

Single-mode fiber optic SFP interface



Article Overview

A single-mode fiber optic SFP (Small Form-factor Pluggable) interface is a hot-swappable optical transceiver designed for long-distance, high-speed data transmission over single-mode fiber.

Overview

A single-mode SFP transceiver converts electrical signals from network devices into optical signals for transmission over single-mode fiber (SMF) and vice versa, enabling long-distance communication with minimal signal loss. These modules are widely used in switches, routers, servers, and media converters for Ethernet, Fibre Channel, and telecom applications.

Key Specifications

- Fiber Type: Single-mode fiber with a 9 μm core and 125 μm cladding.
- Wavelengths: Typically 1310 nm or 1550 nm; some modules support CWDM/DWDM wavelengths for extended reach.
- Link Distances: Depending on the module type, distances range from 2 km to over 80 km. Common standards include:
 - 1000BASE-LX: up to 10 km
 - 1000BASE-EX: up to 40 km
 - 1000BASE-ZX: up to 70-80 km
- Interface: LC connector is standard for single-mode SFPs.
- Hot-Swappable: Can be inserted or removed without powering down the device

Article Content

SFP Optical Modules: The Essential Bridge in Modern Communication

The SFP, short for "Small Form-factor Pluggable," is an interchangeable optical fiber communication interface standard

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

What Is A Single-Fiber BiDi Transceiver?--ETU-LINK

When planning a fiber optic network, one key decision is choosing between single-fiber (BiDi) and dual-fiber optical transceivers. This

Understanding Single-mode and Multi-mode SFP Optical Modules

Understanding Single-mode and Multi-mode SFP Optical Modules Abstract: Small Form-factor Pluggable (SFP) optical modules are

What is SFP Module? An Ultimate Guide (2024)

An SFP module is a small, pluggable optical transceiver that fits into the SFP port of a networking switch or other

Single-mode vs Multimode SFP: What's the Difference?

Discover the differences between single-mode and multimode SFP transceivers. Learn which one suits your network

What Is a Single Fiber SFP? A Complete Guide for Beginners

Learn what a single fiber SFP is, how it works, key differences from dual fiber SFPs, common applications, and how to choose the

SFP Optical Transceiver | SFP Optical Module | Perle

Perle SFP Optical Transceivers are hot-swappable, compact media connectors that provide instant fiber connectivity for your

1G SFP Modules: A Deep Dive into Specs & Types

In addition, MMF has a larger core size, allowing for better alignment of the optics when connecting the transceivers into the

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

FC connectors are primarily found in older single-mode fiber networks and precision optical applications, not in modern SFP

Cisco SFP Modules for Gigabit Ethernet Applications

The 1000BASE-ZX SFP operates on standard single-mode fiber-optic link spans of up to approximately 70 km in length. The SFP

What Is an SFP Module? Types, Uses & Compatibility (2025)

Learn what an SFP module is, how SFP transceivers work, common types (SX/LX/SFP+), single-mode vs multimode, and how to

Differences Between Dual Fiber SFP and Simplex SFP Modules

Dual fiber SFP and simplex SFP modules are two different SFP types, and understanding their differences is crucial for making

Selecting the Right SFP Module for Single-Mode and Multimode Fiber

Using the wrong SFP can result in signal degradation, reduced performance, or costly network disruptions. The most

2025 How to Identify Single-Mode vs. Multimode SFP Modules for

Learn how to identify single-mode and multimode SFP modules with our comprehensive guide. Explore SFP features,

Single Mode Fiber SFP – 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

1000BASE-SX, 1000BASE-LX, 1000BASE-ZX& BX SFP: A Simple

1000BASE-LX SFP is a gigabit Ethernet standard over fiber optics for long reach. It operates on single-mode fiber

Single Mode SFP Transceiver: Complete Guide Explained

Learn what a single mode SFP transceiver is, how it works, key specs, common types, and real-world use cases for long-distance

Single-mode vs Multimode SFP: What's the Difference?

Single-mode SFP and multimode SFP are the two main types of hot-pluggable optical transceivers used in fiber optic

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

Understanding SFP Port: A Guide to Gigabit Ethernet

Single-mode fiber optic cables are ideal for longer distances, while multimode fiber optic

Understanding Fiber Optics – Your Quick Guide to SFP Transceivers

Let's explore them in detail Single Mode vs. Multimode SFP Transceivers Based on the types of optical fibers SFP transceivers

SFP Gigabit Transceivers Singlemode Single-Strand BiDi

Discover SFP Gigabit single-strand BiDi modules for 20Km with SC connector. Cisco compatible - buy now for efficient fiber links!

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