

How to pair an SC optical module

Article Overview

SC optical modules must be paired with matching SC connectors and compatible SFP modules to ensure proper optical signal transmission.

Understanding SC Modules

SC (Subscriber Connector or Square Connector) modules are fiber optic transceivers that use a 2.5 mm ferrule with a push-pull locking mechanism for secure connections . They are widely used in enterprise networks, FTTH, and legacy systems, supporting both single-mode and multimode fibers . SC modules are designed for plug-and-play installation, making them user-friendly for network setups.

Pairing SC Modules

- o Connector Matching: Both ends of the fiber link must use SC connectors. Mismatched connectors (e.g., SC to LC) require adapters, which can introduce insertion loss and reduce signal quality .
- o Module Compatibility: Ensure the SFP modules are compatible in terms of data rate, wavelength, and fiber type. For example, the Solitine 1.25G SFP SC module supports 1.25 Gbps over single-mode fiber up to 20 km, using Tx 1310 nm and Rx 1550 nm wavelengths .
- o Duplex vs Single-Fiber: SC modules can be duplex (separate fibers for transmit and receive) or single-fiber bi-directional. Pairing must match the module type to avoid misalignment of Tx and Rx signals .
- o Polish Type: SC connectors come in UPC (blue) or APC (green) polish. Modules with APC connectors should only be paired with APC counterparts to maintain low return loss .
- o Fiber Mode: Match the fiber type (single-mode OS2 or multimode OM3/OM4) to the module specifications to prevent signal degradation .

Installation Tips

- o Clean connectors before insertion to avoid contamination that can increase insertion loss .
- o Check polarity for duplex connections to ensure Tx on one module aligns with Rx on the paired module.
- o Use proper patch cables: SC-SC jumpers or hybrid cords for connecting to other connector types.
- o Avoid excessive bending of fiber cables to maintain signal integrity.

Summary

To successfully pair SC optical modules, ensure connector type, fiber mode, polish type, and module specifications match on both ends. Proper pairing guarantees stable, high-performance optical communication and minimizes network issues caused by misalignment or incompatible modules .

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Not sure which fiber optic patch cable to buy? This practical guide breaks down FC, SC, ST, and LC connectors--with

It works with SC, LC, MU, MTRJ connectors. It has a square grabbing teeth and works with virtually all square and rectangular

Attach an MPO connector end into an MPO adapter by aligning the key on the connector body with the keyway in the adapter. Apply

In this video, Joe would display how to connect SC fiber optical connector in 2 minutes. Related

SC fiber connector guide: Learn types, uses, and how SC connectors improve network efficiency.

SC Connector The SC (Standard Connector, Subscriber Connector) is a fiber optic connector released by NTT in the

A SC/APC fiber optic adapter may look like a simple plastic block, but it has outsized impact on your network's optical

What Is an Optical Module and Its FAQs (V200) Describes what an optical module is and FAQs, including the fundamentals,

Learn about the differences between SC and LC fiber connectors in this comprehensive

Learn all about SC and ST fiber optic connectors, their differences, and other connector types in our guide to optical

Step-by-step instructions on how to install fiber optic connectors like LC, SC, and ST.

OVERVIEW This is an Industrial SFP optical module. It uses a single mode optical fiber and the speed rate can up to 1.25Gbps,

Fiber optic connector types explained: LC, SC, ST, MPO, MTP. Learn key differences for your network setup.

An SC cable, often referred to as an SC connector cable, is a type of fiber optic cable terminated with SC (Subscriber

This tutorial shows you the detailed step-by-step guide on on how to terminate an epoxy and polish SC connector onto 3mm jacketed

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There are many types of fiber optic connectors, including SC, LC, FC, ST, D4, MU, MT/MPO, etc. These connectors

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