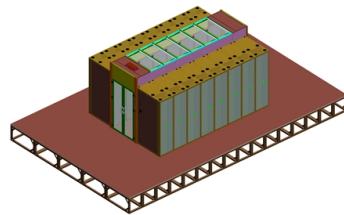


40G Fiber Optic Module Single Mode



AI Overview

Single-mode 40G fiber optic solutions, such as QSFP-40G-LR4, enable high-speed 40Gbps transmission over single-mode fiber for distances up to 10km, ideal for data center interconnects and enterprise backbone networks.

Overview Single-mode 40G fiber optic modules are high-speed optical transceivers designed to transmit and receive data at 40Gbps over a single strand of single-mode fiber. They typically operate at 1310nm using CWDM technology and are standardized under 40GBASE-LR4. These modules split the 40Gbps signal into four 10Gbps lanes, each carried on a different wavelength, which are multiplexed and demultiplexed inside the transceiver for efficient long-distance transmission.

Key Features

- Transmission Distance:** Up to 10km over standard single-mode fiber, making them suitable for medium-range backbone and interconnect applications.
- Connector Types:** Commonly use LC duplex or MPO connectors for easy integration into existing fiber infrastructure.
- Standards Compliance:** Fully compliant with IEEE 802.3ba, MSA, and other QSFP standards, ensuring interoperability across different vendors.
- Deployment Flexibility:** Single-mode 40G modules are more cost-effective and easier to deploy than ultra-long-reach options like 40G ER4, while exceeding the reach of multimode SR4 modules.
- Space and Cost Efficiency:** Using a single fiber strand reduces cabling complexity and saves rack space, which is critical in high-density data centers.

Applications

- Data Center Interconnects (DCI):** Connecting multiple data centers or high-performance computing clusters.
- Enterprise Backbone Networks:** Supporting high-speed aggregation and core layers.
- Service Provider Networks:** Aggregation and metro networks where multimode fiber cannot meet distance requirements.

Popular Modules

- QSFP-40G-LR4:** Supports 10km over single-mode fiber, LC duplex interface, CWDM at 1310nm, widely used for backbone and aggregation layers.

Cisco-Compatible Options: Third-party modules like FluxLight QSFP-40G-LR4-S-FL offer full...

Article Content

The Evolution of 400G, 800G, and 1.6T Optical Modules

Increasing the number of optical fiber pairs, such as SR4 with 4 pairs of multimode fibers transmitting 100G (25G per channel) □ Using Wavelength

Fiber Optic Cable

Fiber Cable Belden's extensive line of indoor and outdoor cable products is offered in tight buffer and loose tube designs. Armored, burial, and ruggedized designs

Single Mode Optical Modules: Growth & Key Trends to 2033

Analyze the Single Mode Optical Modules market driving demand from telecom and data centers. Projecting 16.2% CAGR to 2033. Access key market dynamics and strategic insights.

40G Optical Transceivers and Cables Portfolio | FS

The series of product adopts LC or MTP/MPO connector and operates over Single Mode or Multimode optical fiber. They can be used for connections from 150m up to 40km and are suitable for 40G

Startech Cisco SFP-10G-LR-40 Compatible SFP+ Module, 10GBASE

10 Gbps Single Mode Fiber LC 40 km (24.8 mi) Lifetime Warranty. The SFP-10G-LR-40-ST is a Cisco SFP-10G-LR-40 compatible fiber transceiver module that has been designed, programmed and

2025 Single-Mode vs Multimode Fiber: Distance, Cost

Choosing between single-mode (SMF/OS2) and multimode (MMF/OM3-OM5) fiber is more than a cabling preference, it determines your reachable distance, optics

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

SFP Optical Transceiver | SFP Optical Module | Perle

Multimode and single-mode fiber Gigabit Ethernet, Fast Ethernet, Fiber channel, ATM/SONET, SDH Hot-pluggable with durable metal enclosure Can be installed

40G QSFP+ Modules: Specs, Types & Selection Guide

A 40G QSFP+ (Quad Small Form-factor Pluggable Plus) module is a hot-pluggable optical or electrical transceiver that delivers 40 Gbps aggregate bandwidth using four parallel 10.3125 Gbps lanes.

