



Where to plug in a gigabit single-mode optical module

Installing SFP and SFP+ Transceiver Modules

SFP transceiver modules can have three types of latching devices to secure an SFP transceiver module in a port socket: oFigure 4 shows an SFP trans...

Removing SFP and SFP+ Transceiver Modules

If you are removing an SFP or SFP+ transceiver module, follow these steps: Step 1 Attach an ESD-preventive wrist strap to your wrist and to the ESD...

Obtaining Documentation and Submitting A Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly What's New in Cisco...

Article Overview

To connect a gigabit single-mode optical module, insert the SFP into a compatible switch or router port, use single-mode fiber cables, and apply an inline attenuator if the link is short to prevent receiver saturation.

Step 1: Choose the Correct SFP Module

Select a single-mode SFP module compatible with your network device. Common types include:

- o 1000BASE-LX/LH: Up to 10 km over single-mode fiber, can work on multimode with a mode-conditioning patch cable .
- o 1000BASE-EX: Up to 40 km over single-mode fiber; may require a 5 dB inline attenuator for short links .
- o 1000BASE-ZX: Up to 70 km over single-mode fiber; may require a 10 dB inline attenuator for short distances . Ensure the SFP is hot-swappable and MSA-compliant for compatibility with your switch or router .

Step 2: Prepare the Fiber Optic Cable

Use single-mode fiber (SMF) with the correct connectors (LC or SC depending on the SFP). For bidirectional (BiDi) modules, ensure you pair the transmitter and receiver correctly, as each module transmits and receives on different wavelengths .

Step 3: Insert the SFP Module

- o Power on the switch or router.
- o Insert the SFP module into the SFP port until it clicks.
- o Connect the single-mode fiber cable to the module's transmitter (TX) and receiver (RX) ports, ensuring proper orientation.

Step 4: Apply Attenuators if Needed



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For short-distance links, the optical signal may be too strong, causing receiver saturation. Use inline attenuators according to the module type:

- o 1000LX (10-15 km): 5 dB
- o 1000XD (40-50 km): 15 dB
- o 1000ZX (70-80 km): 28 dB
- o 1000EX (100-120 km): 45 dB

Step 5: Test the Connection

- o Verify link status on the switch or router.
- o Check for optical power levels to ensure they are within the module's receiving range.
- o Avoid exceeding the maximum or minimum optical power to prevent light saturation or signal loss .

Step 6: Monitor and Maintain

- o Enable Digital Optical Monitoring (DOM) if supported to track optical power, temperature, and module status .
- o Periodically inspect fiber connectors for cleanliness and proper seating. By following these steps, you can establish a reliable 1 Gbps single-mode fiber link while preventing common issues such as receiver saturation or signal loss.

SFP ports enable Gigabit switches to connect to fibers and Ethernet cables in order to

Product Summary: TP-LINK Omada Gigabit SFP Module, 1000Base-SX Multi-Mode Fiber Mini GBIC Module, Plug and Play,

Moxa's small form-factor pluggable transceiver (SFP) Ethernet fiber modules for Gigabit Ethernet provide coverage across a wide

The operational wavelength of these modules extends from 850nm to 1550nm. For instance, an 850nm SFP module

Also known as a mini-Gigabit Interface Converter (GBIC), this industrial SFP module's metal housing offers increased durability while

TRENDnet's SFP Single Mode LC Module, model TEG-MGBS20, is compatible with standard SFP slots found on network switches

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The interface type of dual fiber optical module is duplex LC, and the optical fiber types are single-mode and multi

These transceiver modules are hot-swappable input/output (I/O) devices that plug into 100BASE, 1000BASE and

The single-port Cisco Gigabit Ethernet Network Module (part number NM-1GE) provides Gigabit Ethernet optical and

A: Single-mode optical modules are designed to transmit optical signals over long distances, typically using a single

Small Form-factor Pluggable Small Form-factor Pluggable connected to a pair of fiber-optic cables Small Form-factor Pluggable

Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-BXU1 must be used with SFP-10G-BXD1.

Correctly distinguishing single-mode and multi-mode optical modules is critical for matching fiber patch cords, ensuring

Single-Mode MiniGBIC module, Supports full-duplex Wave Length: 1310nm. Data Rate: 1.25Gbps. Port Type:

The 1000BASE-EX SFP operates on standard single-mode fiber-optic link spans of up to 40 km in length. A 5-dB inline optical

SFP ports on Gigabit switches provide a powerful combination of flexibility, scalability, and

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

