Manufacturer s 40G Optical Core Router



Overview

Cisco 40GBASE QSFP Modules Data SheetIt enables high-bandwidth 40G optical links over 12-fiber parallel fiber terminated with MPO/MTP multifiber female 40G.

Key Takeaways

40G optical routers use QSFP+ transceivers from manufacturers like Cisco, Juniper, FS, Eoptolink, and Smartoptics to deliver high-speed 40 Gigabit Ethernet connectivity for data centers, enterprise, and service provider networks.Overview of 40G Optical Modules

40G optical routers rely on QSFP+ (Quad Small Form-factor Pluggable Plus) transceivers, which provide four 10Gbps channels in a single pluggable interface, supporting a total of 40Gbps. These modules are hot-swappable and compatible with IEEE 802.3ba standards, ensuring interoperability across multivendor environments (Cisco, Juniper, FS, Eoptolink, Smartoptics) .

Key Manufacturers and Offerings
• Cisco: Offers 40GBASE QSFP modules for data centers and enterprise networks, including SR4, CSR4, and LR4 variants. Modules support multimode and single-mode fibers with link lengths from 100 meters to 10 kilometers, and are certified for Cisco QSFP 40G ports .

• Juniper: Provides 40G and 4x10G optical transceivers compatible with ACX, EX, MX, PTX, SRX, and QFX product lines. Juniper modules are tested for power, thermal, and software integration with Junos OS, ensuring reliability in cloud and enterprise deployments .

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• FS: Offers a broad 40G transceiver portfolio including QSFP-SR4, QSFP-LR4, and converter modules. These support single-mode and multimode fibers, with distances ranging from 150 meters to 40 kilometers, and can be used for 40G Ethernet or breakout to 10GBASE-SR Ethernet .

• Eoptolink: QSFP+ modules support 40GBASE-SR4 and LR4 applications, with multimode fiber for short reach (850nm) and single-mode fiber for long reach (1300nm). They provide high density and cost-effective solutions for switches, routers, and data center equipment .

• Smartoptics: Offers short-range multimode QSFP+ for up to 150 meters and long-range single-mode QSFP+ for up to 10 kilometers. DWDM QSFP+ modules extend reach for data center interconnects and carrier networks. Breakout configurations allow a 40G port to be split into multiple 10G connections .

Applications and Use Cases

• Data Centers: High-density 40G connections for server-to-switch and switch-to-switch links.

• Enterprise Networks: Core and distribution layer connectivity with breakout options to extend 10G infrastructure.

• Service Providers: Metro and regional networks using long-range single-mode or DWDM QSFP+ modules.

• High-Performance Computing: Low-latency, high-bandwidth links for compute clusters.

Connectivity and Standards

40G optical modules use MTP/MPO connectors for multimode fibers and LC connectors for single-mode fibers. They comply with IEEE 802.3ba and QSFP MSA standards, ensuring interoperability and reliable performance across different vendors and network architectures .

Summary

Selecting a 40G optical router involves choosing the right QSFP+ transceiver based on distance, fiber type, breakout requirements, and vendor compatibility. Cisco, Juniper, FS, Eoptolink, and Smartoptics provide a wide range of options suitable for data centers, enterprise networks, and service provider applications, ensuring high-speed, reliable, and scalable 40G Ethernet connectivity.

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Core router

A core router is a router designed to operate in the Internet backbone, or core, or in core networks of internet service providers.

BRKOPT-2699

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