Fiber Optical Transceiver Module Manufacturer,

10G Transceiver BIDI SFP+ designed for bi-directional 10G serial optical data communications. CWDM SFP+ operating at 1270-1610nm CWDM wavelengths

StarTech Arista Networks QSFP-40G-LR4 Compatible QSFP+ Module ...

Optical Transceivers StarTech Arista Networks QSFP-40G-LR4 Compatible QSFP+ Module, 40GBASE-LR4, 40GbE Single Mode (SMF) Fiber Optic Transceiver, 40GE Gigabit Ethernet QSFP+,

StarTech Dell EMC QSFP-40G-LR4 Compatible QSFP+ Module,

Optical Transceivers StarTech Dell EMC QSFP-40G-LR4 Compatible QSFP+ Module, 40GBASE-LR4, 40GbE Single Mode (SMF) Fiber SMF Optic Transceiver, 40GE Gigabit Ethernet QSFP+, LC

Hilink Optics QSFP QSPDD OSFP 10G SFP

If you have any questions about Hilink Optics CWDM DWDM QSFP QSPDD OSFP 10G SFP transceivers, we will give the professional solutions to you.

SpeedyFiber 12-Fiber MTP Male Single-Mode Loopback Module

The SpeedyFiber 12-Fiber Elite MTP Male Single-mode Fiber Loopback Test Module is a precision diagnostic instrument designed for testing, verifying, and troubleshooting MTP interface transceivers

Optic Modules Datasheet

4 Optic Modules Data Sheet ... SFP (form factor) = small form-factor pluggable transceiver SMF (media) = single-mode fiber-optic MMF (media) = multimode fiber-optic XFP (form factor) = 10-gigabit small

The Ultimate Guide to Fiber Optic Cables – Types, Standards, and ...

Discover how to choose the right fiber optic cables for your network. Learn about fiber types, cable constructions, connectors, and industry standards — plus expert recommendations from

40G/100G single-mode single-core optical fiber module application

In this article, we will discuss the application of 40G/100G single-mode single-core optical fiber modules, their advantages and limitations, and some considerations for their deployment.

40G Optical Transceivers and Cables Portfolio | FS

40G QSFP+ Transceiver Module Series include SR4, BIDI, CSR4, PIR4, LX4, IR4, LR4, PLR4 and ER4. The series of product adopts LC or MTP/MPO connector and operates over Single Mode or

POTN Network Architecture: Optical Modules, WDM & Cabling

Fiber type: single-mode fiber is the normal choice for metro, long-reach and backbone POTN routes. Connector format: LC is common for many duplex optical modules, while MPO may

Fiber Optic Transceiver 40G QSFP+ Single Mode Optic

40G QSFP optical modules can provide high-density and low-power 40G Ethernet high-speed interconnection for data centers, high-performance

Cisco 40GBASE QSFP Modules Data Sheet

The Cisco 40GBASE-LR4 QSFP module supports link lengths of up to 10 kilometers over a standard pair of G.652 single-mode fiber with duplex LC connectors. The 40 Gigabit Ethernet

How do You Connect Fiber Optic Cable to SFP?

Learn how to connect a fiber optic cable to an SFP module correctly. Follow our step-by-step guide, avoid common mistakes, and troubleshoot connection issues.

Fiber Optic Transceiver at | Transceiver Module in New Delhi | ID ...

A fiber optic transceiver is a hot-pluggable hardware module that converts electrical network data into light pulses (transmit) and incoming optical signals back into electrical data (receive). It bridges

QSFP 40G LR4 Transceiver: 10km Single-Mode Optical Solution

This guide focuses on how QSFP 40G LR4 works, where it fits best, how it compares to other 40G QSFP options, and how to choose the right module for your network, with an emphasis on

QSFP-40G-LR4: QSFP+ 40G LR4 Optical Module

The QSFP-4010-LR4 is a long range single-mode 40G QSFP+ optical module compatible with the 40GBase-LR4 specifications. It uses 4 CWDM 10G lasers

Contact Us

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