Haiti Offshore Optical Line Terminal QSFP-DD

Overview

The QSFP-DD family supports legacy QSFP channels on the front interface and four additional channels on the rear interface.

Key Takeaways

QSFP-DD technology enables high-speed, pluggable optical line terminals suitable for offshore deployments, supporting up to 400G per port with low-latency, high-bandwidth optical links. Overview of QSFP-DDQSFP-DD (Quad Small Form-Factor Pluggable Double Density) is a high-performance, multi-lane pluggable interface designed for modern optical and copper interconnects. It supports eight high-speed electrical lanes, capable of 28 Gbps NRZ, 56 Gbps PAM4, and 112 Gbps PAM4, achieving up to 800 Gbps per port in standard configurations, and up to 1.

6 Tb/s per port in advanced 224G systems. QSFP-DD modules are backwards compatible with legacy QSFP and QSFP56 modules, allowing flexible upgrades without replacing existing infrastructure. Optical Line Terminal (OLT) ApplicationsFor offshore optical networks, QSFP-DD modules are used in pluggable Open Line Systems (OLS), which integrate directly with routers or optical amplifiers.

Cisco's QSFP-DD OLS, for example, provides a compact, 400G-capable coherent DWDM interface within the QSFP-DD form factor, enabling long-haul transmission with minimal footprint. These modules support channel breakout options, allowing flexible deployment in high-density offshore or coastal network nodes. QSFP-DD Linear Pluggable Optics (LPO)Amphenol's QSFP-DD Linear Pluggable Optical (LPO) transceivers deliver low-latency, high-bandwidth PCIe Gen 5.

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0 over optical links, ideal for rack-to-rack interconnects and server disaggregation in offshore data centers. They operate with 8-channel full-duplex, up to 50 meters reach, and consume less than 5W, making them suitable for energy-efficient offshore deployments. Key Advantages for Offshore OLTsHigh Bandwidth: Supports 400G per port and scalable to 1.

6T in advanced systems. Low Latency: Optimized for real-time data transmission, critical for offshore monitoring and communications. Compact Form Factor: QSFP-DD modules reduce space requirements in offshore racks and enclosures.

Thermal Management: Proprietary heat sink designs allow operation in 15–18W applications without performance degradation. Flexibility: Compatible with optical, passive copper, and active copper solutions, enabling hybrid network designs.

Deployment Considerations

When deploying QSFP-DD OLTs offshore, operators should consider: Distance and Amplification: Coherent DWDM QSFP-DD modules may require additional amplification for distances beyond 40 km. Environmental Conditions: Modules must be rated for temperature, humidity, and vibration typical of offshore platforms. Integration with Existing Infrastructure: Backwards compatibility allows gradual upgrades from QSFP28 or QSFP56 systems.

QSFP-DD technology provides a scalable, high-speed, and energy-efficient solution for offshore optical line terminals, supporting modern telecom, cloud, and AI/ML workloads while maintaining flexibility and reliability in challenging environments.

Article Content

QSFP-DD Linear Pluggable Optics (LPO)

Watch Amphenol''s expert demonstrate the QSFP-DD Linear Pluggable Optics in action at the OFC 2025! Lightning-fast PCIe Gen 5

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

The QSFP-DD family supports legacy QSFP channels on the front interface and four additional channels on the rear interface. This interconnect

Optical Connector – QSFP-DD

The QSFP-DD will be able to support both optical and copper interfaces, but those physical layer specifications will be done outside of the MSA specification as is usual for form factor MSA

QSFP-DD Optical Transceivers for High-Speed Connections

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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

Specification – QSFP-DD

July 11, 2019 – QSFP-DD Hardware Specification for QSFP DOUBLE DENSITY 8X PLUGGABLE TRANSCEIVER – Rev 5.0 May 8, 2019 – Common Management Interface

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

QSFP-DD Connectors, Cages and Cable Assemblies

QSFP-DD cages are fully backwards compatible, providing an upgrade path from existing QSFP solutions - allowing an economical path to upgrade to 112G operations.

QSFP-DD Optical Transceivers for High-Speed Connections

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

400GBASE-ZRP-HT QSFP-DD 120km Transceiver Datasheet | FS

With a comprehensive line of original-brand switches, we can recreate an environment and test each optics in practical application to ensure quality and distance.

400ZR Coherent QSFP-DD Optical Transceiver Module

The module is QSFP-DD type2 size (18.4 mm x 93.4 mm x 8.5 mm) and hot pluggable by a 76-pin connector. The maximum power consumption is 16.5 W and power supply voltage is +3.3V.

Complete Guide to 400G QSFP-DD Optical Transceivers

The QSFP-DD is the smallest 400G form factor optical module on the market today. It is also the optical module that offers the highest transmission bandwidth density in 400G applications,

QSFP-DD Optical Transceivers Unlocking Faster

QSFP-DD Optical Transceivers deliver up to 800Gbps speeds, offering high bandwidth, energy efficiency, and compatibility for modern networks

QSFP-DD Connector System

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QSFP-DD Interconnect System''s 8-lane electrical interface transmits 28G NRZ, 56G PAM-4 and 112G PAM-4, up to 200, 400 or 800 Gbps aggregate. Backwards

Comprehensive Guide to QSFP – MapYourTech

Comprehensive Guide to QSFP Technology Comprehensive Guide to QSFP Technology Quad Small Form-Factor Pluggable Optical Transceivers Introduction The Quad Small Form-Factor

SFP, QSFP, QSFP-DD, OSFP Active Optical Cable Assemblies

SFP, QSFP, QSFP-DD, OSFP ACTIVE OPTICAL CABLE ASSEMBLIES Our active optical cable assembly portfolio provides improved cable flexibility and longer reach as compared to both

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

Cisco 400G QSFP-DD High-Power (Bright) Optical

Learn how Cisco 400G QSFP-DD High-Power (Bright) Optical module''s small size and low power make it an optimal choice for a wide range of

Cisco QSFP-DD800 Transceiver Modules Data Sheet

For more information and references on QSFP-DD cable guides, please click on the following link: Cisco Transceiver Modules - Brochures - Cisco

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