

Single-mode single-fiber optical module SC



Overview

One Pair of 1.25G SFP WDM SC Bidi Transceiver WHAT WE PROVIDE: One pair of 1.25G WDM SC SFP 1.25G SFP Module, Single Mode SC, TX1550nm, DDM 10KM This optic.

Key Takeaways

Single-mode single-fiber optical modules (BiDi transceivers) enable full-duplex communication over a single optical fiber using different wavelengths for transmitting and receiving, ideal for long-distance, high-speed networks. OverviewSingle-mode single-fiber optical modules, often called bidirectional (BiDi) transceivers, are designed to transmit and receive data over a single strand of single-mode fiber (SMF). Unlike dual-fiber modules that use separate fibers for transmitting (TX) and receiving (RX), single-fiber modules use Wavelength Division Multiplexing (WDM) to carry upstream and downstream signals simultaneously on the same fiber.

This approach reduces fiber usage, lowers deployment costs, and simplifies cabling in environments with limited fiber availability.

Technical Characteristics

Fiber Type: Single-mode fiber with a narrow core ($\sim 9 \mu\text{m}$) and $125 \mu\text{m}$ cladding, optimized for long-distance transmission. Wavelengths: Typically, one wavelength is used for TX and a complementary wavelength for RX (e.g., 1271 nm for TX and 1331 nm for RX),. Transmission Distance: Supports long-range communication, often from 2 km up to 120 km depending on module type and network design.

Speeds and Form Factors: Available in various transceiver types such as SFP, SFP+, SFP28, QSFP, QSFP28, QSFP-DD, and OSFP, supporting speeds from 1 Gbit/s to 800 Gbit/s. **Interface:** Commonly uses LC connectors for single-fiber connections.

Advantages

Fiber Efficiency: Doubles the capacity of a single fiber by enabling bidirectional communication. **Cost Savings:** Reduces CAPEX and OPEX by minimizing fiber procurement, trenching, and maintenance. **Space Optimization:** Lower cable density and simpler patching in data centers or metro networks.

Long-

Distance Capability: Single-mode fiber allows high-speed transmission over long distances with minimal signal loss. **Applications** Single-mode single-fiber modules are widely used in: **Data Centers:** High-density connections and backbone links. **Metro and Campus Networks:** Where fiber availability is limited.

FTT

H (Fiber to the Home): Efficient deployment in residential or enterprise environments. **5G Fronthaul/Midhaul:** Networks requiring high-speed, long-distance links with constrained fiber infrastructure.

Deployment Considerations

Ensure wavelength pairing compatibility between transceivers at both ends of the fiber. Verify power budget and link loss to maintain signal integrity. Use the correct connector type (typically LC) and ensure proper fiber alignment.

Single-fiber modules are not the same as single lambda; single lambda refers to single-wavelength 100G implementations, while single-fiber refers to the physical fiber topology. Single-mode single-fiber optical modules provide a flexible, cost-effective, and high-performance solution for modern optical networks, particularly where fiber resources are limited and long-distance, high-speed communication is required.

Article Content

1.25G SFP Module, Single Mode SC, TX1550nm, DDM 10KM

This optical module offers a reliable and durable solution for professional installations. Designed for fiber optic technicians and demanding network environments.

SFP BiDi 1000BASE-BX 1.25Gbps

The 1G SFP BiDi optical module is designed for data transmission using a single single-mode (SM) fiber. It transmits data at speeds of up to 1.25 Gbps, over

Introduction Of 100M Single-mode SFP BIDI SC

In this blog, ETU-LINK will focus on introducing the type and transmission distance of the 100M single-mode SFP BIDI SC connector optical

1 Pair simplex SC Module 3KM, 1.25G Single-Mode Fiber ...

Fiber/Cable Type: Single-Mode Fiber (SMF) Plug and play, supports hot swap, provides high performance, low power consumption, ensures stable and fast signal propagation

1.25G SC SFP Module Optical Module 20Km

This 1.25G SC SFP Module is a high-performance 1.25G SFP fiber module designed for 20km bidirectional data transmission over single-mode fiber (SMF).

CCH Pigtailed Splice Cassette 12 F, SC APC simplex, Single-mode

They are preloaded and prerouted for quick fusion splicing of either individual or ribbon fiber pigtails, using the same space-saving platform as the standard CCH splice cassette.

Datasheet Archive: SFP MODULE FIBER OPTIC SC 1.25GBPS

View results and find sfp module fiber optic sc 1.25gbps single mode single core fiber sfp optical mod datasheets and circuit and application notes in pdf format.

SC SFP - Optcore

Optcore offers a wide range of SC SFP BiDi modules at a great price. These bidirectional modules can transmit and receive signals using WDM technology

XGSPON ONU SFP+ 1270nm-TX/1577nm-RX 9.953G-TX/9.953G-RX

This allows the module to handle bidirectional data transmission over a single-mode optical fiber, enabling 9.953 Gbps symmetric upstream and downstream data rates for distances up to 20km.

Gigabit single-mode single-core fiber optic module

Gigabit single-mode single-core optical fiber modules usually have the following specifications: multi-mode 550m, single-mode 15km, 40km, 80km, 120km, etc. In addition to the

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1G Bidirectional Single-Mode Optical Module

SFP transceiver that supports 1G connections up to 3 km using single-mode fiber with a simplex LC UPC connector.

SC/APC single mode fiber optic socket | BTicino International

SC/APC single mode fiber optic socket - For connecting 2 fibres to the workstation - Equipped with 1 duplex adaptor. Supplied with protective caps - 2 modules - white

Meaning of Optical Module Pull Tap Colors

Basic Color Identification for Single-Mode and Multi-Mode Fiber Optics ① Multimode fiber optic module: The pull tap is black, corresponding to a wavelength of 850nm, suitable for short

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Optical Transceiver Market Insights and Growth Report 2026

A single-mode fiber transceiver is a self-contained optical transceiver module that can receive and send data over single-mode optical fiber cables that enable signal transmission at extremely large

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