

QSFP-DD Carrier-Grade Router



Overview

QSFP-DD Product Family » Acacia Powered by Greylock and Delphi DSP ASICs, and silicon photonic integrated circuits (PICs) for an optimized co-packaged design.

Key Takeaways

QSFP-DD modules are high-density, high-speed pluggable optical solutions designed for carrier-grade routers, supporting 400G, 800G, and 1600G speeds with full interoperability and thermal management. Overview of QSFP-DD Technology QSFP-DD (Quad Small Form-factor Pluggable Double Density) is an advanced optical module standard that doubles the lane count of traditional QSFP modules, providing an eight-lane electrical interface capable of 28 Gbps NRZ, 56 Gbps PAM4, and 112 Gbps PAM4, achieving up to 800 Gbps per port and supporting higher speeds like 1600G. Its compact design allows high port density in switches and routers, making it ideal for data center interconnects, metro/regional networks, and service provider applications.

Key Features for Carrier-Grade Routers

High Performance and Interoperability: QSFP-DD modules support multiple industry standards, including OIF, OpenZR+, and OpenROADM MSA, ensuring compatibility across different vendors and network architectures.

Advanced DS

P and Silicon Photonics: Modules like Acacia's QSFP-DD leverage Delphi 9th Generation DSP ASICs and silicon photonic integrated circuits for optimized performance, low power consumption, and extended reach up to 120 km for 800G DCI links. **Thermal Management:** TE Connectivity QSFP-DD cages feature proprietary heat sinks, enabling operation in 15–18W applications while maintaining signal integrity and reliability. **Backward Compatibility:** QSFP-DD ports are compatible with existing QSFP modules, providing a smooth upgrade path without replacing the entire infrastructure.

Flexible Applications: Suitable for AI/ML workloads, cloud computing, and high-density data centers, as well as routed optical networking strategies in Cisco routers.

Trusted Manufacturers and Genuine Products

Acacia: Offers QSFP-DD modules optimized for coherent 800G pluggables, supporting long-haul and ultra-long-haul networks. **Cisco:** Provides QSFP-DD Open Line System (OLS) modules compatible with Cisco routers, featuring miniaturized 400G-capable coherent WDM interfaces.

T

E Connectivity: Supplies QSFP-DD connectors, cages, and cable assemblies with 112G PAM4 support, fully backward compatible and designed for high-density deployments. **Amphenol:** Offers QSFP-DD modules and accessories with detailed specifications for integration into carrier-grade systems.

Recommendations for Ensuring Originality

Purchase from authorized distributors or directly from manufacturers (Cisco, Acacia, TE Connectivity, Amphenol). Verify part numbers and datasheets to match the intended router and network application.

Check for MS

A compliance (QSFP-DD MSA, OpenZR+, OpenROADM) to ensure interoperability. Inspect thermal and power specifications to confirm suitability for high-density, high-performance deployments. QSFP-DD modules are essential for modern carrier-grade routers, providing high-speed, reliable, and interoperable optical connectivity while supporting the latest networking and AI/ML demands.

Choosing genuine products from trusted manufacturers ensures performance, longevity, and network reliability.

Article Content

QSFP-DD Product Family » Acacia

Powered by Greylock and Delphi DSP ASICs, and silicon photonic integrated circuits (PICs) for an optimized co-packaged design with 3D Siliconization.

QSFP-DD Connectors | High Speed I/O | Amphenol

Amphenol's QSFP-DD high-speed connector family features a scalable, high-performance interconnect platform with 76 contacts on a 0.8mm

MikroTik · SFP/QSFP

DDQ+DA0003 \$109.00* A 400-Gigabit QSFP-DD direct attach cable, 3m long. Enables easy direct connectivity between ultra-fast devices like the CRS812 and CRS804!

Genuine optics 400G series products.

The 400G QSFP-DD ZR+ Pro Transceiver is a high performance, high output power, cost effective module for optical data communication applications from 100G to

Cisco QSFP-DD Pluggable Open Line System (QDD)

This “pluggable open line system” perfectly integrates into the Cisco Routed Optical Networking architecture by hosting line system abilities directly

MikroTik · DDQ+85MP01D

QSFP-DD optical module for reliable 400G fiber connections, perfect for distances beyond DAC reach, up to 100 meters! The module includes built-in digital

QDD-400G-LR8-S | Cisco QSFP-DD | 400 Gigabit

Designed for QSFP-DD ports, the unit integrates eight channels through LAN-WDM multiplexing. Power type is standard pluggable; cooling depends on system

Cisco 400G QSFP-DD Cable and Transceiver Modules

The Cisco® family of QSFP-DD modules provide the industry's highest bandwidth density while leveraging the backward compatibility to lower

800G QSFP-DD Digital Coherent Optics Transceiver

High transmitter optical output power enable the transceivers to be compatible with deployed and emerging ROADMs line systems. The 800G Digital Coherent Optics

Cisco DP04QSDD-HE0 QSFP-DD 400G-ZR+ DCO C

Cisco's DP04QSDD-HE0 is a leading option in the category of QSFP-DD 400G-ZR+ modules, offering high transmission power in the C-Band spectrum. Its advanced

QSFP-DD Optical Transceivers for High-Speed Connections

Quad Small Form-Factor Pluggable Double-Density (QSFP-DD) offers twice as many high-speed electrical interfaces as QSFP28 while maintaining the same port density. When combined with higher

Cisco Transceiver Modules

Cisco Transceiver Modules - Learn product details such as features and benefits, as well as hardware and software specifications.

MikroTik · SFP/QSFP

DDQ+85MP01D \$159.00* QSFP-DD optical module for reliable 400G fiber connections within ultra-fast setups, like the CRS812 and CRS804!

Cisco 400G Digital Coherent Optics QSFP-DD Optical Modules

Product overview Cisco now offers a range of all new 400G Digital Coherent QSFP-DD transceivers. Cisco already offers a range of Digital Coherent CFP2 transceivers capable of supporting up to a 200

QSFP-DD Connectors, Cages and Cable Assemblies

QSFP-DD provides high-performance computing capability. The QSFP interconnects density is doubled with electrical interface, providing superior thermal and signal integrity.

Arista Optics Modules and Cables

To accommodate an increasing spectrum of applications, Arista offers a wide choice of OSFP, QSFP-DD, QSFP, SFP, SFP-DD and DSFP transceivers and cables that comply with industry standards,

Source Photonics" telecom-grade 400G QSFP-DD and 100G QSFP28

News: Optoelectronics 21 September 2022 Source Photonics" telecom-grade 400G QSFP-DD and 100G QSFP28 PAM4 products win ECOC Industry Award for Optical Transport At the European

Juniper ACX7100-32C-AC-AO Router 32xQSFP28 4xQSFP56-DD AC

Juniper ACX7100-32C-AC-AO Overview The Juniper ACX7100-32C-AC-AO is a carrier-grade router designed for high-density aggregation and data center edge deployments. In a compact 1U chassis,

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Technical inquiry: <https://bagyou.es/project-enquiry.html>

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

