

QDD optical module



Overview

FS 400G QSFP-DD module solutions featuring high-performance, high-bandwidth, and cost-effectiveness, are ideal for 400GbE and data centres.

Key Takeaways

QDD (QSFP-DD) optical modules are high-speed 400G transceivers designed for data center, cloud, and high-performance network applications, supporting various distances, connector types, and breakout configurations. Overview QDD (Quad Small Form-Factor Pluggable Double Density) modules are 400G optical transceivers that enable high-bandwidth Ethernet connectivity. They are designed to support 400 Gigabit Ethernet over single-mode or multimode fiber and are compliant with QSFP-DD MSA, 100G Lambda MSA, and IEEE 802.

3bs standards. These modules are hot-pluggable and provide high-density solutions for data centers, enterprise networks, and service provider applications. Key Variants DR4 / 400GBASE-DR4+: Supports up to 2 km over single-mode fiber (SMF) using four parallel 100G PAM4 lanes with MTP/MPO-12 connectors.

It allows 4x100G breakout to QSFP28 100G-FR. FR4 / 400GBASE-FR4: Supports up to 2 km SMF with duplex LC connectors, suitable for medium-range data center interconnects. SR8 / 400GBASE-SR8: Designed for short-range multimode fiber (OM3/OM4), supporting link lengths up to 70-100 meters with MTP/MPO connectors.

Z



R / ZR+ Coherent Modules: High-performance coherent transceivers for long-haul and metro networks, supporting distances up to 120 km with amplification and DWDM applications. They use C-band tunable coherent optics and advanced modulation formats like DP-QPSK, DP-16QAM. Connectors and BreakoutMTP/MPO-12: Common for DR4 and SR8 modules, supporting parallel lanes and breakout configurations.

L

C Duplex: Used in FR4 modules for medium-range SMF links.

Copper Direct-

Attach (CUxM): Short-range QSFP-DD to QSFP-DD or QSFP-DD to 4x100G copper connections for intra-rack or adjacent rack links.

Applications

Data Centers: High-density 400G interconnects between switches and servers. **Cloud Networks:** Scalable, high-bandwidth links for cloud infrastructure. **Enterprise Core and Distribution:** High-speed backbone connectivity.

Metro and Long-

Haul Networks: Coherent ZR/ZR+ modules for regional and long-distance optical transport.

Performance Features

High Bandwidth Density: Supports 400G Ethernet in a compact QSFP-DD form factor. **Breakout Capability:** Enables splitting a 400G port into multiple 100G or 200G links. **Protocol Compliance:** IEEE 802.

3bs, 400GAUI-8/CEI-56G-VSR-PAM4, and CMIS 4.0. **Digital Diagnostics:** I2C interface for monitoring optical power, temperature, and other parameters.

Summary QDD optical modules provide flexible, high-performance solutions for modern high-speed networks. Depending on the variant, they can support short-range multimode, medium-range single-mode, or long-haul coherent links, with options for breakout, high-density deployment, and advanced modulation formats. They are essential components for 400G Ethernet connectivity in data centers, cloud networks, and service provider infrastructures.

Article Content

Cisco 400G Digital Coherent Optics QSFP-DD Optical

These small, modular optical interface transceivers offer a convenient and cost-effective solution for an array of applications in the data center,

400Gb/s QSFP-DD ZR+ Coherent Optical Transceiver

The 400G QSFP-DD ZR+ is a C-Band optical frequency tunable coherent optical module, combines 7nm coherent DSP ASIC functionality with best in class ultra-narrow line-width tunable

400GbE QSFP-DD Transceiver Modules | Optical

FS 400G QSFP-DD module solutions featuring high-performance, high-bandwidth, and cost-effectiveness, are ideal for 400GbE and data centres.

400Gb/s QSFP-DD ZR Coherent Optical Transceiver

Description The 400G QSFP-DD ZR Transceiver is a high performance, cost effective module for optical data communication applications to 400G. The 400G QSFP-DD ZR is designed to

400G QSFP-DD Cable and Transceiver Modules Data Sheet

400G QSFPDD active optical cables (Figure 10) are designed for use in 400 Gigabit Ethernet links over OM4 multimode fibers, and contain eight multi-mode fibers (MMF) optic transceivers per end, each

Overview of the YXFiber QDD 400G DR4 Connectivity Solution

The YXF-QDD-400G-DR4 optical module is an ideal choice in this scenario; its breakout capability allows a single 400G QSFP-DD port to be split into four 100G QSFP28 ports. This

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

QSFP-DD (Quad Small Form-Factor Pluggable Double Density) is a double-density compact pluggable optical module defined by the QSFP-DD MSA

QSFP-DD Product Family » Acacia

Quad Small Form-factor Pluggable Double Density (QSFP-DD) solution that fits into high-density switch and router client ports for optical interconnect links

In-Depth Analysis of QSFP-DD 400G FR4 Transceivers

This article explains 400G QSFP-DD FR4 optical transceivers, covering their advantages, working principles, and why they are ideal for 400G data centers. It also highlights the

Cisco DP04QSDD-HE0 Compatible 100-400GbE DCO

Cisco DP04QSDD-HE0 Compatible QDD-400G-ZRP+ is designed to 100G/200G long haul and 300G/400G Metro IP over DWDM applications without inline

AI Data Center Optical Transceiver Module Market 2025-2030

The AI data center optical transceiver market has entered a historic growth phase, driven by the exponential expansion of AI computing clusters and the accelerated migration from traditional copper

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.

Meaning of Optical Module Pull Tap Colors

Optical module pull tab colors serve as a visual language in network operations and maintenance. Their core value lies in simplifying module selection and troubleshooting.

Projecting the Optical Fibre Components and Module Market's

The market analysis of optical fibre components and modules takes a comprehensive approach, examining technological advancements, market trends, competitive landscapes, and

Optical Module MCUs Become Critical as AI Data Centers Drive

MCU chips for optical modules emerge as a critical semiconductor segment as AI data center buildout drives 800G/1.6T demand, with domestic players GigaDevice and Nations

Why Arista's New Optical Transceiver Is a Big Deal

Futurion Take: Arista's new XPO module marks a fresh and important take on optical transceiver technology. If it performs in production as planned, it could substantially reduce capex

Huijue 5228e optical module Germany

All Companies and suppliers for huijue-5228e-optical-module Find wholesalers and contact them directly Leading B2B marketplace Find companies now!

Cisco 400G Digital Coherent Optics QSFP-DD Optical Modules

Cisco offers a comprehensive range of pluggable optical modules in the Cisco® pluggables portfolio. The wide variety of modules gives you flexible and cost-effective options for all types of interfaces.

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

