

Gulf Region QSFP-DD Optical Modules

QSFP-DD



Overview

QSFP-DD Optical Transceivers for High-Speed Connect with existing, lower speed QSFP modules with QSFP-DD backwards compatibility. Optimize thermal manageme.

Key Takeaways

QSFP-DD (Quad Small Form-factor Pluggable Double Density) modules are high-speed optical transceivers designed for next-generation networking, offering up to 400G-800G bandwidth and widely available in the Gulf region, particularly the UAE. Overview of QSFP-DD Technology QSFP-DD modules double the number of electrical lanes compared to traditional QSFP modules, supporting eight lanes instead of four, which enables significantly higher aggregate data rates without increasing the module size. They often use PAM4 modulation, allowing each lane to transmit more data efficiently, making them ideal for hyperscale data centers, AI compute clusters, and high-performance enterprise networks.

QSFP-DD is compatible with existing QSFP infrastructure, ensuring smooth integration into current network architectures. Applications in the Gulf Region In the UAE and broader Gulf region, QSFP-DD modules are critical for: AI and cloud computing infrastructure Hyperscale and enterprise fabric networks FTTH and national digital infrastructure projects High-speed interconnects for GPU fabrics, NVLink, and InfiniBand They are increasingly adopted for ultra-low latency links and AI training clusters, supporting the region's push toward becoming a global AI and cloud hub.

Technical Specifications

Data Rates: 400G and 800G per module
 Electrical Lanes: 8 lanes for QSFP-DD vs 4 lanes for traditional QSFP
 Form Factor: Compact, compatible with QSFP-DD MSA standards
 Optical Interfaces: Duplex LC connectors for coherent optics
 Reach: 800ZR modules support up to 120 km; 800G ZR+ modules can exceed 1000 km over DWDM networks
 These modules are suitable for Data Center Interconnects (DCI), metro, and regional networks, providing high-performance interoperability and long-distance connectivity. Availability and Procurement in the Gulf
 Local suppliers in the UAE, such as SFPS.

A

E, provide QSFP-DD modules from major vendors including Cisco, Arista, Juniper, Dell EMC, HPE, Huawei, and NVIDIA/Mellanox. Benefits of local procurement include: Same-day delivery in Dubai, Abu Dhabi, Sharjah, RAK, Fujairah, and Al Ain
 Cost savings up to 70% compared to OEM pricing while maintaining performance
 Quality assurance with TX/RX power testing, DDM verification, and coding accuracy checks
 Support for AI, HPC, and hyperscale deployments
 Pricing varies widely depending on module type and reach, with short-reach SR8 modules starting around \$1,400-\$1,800 and long-haul coherent ZR+ modules exceeding \$130,000 for OEM products.

Conclusion
 QSFP-DD optical modules are a key enabler of high-speed, high-density networking in the Gulf region, supporting AI, cloud, and enterprise infrastructure. Their high bandwidth, compact form factor, and compatibility with existing systems make them essential for modern data centers and interconnects. Local suppliers provide cost-effective, tested, and rapidly deliverable options, ensuring network reliability and scalability for regional projects.

Article Content

QSFP-DD Optical Transceivers for High-Speed

Connect with existing, lower speed QSFP modules with QSFP-DD backwards compatibility. Optimize thermal management with flexible heatsink

QSFP-DD Optical Transceivers for High-Speed Connections

Systems designed with QSFP-DD ports are backwards compatible to support existing QSFP+, QSFP28, and QSFP56 modules. This provides flexibility for network designs and migrations to next-generation

QSFP-DD Optical Transceivers – MapYourTech

QSFP-DD is an advanced hot-pluggable optical transceiver form factor that doubles the bandwidth density of traditional QSFP28 modules by

QSFP-DD Optical Transceivers Unlocking Faster

The QSFP-DD (Quad Small Form-Factor Pluggable Double Density) optical transceiver is a revolutionary advancement in high-speed data

QSFP-DD Optical Module Wiki

QSFP-DD (Quad Small Form Factor Pluggable-Double Density) is a new modular connector system that utilizes a dual-density, four-channel, small, hot-swappable optical module

Specification – QSFP-DD

August 7, 2020 – QSFP-DD Hardware Specification for QSFP DOUBLE DENSITY 8X PLUGGABLE TRANSCEIVER – Rev 5.1 July 11, 2019 – QSFP-DD Hardware Specification for QSFP

QSFP-DD Connector System

QSFP-DD Interconnect System enables faceplate density equal to the current 2x1 QSFP form factor, but with 8-lane ports. In other words, a total of 256 differential

Understanding the QSFP-DD Standard: The Foundation of 400G

QSFP-DD (Quad Small Form Factor Pluggable Double Density) is an evolution of the QSFP family, extending its lane capacity from 4 to 8 high-speed electrical lanes. Each lane supports

What factors influence 400G optical transceiver modules price?

Niche market share means higher NRE (non-recurring engineering) and lower volumes, which can push per-unit pricing above both QSFP-DD and OSFP. Key takeaway: Match the 400g optical transceiver

Commercial Optical Transceiver Market Trends & Forecast 2034

Q4 2023: Several industry leaders announced commercial availability of 800G OSFP and QSFP-DD optical transceivers, leveraging 100G per lane PAM4 technology to meet the escalating

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.

Cisco Network Convergence System 1004 High-Density QSFP-DD

The Cisco NCS 1004 High-Density QSFP-DD Transponder takes advantage of DCO optics innovation without router dependency and complement high-performance transponder cards

Cisco 400G Digital Coherent Optics QSFP-DD Optical Modules Data

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-Gbps

Optical Transceiver Market Size, Share, Industry Report - 2035

The trend began in 2021, driven by the growing need for QSFP-DD or OSFP modules to deliver maximized front panel channels. It is projected to continue beyond 2030 as switching capacities

QSFP-DD Optical Module Overview: What is the differ?

This article will introduce the next generation optical module in detail, QSFP-DD, also known as quad small form factor pluggable, and this article will also

Comprehensive Guide to 400G/800G QSFP-DD Optical

Applications of 400G/800G QSFP-DD Optical Modules The 400G/800G QSFP-DD optical modules leverage a double-density design to

Global 400G QSFP DD Optical Module Market Research Report 2025

Globally, QSFP DD optical module companies are mainly distributed in the Asia-Pacific region, of which the Chinese market occupies a large market share, which is expected to exceed 45%. In the future,

What is QSFP-DD Modules

Backwards compatibility is the primary appeal of the QSFP-DD form factor. The QSFP form factor is today's industry workhorse for delivering 40 and 100GbE. The "Q" is for "quad" — a nod

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

