

Single-mode optical module interface type



Article Overview

Single-mode optical modules typically use LC connectors and operate over a 9 μm core fiber at 1310 nm or 1550 nm wavelengths for long-distance transmission.

Fiber and Core Characteristics

Single-mode optical modules are designed for long-distance, high-speed communication. They use a narrow fiber core of about 9 μm with a 125 μm cladding, allowing light to travel in a single mode with minimal dispersion and attenuation . This enables transmission distances ranging from 2 km up to 120 km, depending on the module type and wavelength . Common wavelength standards include 1310 nm and 1550 nm, with some modules supporting CWDM or DWDM wavelengths for extended reach .

Connector Types

The physical interface of single-mode modules is most commonly the LC connector, which is compact and supports high-density deployments . Legacy networks may use SC connectors, while MPO/MTP connectors are reserved for high-density backbone applications . The connector type determines how the fiber physically couples with the transceiver and affects patch cable selection, insertion loss, and network scalability.

Module Form Factors...

Article Content

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

A single-mode fiber transceiver is a type of optical transceiver module, which is a self-contained component that can

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How to distinguish the common interfaces of optical module?

The SFP series is the most widely used package type. SFP are approximately 13.4mm × 56.5mm in size and use a

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Single-mode Fibers

Single-mode fibers support only one guided mode per polarization direction, ensuring consistent output beam profile and are vital in

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Single-mode optical fiber

Waves can have the same mode but have different frequencies. This is the case in single-mode fibers,

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Fibre optic connector systems | singlemode and multimode

Fibre optic connector systems for almost every aspect of fibre optic cabling. Standard, individual and robust connectors.

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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

Aug 08, 2025

How Many Fiber Connector Types Do You Know?

Single-Fiber Connectors Single-fiber connectors here refer to connector types designed to terminate and connect one

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What is an optical module? Optical module wiki

This post focus on optical module wiki & types, Single Mode vs. Multimode Optical Modules: How Do You Choose? 3rd

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SFP Modules: Types, Selection Guide & Applications

An SFP module is a compact, hot-swappable optical transceiver designed to facilitate data transmission between

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Optical fiber connector

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

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SFP Fiber Optic Connector Types: LC, SC, MPO Explained

Explore common SFP fiber optic connector types, including LC, SC, and MPO/MTP. Learn their differences, use cases, and

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Single-Mode vs Multimode SFP Identification: 2026 Protocol

Identifying Single-Mode (SMF) vs. Multimode (MMF) SFP modules involves a cross-referencing protocol of physical

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SFP Fiber Optic Connector Types: LC, SC, MPO Explained

Connector types do not inherently differ between single-mode and multimode SFP modules—the same connector can be used for

Dec 10, 2025

How to Tell if My SFP is Single-Mode or Multimode?

Discover how to identify if your SFP (Small Form-factor Pluggable) module is single-mode or multimode. Look for SM

Jan 12, 2026

SFP Module Types: Single-Mode vs Multimode SFP

Single-mode and multimode SFP are two SFP module types that will work on different fiber types. This post focuses

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What Are The Types Of Gigabit Optical Modules

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

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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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SFP Module: What's It and How to Choose It?

such as switches, NIC (network interface card), and media converters. It makes SFP module necessary in fiber 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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Key Differences Between Single-Mode and Multimode Optical Modules

Compare single-mode and multimode optical modules by core size, distance, speed, and cost. Choose the right

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Single-Mode Optical Fiber

The properties of LP 01 mode were measured with a standard single-mode fiber spliced to the ends, and the properties of LP 11

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Optical Access Architecture Reference Document: Single-Mode vs

deployment of optical fiber infrastructure within carrier-grade and enterprise analysis of Single-Mode Fiber (SMF) and Multi-Mode

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Single-mode vs. Multimode Transceivers: How Do You Choose?

Whether you're considering singlemode or multimode, it's important to note that, although with similar form factors

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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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Understanding Single-mode and Multi-mode SFP Optical Modules

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

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The Difference Between Single/Dual Fiber and Single/Multi-Mode Optical ...

As fiber optic networks continue to evolve, selecting the right optical transceiver becomes increasingly important.

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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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Comprehensive Guide to Optical Transceiver Classifications and Common Types

Introduction Optical modules are critical components in fiber optic communications, enabling the conversion between

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Single Mode and Multimode Fiber: What's the Difference?

Learn more about Single Mode and Multimode Optical Fibers - their design, key differences, and intended fiber optic systems

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

SFP (Small Form-factor Pluggable) is a compact, hot-pluggable network interface module used to connect network devices

Jul 12, 2026

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,

Mar 03, 2026

What is the difference between multimode and singlemode fibre optic ...

What is the difference between multimode and singlemode fibre optic cable? This article explains the differences between Multi

Contact Us

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