

Single-mode module optical interface module



Article Overview

Single-mode optical modules typically use LC connectors and SFP/SFP+ form-factor interfaces for long-distance fiber communication.

Overview

A single-mode optical module is designed to transmit and receive data over single-mode fiber (SMF), which has a narrow core of approximately $9\mu\text{m}$, allowing light to travel in a single, straight path for long-distance, high-speed communication. These modules convert electrical signals from network devices into optical signals and vice versa, supporting data rates from 1 Gbps up to 400 Gbps depending on the module type.

Common Interfaces

- **Form Factor:** Most single-mode modules use SFP (Small Form-factor Pluggable), SFP+, or QSFP interfaces, which are hot-swappable and compatible with switches, routers, and media converters.
- **Connector Type:** The standard connector for single-mode modules is the LC (Lucent Connector), which is compact and widely supported. Some older or specialized modules may use SC connectors, but LC is the most common for modern deployments.
- **Fiber Configuration:** Single-mode modules can be dual-fiber (separate fibers for transmit and receive) or single-fiber bidirectional (BiDi), which uses two wavelengths...

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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.

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Single Mode SFP Fiber Module

Single Mode SFP Fiber Module is a cost effective way to connect a single network device to a wide variety of fiber cable distances

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Multi-mode optical fiber

Applications The equipment used for communications over multi-mode optical fiber is less expensive than that for single-mode

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5 Pairs 10G BIDI SFP+ Single Mode Fiber Module Network ...

5 Pairs 10G BIDI SFP+ Single Mode Fiber Module Network Transceiver, LR SM 1270nm 1330nm 10km, Simplex LC

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Industrial GbE Fiber SFP Optical Transceiver Module Single-Mode 40

Industrial Gigabit Fiber SFP Optical Transceiver Module, 1000Base-EX (LC) Single-Mode Port, 40 km (25 mi.), Wavelength 1550 nm,

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Cisco Digital CFP2-DCO Coherent Optical Module Data Sheet

Cisco offers a comprehensive range of pluggable optical modules in the Cisco ONS pluggables portfolio. The wide

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Single Mode Fiber: Types and Applications

Single mode fiber (SMF) is a type of fiber optic cable that only allows one light mode to transmit at a time. Generally,

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Everything About Single Mode Switches | Versitron

Optical switches, whether single mode or multimode have a wide range of visible spectrum, and are highly reliable in terms of

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Optical Transceiver SFP+ 10G Single-Mode Module 1310nm 10km LC

An SFP+ 10G single-mode module is a hot-pluggable optical transceiver that converts electrical signals from a switch

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Differences Between Single-mode & Multimode Fiber Optic ...

According to different transceiver models, optical modules can be divided into single-mode fiber optic transceivers

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SFP Single Mode LC Module (20km)

TRENDnet's single mode fiber SFP, model TEG-MGBS20, features a duplex LC fiber interface, supporting high-speed data rates for

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What Is an Optical Module and Its FAQs (V200)

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

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Module with Separable Single-Mode Expanded-Beam Optical Interface

Please take our survey. Phase 2 of the Module with Separable Single-Mode Expanded-Beam Optical Interface for Edge-Coupled PIC

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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

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The Ultimate Guide to SFP Modules (2026): Types, Speeds

Confused by SFP vs SFP+? Read the definitive 2026 guide on SFP modules. We explain Single Mode vs Multimode, DDM

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OREI 1G SFP Single-Mode Optical Module (1000BASE-EX, 1310nm,

Operating at a 1310nm wavelength, this SFP module supports transmission distances up to 40km over single-mode fiber cabling.

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100 G Single Mode Optical Connectivity

Description The Intel® Silicon Photonics 100G LR4 10km Reach QSFP28 Optical Transceiver is a small form-factor, high speed, and

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SFP+ Single Mode LC Module (10km)

TRENDnet's SFP+ Single Mode LC Modules are compatible with standard SFP+ slots found on network switches and fiber

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The difference between single-mode and multi-mode in optical modules

The optical module (optical module) is composed of optoelectronic devices, functional circuits and optical interfaces.

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Fiber optical module and common knowledge of optical interfaces

In addition to the different types of optical interfaces, there are also different types of fiber optic connectors, including

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[Product Hub] Single Mode SFP Transceiver | Optcore

High-performance single mode SFP transceivers for long-distance networking applications. Find the perfect SFP module for your

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Understanding Single-mode and Multi-mode SFP Optical Modules

Any SFP single-mode optical modules and SFP multi-mode optical modules are incompatible. If you mix SFP single-mode optical

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Single Mode vs. Multimode Fiber: Core Differences and Selection Guide

How do you choose between single mode and multimode fiber? Compare their differences in core size, light source,

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Huawei eKitEngine Optical Module Datasheet

modules gives you flexible and plug-and-play options for all types of interfaces. These compact optical

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Cisco Transceiver Modules

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

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The Difference Between Single-mode and Multi-mode Optical Modules

When using single-mode optical modules, you need to pay attention to the cleanliness of the optical fiber interface to avoid dust and

Contact Us

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