

Preferred Single-Fiber Optic Modules



AI Overview

Single-fiber SFP modules, including BiDi transceivers, offer reliable, high-performance optical connectivity for enterprise, data center, and telecom networks. Overview of Single-Fiber SFP Modules

Single-fiber SFP modules, often referred to as BiDi (Bidirectional) SFPs, allow both transmit and receive signals to travel over a single optical fiber, reducing cabling requirements and enabling cost-efficient deployments in FTTH, metro, and data center networks (Smartoptics). These modules are compact, hot-swappable, and compatible with standard SFP ports, supporting a wide range of protocols including Fast Ethernet, Gigabit Ethernet, and Fibre Channel.

Key Features

- Transmission Medium:** Single-mode fiber (SMF) is typically used for long-distance links, while multimode fiber (MMF) is suitable for shorter distances.
- Data Rates:** Modules support speeds from 1G to multi-rate options up to 2.7G, covering Ethernet, SDH/SONET, and Fibre Channel standards.
- Wavelengths:** BiDi SFPs use paired wavelengths (e.g., 1310/1490 nm) to enable bidirectional communication over a single fiber.
- Distance:** Depending on the module, transmission distances range from 100 meters to over 120 km.
- Low Power and Noise Resistance:** Single-fiber SFPs are designed for low power consumption and high resistance to electromagnetic interference, ensuring stable performance in noisy environments.

Reputable Manufacturers

Several manufacturers are recognized for producing high-quality single-fiber SFP modules:

- Smartoptics:** Offers BiDi SFPs for FTTH and enterprise networks, supporting multiple protocols and ensuring high compatibility and efficiency.
- FS (Fiberstore):** Provides 1/2/4G SFP transceivers with extensive distance coverage and trusted by over 260,000 enterprise users.
- DigiKey:** Stocks a wide range of SFP modules with detailed specifications, enabling same-day shipping and reliable sourcing.
- Other Top Vendors:** Accio and Metoree list leading SFP manufacturers with modules suitable for single-mode and multimode fiber, including extended-range an...

Article Content

Comprehensive Guide to FS 10G BiDi SFP Modules

FS offers a comprehensive range of 10G BiDi modules tailored for diverse scenarios. As data center operators and telecom providers shift toward high-density and energy-efficient networks,

Wholesale Optical Transceivers Module | 100G QSFP28, 40G QSFP

Shop high-speed optical transceivers from Unitekfiber. We offer 100% compatible 40G, 100G, and 400G QSFP-DD modules for data centers. Expert technical support & wholesale pricing.

How to Choose the Right Fiber Optic Cable for Your Optical

How to Choose the Right Fiber Optic Cable for Your Optical Transceiver Selecting the right optical transceiver is only half of building a reliable fiber network. Many network failures that appear

Ubiquiti 10 Gbps Bidirectional Single-Mode Optical Module

Ubiquiti 10 Gbps Bidirectional Single-Mode Optical Module Single-mode, simplex, fiber transceiver module. The 10 Gbps Bidirectional Single-mode Optical Module is a simplex transceiver that delivers

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 diagnostics, and how to choose the right transceiver for Cisco, Juniper, and more.

SFP Optical Transceiver | SFP Optical Module | Perle

Perle SFP Optical Transceivers are hot-swappable, compact media connectors that provide instant fiber connectivity for your networking gear. They are a cost effective way to connect a single network

Catalog :: AV Distribution & Switching :: Extenders :: Fiber Optic ...

SFP1-SM-D is a fiber optic transceiver using 1310nm single-mode signals. These standard pluggable SFP optical modules have two LC connectors for reception and transmission over two strands of

Understanding Single-mode and Multi-mode Optical Modules and Optical ...

Conclusion: In conclusion, single-mode and multi-mode optical modules and fibers serve distinct purposes in sfp optical module communication, offering compatibility with different transmission

How to Choose SFP Module for Compatibility, Speed, and Distance

Learn how to choose the right SFP module based on compatibility, speed, fiber type, wavelength, and distance. Practical guide for engineers and IT buyers.

100G Single-Fiber Optical Modules: The Ultimate Guide to Selection

Unlike traditional dual-fiber modules that require two separate fibers for transmission and reception, it achieves 100Gbps bidirectional data transmission by loading optical signals of different

Ubiquiti 10G Single-Mode Optical Module UACC-OM-SM-10G-D-2

Ubiquiti 10G Single-Mode Optical Module SFP+ transceiver that supports 10G connections up to 10 km using single-mode fiber with a duplex LC UPC connector. Max data rate: 10 Gbps Compatible with

Which Optical Module Should You Choose: Single-Fiber or Dual

When designing or upgrading a fiber network, one key decision is whether to use dual-fiber or single-fiber (BiDi) optical modules.

Cisco 10GBASE SFP+ Modules Data Sheet

The Cisco® 10GBASE SFP+ modules (Figure 1) give you a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport

Calculating Fiber Optic Loss Budget

Type of fiber – Most single mode fibers have a loss factor of between 0.25 (@ 1550nm) and 0.35 (@ 1310nm) dB/km. Multimode fibers have a loss factor of about 2.5 (@ 850nm) and 0.8 (@ 1300nm)

Single-mode Fibers – Buyer's Guide & Supplier List | RP Photonics

This buyer's guide for single-mode fibers provides technical background, comparison of major types, selection criteria, and an overview of suppliers.

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

Learn how to select the right SFP module for single-mode and multimode fiber by understanding wavelength, distance, compatibility, and industrial network requirements.

HTF DWDM equipment, OTN Solution, QSFP28 OSFP

HTFuture offers industry-leading fiber optic products and WDM system solutions with global recognition for excellence and innovation.

Single-mode optical fiber

There are a number of special types of single-mode optical fiber which have been chemically or physically altered to give special properties, such as dispersion

How to choose the right SFP module ?

Discover how to choose the right SFP module for your fiber optic network in 5 key steps: compatibility, environment, fiber type, wavelength, and data rate.

Optical Modules Market Research Report 2034

The optical modules market was valued at \$14.8 billion in 2025 and is projected to reach \$39.6 billion by 2034, growing at a CAGR of 11.5%.

BiDi SFP: The Complete Guide to Bidirectional SFP Transceivers and ...

BiDi SFP (Bidirectional Small Form-Factor Pluggable) transceivers have emerged as a powerful solution, enabling full-duplex communication over a single optical fiber. By using

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

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 guide from ETU-Link explains their differences, advantages, and how to

4X SFP Optical Module Gigabit Single-Mode Optical Module SFP-GE

4X SFP Optical Module Gigabit Single-Mode Optical Module SFP-GE-LX-SM1310 20KM Dual Fiber 1.25G for H3C

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.

Contact Us

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