# QSFP28 Optical Module 800G Specifications




## Overview

800G QSFP-DD Cable and Transceiver Modules Data SheetThe OSFP-DR8-800G supports link lengths of up to 500m over a standard pair of G.652 single-mode fiber.

## Key Takeaways

QSFP28 modules are widely used for 100G Ethernet, but for 800G applications, QSFP-DD or OSFP modules are the standard, offering high-density, low-power 800G connectivity. OverviewQSFP28 is primarily designed for 100G Ethernet deployments, using NRZ modulation and supporting four 25G lanes. While QSFP28 itself does not natively support 800G, it is backward compatible with QSFP-DD ports, which are designed for 400G and 800G Ethernet.

QSFP-DD modules double the electrical lanes compared to QSFP28, enabling higher throughput within the same form factor, making them suitable for modern high-speed data center networks. Key Specifications for 800G QSFP-DD/OSFP ModulesData Rate: 800G Ethernet throughput, often implemented as 8x100G DR8 or 4x200G lanes using PAM4 modulation. Link Distance: DR8 modules: up to 500 meters over G.

652 single-mode fiber (SMF) with MPO-16 connectors. FR4 modules: up to 2 km over SMF with duplex LC or CS connectors, using four wavelengths (1271, 1291, 1311, 1331 nm),. Connector Types: MPO-16, MTP/MPO-12, duplex LC, or CS depending on module type and reach.

Standards Compliance: IEEE 802. 3ck, IEEE 802. 3cu, OSFP/QSFP-DD MSA, CMIS Rev 5.

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0. Applications: Data centers, high-performance computing networks, enterprise core/distribution layers, cloud networks, and breakout configurations (e.g., 2x400G DR4 or 8x100G DR),. Monitoring: Digital Diagnostic Monitoring (DDM) for real-time operating parameters.

Thermal Considerations: QSFP-DD modules are preferred for standard data centers, while OSFP modules are used in high-power AI/ML clusters due to better thermal performance. Comparison with QSFP28FeatureQSFP28QSFP-DD / OSFP 800GMax Data Rate100G800GModulationNRZPAM4Lanes4x25G8x100G or 4x200GTypical Reach100m (MMF) / 10km (SMF)500m–2km (SMF)ConnectorMPO/MTP or LCMPO-16, MTP/MPO-12, LC, CSApplications100G Ethernet, legacy data centers800G Ethernet, high-density data centers, HPC, cloudPractical ConsiderationsQSFP28 modules are not directly used for 800G, but QSFP-DD ports maintain backward compatibility with QSFP28 optics, allowing gradual network upgrades.

For 800G deployments, selecting the right module depends on link distance, fiber type, and thermal constraints. Breakout options allow splitting 800G into multiple lower-speed links (e.g., 2x400G or 8x100G), providing flexibility in network design. In summary, while QSFP28 is a 100G standard, QSFP-DD and OSFP modules are the practical choice for 800G networks, offering high-density, PAM4-based connectivity with support for various link distances and breakout configurations, fully compliant with IEEE and MSA standards.

## Article Content

800G QSFP-DD Cable and Transceiver Modules Data Sheet

The OSFP-DR8-800G supports link lengths of up to 500m over a standard pair of G.652 single-mode fiber via dual MTP/MPO-12 connectors. It complies with the IEEE 802.3ck, OSFP MSA

Intel® Ethernet QSFP28 Optic

Intel® Ethernet QSFP28 Optic quick reference with specifications, features, and technologies.

Arista Optics Modules and Cables

Each module is optimized for different media and reach (ranging from 0.5 meters to 80 kilometers). All interface speeds, from 1G to 400GE have connectivity options that include Direct Attach copper

Juniper 800G Optical Transceivers and Cables Guide

Use this guide to learn about the Juniper Networks® 800G optical transceivers and cables, their specifications, and how to install, remove, and maintain these transceivers.

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100G QSFP28 Cable and Transceiver Modules Data Sheet | FS

The 100GBASE-LR Single Lambda QSFP28 Optical Transceiver Module is designed for use in 100GBASE Ethernet throughput upto 10km over single mode fiber (SMF) using a wavelength of

800Gb/s QSFP-DD Transceivers

Amphenol''s 800G QSFP-DD optical modules include 2xFR4(plus), 2xLR4, AOC, and AOC break-out series, which adopt LC or MPO optical ports and are compatible with IEEE802.3, OIF-CMIS, and

Models, specifications, and compatibility

Models, specifications, and compatibility QSFP28 optical transceiver modules provide a transmission rate of 100 Gbps. ... SR4 and SR2 are not supported for use over MMF OM1 or OM2 fiber. (The IEEE

100Gbps QSFP28 Optical Module

When the optical module is used for 80 km transmission, it must be interconnected with Huawei optical modules of the same model. When an optical module is installed on an interface, the FEC function

800G Optical Modules Explained: Standards, Types & Use Cases

We will explore the emergence, technical standards, packaging, types, and applications of 800G modules, and answer common questions to help you make informed decisions when selecting

800G Client Optics in the Data Center

The next key development is 800G, and the industry is already gearing up to deploy this next generation of client optics in hyperscale data centers. Developments in three distinct areas are needed for 800G

Pluggables, Power, and Geopolitics: Mapping the 800G and 1.6T Optical ...

Pluggables, Power, and Geopolitics: Mapping the 800G and 1.6T Optical Transceiver Battle How AI Demand Is Reshaping Market Share, Supply Chains, and Valuations.

Arista QDD-400G-DR4 Compatible 400GBASE-DR4 QSFP-DD 500m

Arista QSFP-100G-DR Compatible 100GBASE-DR QSFP28 Single Lambda 4x25G NRZ 1310nm 500m SMF DOM LC Duplex Optical Transceiver Module N6300-32C, 32-Port Ethernet L3 Data Center

AAOI Optical Transceiver 800G: High-Speed Data Solutions

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Find top AAOI optical transceiver 800G options for AI, HPC, and data centers. Explore low-latency, high-density, and verified suppliers. Click to discover reliable, future-ready connectivity for

400G, 800G, and Terabit Pluggable Optics:

Full range of 400G / 800G pluggable modules Copper cables Multimode Fiber – 100m Single Mode Fiber inside DC – 500m & 2km Single Mode Fiber Campus – 10 km

BRKOPT-2699

800G Optical Modules: QSFP-DD or OSFP 51.2T, 64 port, 800G in 2RU Stacked cages (two modules) Both above and below the linecard Showing two modules inserted into upper and lower ports in a

100G QSFP28 SR4 vs LR4 vs CWDM4: The Architect''s Selection Guide

Deep Dive: The Optical Physics of 100G QSFP28 Architectures The 100G QSFP28 SR4, LR4, and CWDM4 formats dictate physical-layer architectures utilizing parallel MMF, multiplexed

SFP vs SFP+ vs SFP28 vs QSFP+ vs QSFP28 vs QSFP-DD vs

To keep pace with the upcoming 800G optics, enhanced OSFP optics are being developed, focusing on improved signal integrity and thermal efficiency. Interestingly, OSFP can also

Optical Transceiver Module Wholesale,10g/25g/40g/100g SFP+ Optical ...

Fiber optic module manufacturer,ETU-Link supply full model optical transceivers,including standard 8g/10g/25g/40g/100g sfp+ optical modules and copper RJ45 transceiver,wholesale at factory price!

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

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