signals and power supplies, mechanical and thermal requirements of

This system houses two independent switches within a single enclosure, each providing 36 ports at 800Gb/s. The Q3200 fixed

OSFP products offer high port density and can fit up to 36 ports of an 8-lane interface in a 1RU switch form factor, aligning with



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With its exceptional performance and the robust capabilities of SONiC, the NADDOD switch is specifically engineered to meet the

Amphenol Commercial OSFP Cable Assemblies deliver aggregate bandwidths of 200G, 400G, and 800G per cable

NVIDIA Spectrum SN5610 64-port 800GbE OSFP Switch provides ultra-fast, energy-efficient connectivity for high-performance

Abstract: This specification defines the electrical connectors, electrical signals and power supplies, mechanical and thermal

EXTREMEPORT(TM) OSFP CONNECTOR AND CAGE SYSTEMS SUPPORTING 56G, 112G & 224G Amphenol's ExtremePort(TM)

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