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Single-fiber optical module settings



Overview

Cisco SFP and SFP+ Transceiver Module Installation NotesThese transceiver modules are hot-swappable input/output (I/O) devices that plug into 100BASE, 1000.

Key Takeaways

Single-fiber optical modules require proper pairing, wavelength matching, and configuration for reliable simplex or BIDI operation.Module Pairing and Wavelengths

Single-fiber bidirectional (BIDI) modules transmit and receive on a single strand of fiber, but they must be used in complementary pairs. For example, an SFP-10G-BXD1 module must be paired with an SFP-10G-BXU1 module to ensure proper transmission and reception . Each module in the pair operates at different wavelengths (e.g., 1310 nm TX / 1490 nm RX) to avoid interference . Using mismatched modules or connecting a single-fiber BIDI module to a standard duplex module can reduce transmission distance or cause link failure .

Configuration Guidelines
• Port Matching: Ensure the SFP or SFP+ port on your switch or router supports the module type and wavelength .

• Connector Type: Use the correct connector (SC, LC, or APC) as specified by the module. For example, SC/APC connectors are common for single-mode simplex links .

• Operating Mode: Some optical link modules (OLMs) allow configuration of optical channels via DIL switches or software settings to adjust transmit power or channel mode .

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• Power Stabilization: When testing or commissioning, allow the optical source to stabilize for several minutes to avoid inaccurate loss readings .
Testing Single-Fiber Links

For simplex or single-fiber applications (e.g., CCTV, PON), configure your fiber tester to single-fiber mode. On devices like the CertiFiber Pro:

• Select Far End Source and OS2 Singlemode fiber type.

• Set Test Limit to General Fiber Optic or a custom loss limit.

• Choose the correct connector type (SC/APC).

• Power up the remote unit and allow the source to stabilize for at least five minutes.

• Run the test to measure optical loss; note that length measurement may not be reported in single-fiber mode .
Best Practices
• Always use certified modules from the manufacturer to ensure compatibility and reliability .

• Clean connectors before insertion to prevent signal loss or damage .

• Verify that the transmit and receive wavelengths match the paired module specifications.

• For long-distance links, check the module's maximum supported distance and adjust for any wavelength or sensitivity differences . By following these settings and procedures, single-fiber optical modules can be deployed effectively for simplex or BIDI applications, ensuring stable and reliable optical communication.

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Optical fiber connectors are categorized into single-mode and multimode types based on their distinct

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Small Form-factor Pluggable modules (SFP module) are the workhorses of modern network connectivity, enabling

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Once the transceiver and fiber optic cable are plugged in properly in the switch optical module, you should be able to view the current

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