

Dual Fiber Single Module



Article Overview

A dual-fiber module is an optical transceiver with two ports, using separate fibers for transmitting (TX) and receiving (RX) data, ideal for high-bandwidth, long-distance network connections.

Overview

A dual-fiber optical module (also called a two-fiber SFP module) uses two separate fibers: one for transmitting data (TX) and one for receiving data (RX) over a single link . This configuration aligns with standard network designs and is commonly deployed in long-distance backbone networks, data centers, and enterprise networks where fiber availability is sufficient . Dual-fiber modules typically feature a duplex LC interface with two ports, providing stable, low-interference communication and supporting higher bandwidth .

Comparison with Single-Fiber Modules

Unlike dual-fiber modules, single-fiber modules (also called BiDi or WDM modules) transmit and receive data over one fiber using different wavelengths for bidirectional communication . This reduces fiber usage and infrastructure costs but requires matched wavelength pairs at each end of the link (e.g., TX1310/RX1550 and TX1550/RX1310), . Single-fiber modules are ideal for environments with limited fiber availability or where minimizing cable clutter is important .

Feature	Dual-Fiber Module	Single-Fiber (BiDi) Module
Fiber usage	Two fibers (TX and RX)	One fiber (bidirectional via WDM)
Ports	Duplex LC (two ports)	Simplex LC (single port)
Wavelength	Single wavelength per fiber	Two distinct wavelengths per fiber
Cost	L...	L...

Article Content

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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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fiber optic cable multimode versus singlemode duplex vs simplex

Workstations, fiber switches and servers, fiber modems, and similar hardware require duplex cable. Duplex fiber is available in

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Single-fiber Transceiver & Dual-fiber Transceiver

The single-fiber optical module uses WDM technology to achieve bidirectional transmission in a single optical fiber, improving fiber

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Single Fibre vs Dual Fibre Transceivers: Which One to Choose

The difference between single and dual fibre optic transceivers Introduction to fibre optic transceivers There are two

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Single Mode vs. Multimode Fiber Optic Cables

There are two main types of fiber optic cables: single mode and multimode. Although they can do the same job in

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The difference between SFP dual fiber and BIDI, the difference between ...

3.Different prices The price of a single fiber optical module is higher than that of a dual fiber optical module. The

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Dual Fiber to Single Fiber Converter

GEZHI Photonics supply Passive Dual-port to Single-port Fiber converter for bidirectional transmission of

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Differences Between Dual Fiber SFP and Simplex SFP Modules

Dual fiber SFP modules are the commonly used 1G SFP module type. They operate on a bidirectional transmission mechanism and

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The Key Differences Between 1-core, 2-core, Single

o In optical modules, "core" refers to the light-transmitting channel in the fiber. A 1-core

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Dual Fiber SFP Module vs Single Fiber SFP Module

Single fiber SFP module and dual fiber SFP module are two common SFP module types,

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Single Fiber vs Dual Fiber in WDM Systems: Which Architecture Is

Discover the key differences between single fiber and dual fiber WDM architectures. Learn which setup is ideal for your

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Simplex vs Duplex Fiber Cable: Key Differences and How to Choose

The first step is to determine whether the optical transceiver is designed for single-fiber or dual-fiber transmission. If the

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The Difference Between Single/Dual Fiber and

Whether you're designing a short-range data center network or a long-distance metro

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What is the Difference Between Single Fiber and Dual Fiber SFP ...

Additionally, fewer fibers mean that there is less likelihood of encountering cable management issues, which can

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What is the difference between a single-fiber optical module and a dual ...

1, the appearance of the use: single-fiber optical module only a fiber interface to connect a fiber patch cord, dual-fiber

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Single vs Dual Fiber Media Converters (2025): A/B Pairing and WDM

Introduction Fiber media converters quietly solve a big, practical problem: they bridge copper Ethernet to fiber and extend links far

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100G Optical Module: Single Fiber vs. Dual Fiber

Dual-fiber Module: It has two independent fiber optic interfaces, one for transmitting and the other for receiving optical

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What is the difference between single fiber and dual fiber optical modules?

In recent years, with the rapid development of networks, optical modules have become an essential part of fiber optic

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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)

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The difference between single and dual fiber optical transceiver

The advantages of dual fiber module: The both ends module don't need to be used in pairs, any 2 can be connected. It's cheaper

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

Single fiber module also called BiDi transceiver or WDM module. It uses WDM technology to realize the bidirectional transmission of

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Single vs. Dual Fiber: How to Choose the Right Cable for Your Network

Choosing the right fiber optic cable is essential for optimizing your network setup. In this

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Choosing the Right SFP: Single Fiber vs Dual Fiber

Choosing between single and dual fiber SFP modules is not about which one is better overall, but which one is better

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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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Single vs. Dual Fiber Networks

Compare single fiber vs dual fiber networks for utility deployments. Learn cost, performance, scalability, and last-mile

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Comprehensive Guide to FS 10G BiDi SFP Modules

10G BiDi SFP+ modules utilize a unique optical mechanism that enables full-duplex data transmission over a single

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Single Fiber vs Dual Fiber: How to Choose the Right WDM Architecture

When selecting equipment, choose the appropriate modules based on whether the system is single-fiber or dual-fiber.

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Single-mode vs Multimode SFP 2026: Fiber Types and

A guide to single-mode vs multimode SFP modules. Covers fiber types, wavelengths, distances, BiDi,

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Single Mode vs Multimode Fiber, What is The Difference?

Learn the key differences between single mode vs multimode fiber cables and choose the right one for your fiber optic

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