High-speed 10 Gigabit Single-mode Optical Module

Overview

The 10 Gigabit Singlemode SFP+ Transceivers provide high-performance, reliable connectivity for modern 10 Gigabit Ethernet (10GbE) networks.

Key Takeaways

Yes, 10 Gigabit single-mode optical modules are available, supporting distances up to 10 km and including both standard duplex and BiDi (single-fiber) options.

Standard Single-

Mode SFP+ Modules10GBASE-LR SFP+ modules are designed for single-mode fiber (SMF) and can support link distances up to 10 km using duplex LC connectors. These modules are compatible with major brands like Cisco, HP, and Brocade, and operate at high speeds up to 10. 31 Gbps while maintaining low power consumption.

They are suitable for both LAN and MAN networks, providing reliable long-distance connectivity over single-mode fiber.

Bi

Di (Bidirectional) Single-Mode Modules10G BiDi SFP+ modules allow full-duplex communication over a single fiber strand using Wavelength Division Multiplexing (WDM). This technology uses two different wavelengths to separate transmit and receive signals, effectively halving fiber usage while maintaining 10G speeds.

Bi

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Di modules typically support distances up to 10 km, integrate DFB lasers and PIN photodiodes, and are hot-swappable and standards-compliant with SFP+ MSA, CPRI, and eCPRI protocols. They are ideal for fiber-constrained environments or high-density deployments.

Key Features

Speed: Up to 10–11. 3 GbpsDistance: Up to 10 km on single-mode fiberConnector Type: Duplex LC for standard modules, simplex LC for BiDi modulesPower Consumption: Typically ≤1 WCompatibility: Works with a wide range of switches and NICs from major vendorsDeployment Benefits: BiDi modules reduce fiber usage, simplify cabling, and lower installation costs SummaryWhether you need traditional duplex 10G single-mode modules for standard long-distance links or BiDi modules for single-fiber full-duplex applications, there are multiple options available that support 10G speeds over single-mode fiber up to 10 km. These modules are widely used in enterprise, data center, and telecom networks to optimize fiber infrastructure and maintain high-speed connectivity.

Article Content

10G SFP+ Optical Transceivers | Transceiver Module

FS 10GbE SFP+ module solutions provide a wide variety of 10 Gigabit Ethernet connectivity options for data centers, enterprise wiring closets, Internet Service

Cisco 10GBASE SFP+ Modules Data Sheet

The Cisco® 10GBASE SFP+ modules (Figure 1) give you a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport

10 Gigabit Singlemode SFP+ Fiber Optic Transceivers

The 10 Gigabit Singlemode SFP+ Transceivers provide high-performance, reliable connectivity for modern 10 Gigabit Ethernet (10GbE) networks. These

optical transceiver sfp+ 10g single mode module

The 1310nm LC Interface 10G Singlemode Dual-fiber Optical Module is the workhorse of the modern network. It combines speed, distance, and reliability

SFP+ Single Mode LC Module (10km)

Each single mode 10G SFP+ transceiver is equipped with a duplex LC fiber connection interface, and supports high-speed data rates up to 10.31Gbps. All

Optical Transceiver SFP+ 10G Single-Mode Module 1310nm 10km LC

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10G SFP+ optical transceivers are compact, high-speed modules that enable seamless integration of fiber optics into switches and routers. Understanding their internal operation is critical

LINK-PP LS-SM3110-10C: Your Ultimate 10G SFP+ LR 10km Optical ...

The LINK-PP LS-SM3110-10C 10G SFP+ LR 10km optical module represents a perfect blend of performance, reliability, and value for demanding network applications requiring high-speed

10 Gigabit Fiber SFP+ Optical Transceiver Module

The Intellinet Network Solutions 10 Gigabit Fiber SFP+ Optical Transceiver Module (model 507479) is fully hot-pluggable, and that allows you to install the module

10G Bidirectional Single-Mode Optical Module

SFP+ transceiver that supports 10G connections up to 10 km using single-mode fiber with a simplex LC UPC connector.

SFP-10G-LR Compatible | 10GBASE-LR SFP+ Optical

Compliant with the 10GBASE-LR standard, this module provides high-speed data transmission up to 10 kilometers (6.2 miles) over Single Mode Fiber (SMF).

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Transceiver Types for High-Speed Networking

□□ Transceiver Types at a Glance – The Backbone of High-Speed Networking! □□⚡ As network infrastructures continue to evolve, selecting the right transceiver module is essential for ...

Ubiquiti 10G Single-Mode Optical Module UACC-OM-SM-10G-D-2

Feature2: Optimize the network''s performance with 10 Gigabit Ethernet connectivity Feature3: For transmitting data at gigabit speed over hundreds of miles with little integrity loss, single-mode fiber

How Fibre Optic Communication Works – Wray Castle

High-speed communication between racks uses 25G, 100G, and 400G optical links, with 800G deployments beginning. Single mode fiber handles inter-building connections, while multimode

Fibre Channel

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Fibre Channel typically runs on optical fiber cables within and between data centers, but can also run on copper cabling. Supported data rates include 1, 2, 4, 8, 16, 32, 64, and 128 gigabit per second

Optical Transceivers

Optical transceivers have revolutionized data transmission, providing high-speed, long-distance, and secure data transmission capabilities. Optical transceivers have enabled the development of high

How to choose the right optical module

Optical modules, as key components for achieving high-speed optical fiber communication, are being more widely applied in data centers, communication networks, cloud

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

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

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