

QSFP Optical Module Products



Overview

QSFP, QSFP+, zQSFP, QSFP28 and QSFP56, QSFP Our QSFP product portfolio includes cages in single, ganged, and stacked configurations with various light 100G.

Key Takeaways

QSFP Active Optical Modules (AOMs) are high-speed, hot-pluggable optical transceivers designed for reliable, long-distance data transmission in data centers and enterprise networks, with original products certified for vendor compatibility and performance. Overview of QSFP AOMs

QSFP (Quad Small Form-Factor Pluggable) modules are compact, hot-swappable transceivers that combine four independent electrical channels into a single optical interface, enabling scalable bandwidth from 40 Gbps to 400 Gbps and beyond depending on the generation . Active Optical Modules (AOMs) use optical fiber to transmit data over longer distances than copper cables, reducing signal loss and electromagnetic interference.

Generations and Data Rates

- QSFP+: Supports 4 lanes of 10 Gbps each, totaling 40 Gbps aggregate bandwidth .
- QSFP28: Increases per-lane rate to 25 Gbps, achieving 100 Gbps aggregate bandwidth, widely used in 100 Gigabit Ethernet deployments .
- QSFP56: Uses PAM4 signaling for 50 Gbps per lane, supporting 200 Gbps aggregate bandwidth .

- QSFP-DD: Doubles the electrical interface to 8 lanes, supporting 400 Gbps and 800 Gbps while maintaining backward compatibility with QSFP28 modules .

Key Features of Original QSFP AOMs

- Hot-swappable: Can be inserted or removed without powering down the system .
- Vendor-certified: Original products are tested for compatibility with major switches and routers from Cisco, Juniper, Arista, HP, Dell, and Brocade .
- High-performance optical links: Supports multimode (OM3/OM4/OM5) and single-mode fibers with MPO or LC connectors, depending on the module type .
- Standards compliance: Modules adhere to IEEE 802.3 standards (e.g., 100GBASE-SR4, 100GBASE-DR) ensuring interoperability .
- Diagnostic and quality assurance: Original modules undergo extensive testing, including platform diagnostics, coding to OEM specifications, and practical application tests to ensure reliability and traceability .

Applications

QSFP AOMs are widely used in:

- Data centers for high-density, high-speed interconnects.
- Enterprise networks for core and distribution layers.
- High-performance computing environments requiring low-latency, high-bandwidth connections.
- Migration paths: Some BiDi QSFP modules allow reuse of existing duplex MMF infrastructure for upgrades to 40G, 100G, or 400G networks .

Considerations for Original Products

- Authenticity: Original QSFP AOMs are certified by the manufacturer and tested for full compatibility with their branded switches and routers .
- Performance guarantees: Original modules provide predictable link lengths, signal integrity, and error-free operation, unlike some third-party or counterfeit modules.
- Traceability: Each module has a unique serial number for tracking and warranty purposes . In summary, original QSFP Active Optical Modules are essential for high-speed, reliable optical networking, offering certified performance, vendor compatibility, and long-term operational stability, making them the preferred choice for enterprise and data center deployments .

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10G/1G Optics Juniper's 10G and 1G optical modules service a wide range of use cases across campus, data center, and telecom

What is QSFP & QSFP+ Transceiver: An Ultimate Guide

What is a QSFP & QSFP+ Transceiver? QSFP stands for Quad Small Form-factor Pluggable. By integrating four-lane

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