

Article Overview

Cisco single-mode fiber SFP modules enable high-speed, long-distance optical connectivity, supporting 1Gbps to 10Gbps over single-mode fiber with various wavelengths and distances.

Overview

Cisco single-mode SFP (Small Form-Factor Pluggable) modules are optical transceivers designed to convert electrical signals from switches or routers into optical signals for transmission over single-mode fiber (SMF). They are ideal for long-distance, low-latency network connections in enterprise, data center, and telecom environments . These modules support hot-swappable operation, low power consumption, and Digital Diagnostics Monitoring (DDM) for real-time monitoring of temperature, voltage, and optical power .

Common Types and Specifications

o 1Gbps Single-Mode SFPs

- o 1000BASE-LX/LH: Operates up to 10 km over standard single-mode fiber; compatible with multimode fiber using a mode-conditioning patch cable .
- o 1000BASE-EX: Supports distances up to 40 km; may require a 5-dB inline optical attenuator for back-to-back connections .
- o 1000BASE-ZX: Extends up to approximately 70 km, with a 21 dB optical link budget; inline attenuators may be needed for shorter spans .
- o Wavelengths: Typically 1310 nm or 1550 nm, depending on the module and distance requirements .
- o Connector Type: SC single-fiber interface is common for 1.25 Gbps modules .

o 10Gbps Single-Mode SFP+ Modules

- o Designed for high-bandwidth, long-distance applications.
- o Support distances ranging from several kilometers to tens of kilometers depending on the model and wavelength.
- o Provide low signal loss, high reliability, and minimal latency, suitable for data centers and metro networks .
- o Include features like hot-swappable operation, low power consumption, and DDM for monitoring optical performance .

Deployment Considerations

- o Distance and Fiber Type: Single-mode fiber is preferred for long-distance links due to lower attenuation compared to multimode fiber .
- o Wavelength Selection: 1310 nm is common for medium distances, while 1550 nm is used for longer spans .
- o Attenuators: Inline optical attenuators may be required to prevent receiver overload on short single-mode links .



Cisco Single-Mode Fiber Module

o Compatibility: Cisco SFPs are compatible with Cisco switches and routers, and many modules also work with other brands like Ubiquiti, D-Link, and TP-Link when standards-compliant .

Key Benefits

- o Reliable long-distance transmission for enterprise and telecom networks.
- o Support for high-bandwidth applications such as virtualization, cloud services, and video streaming.
- o Simplified maintenance with plug-and-play installation and real-time monitoring.
- o Flexibility to upgrade network speeds without replacing existing fiber infrastructure. Cisco single-mode SFP modules are essential for high-speed, long-distance optical networking, providing scalable, reliable, and efficient connectivity for modern network infrastructures .

Discover high-performance single mode SFP modules for your network. Compatible with major brands like Cisco, Ubiquiti, and more.

WIDE COMPATIBILITY: Widely used for for Cisco, Meraki, Ubiquiti, Mikrotik, D-Link,

Learn how to identify single-mode and multimode SFP modules with our comprehensive guide. Explore SFP features,

With a maximum data transfer speed of 10.3125 Gbps, this Cisco single-mode SFP 10G module enterprise-grade application

Cisco Transceiver Modules - Learn product details such as features and benefits, as well as hardware and

These modules are specifically designed for single-mode fiber links, enabling reliable 10G connectivity across buildings, campuses,

The 1000BASE-ZX SFP operates on standard single-mode fiber-optic link spans of up to approximately 70 km in length. The SFP

1000BASE-EX SFP for long-reach single-mode fibers The 1000BASE-EX SFP operates on standard single-mode fiber-optic link

Cisco SFP-10G-LR Compatible SFP+ Module - 10GBASE-LR - 10GbE Single Mode Fiber SMF Optic Transceiver - 10GE Gigabit

This article provides technical data on Fiber Transceivers and stacking accessories compatible with Meraki devices.

Cisco Single-Mode Fiber Module

This installation note provides the installation instructions for the Cisco small form-factor pluggable (SFP) and SFP+

The Cisco 10GBASE-LRM Module supports link lengths of 220m on standard Fiber Distributed Data Interface (FDDI) grade

StarTech.com Cisco SFP-10G-LR-S Compatible SFP+ Module - 10GBASE-LR - 10GbE Single Mode Fiber Optic Transceiver -

The Cisco 10GBASE-ER Industrial Temperature Module supports a link length of up to 40

Explore Cisco 10GB Single Mode SFP modules, including types, specifications, parameters, and key features for reliable long

Yes, Cisco offers a 1000BASE-BX SFP module, which uses a single strand of single-mode fiber for bidirectional

Web: <https://www.kremgroup.co.za>

