

Single-fiber bidirectional optical module model description



Article Overview

Single-fiber bidirectional (BiDi) optical modules enable full-duplex communication over a single fiber strand using wavelength division multiplexing (WDM), reducing fiber usage by 50% while supporting high-speed data transmission.

Overview of BiDi Technology

BiDi optical modules transmit and receive data simultaneously over a single strand of single-mode fiber by using two distinct wavelengths—one for transmitting (Tx) and one for receiving (Rx). This is achieved through wavelength division multiplexing (WDM), where an internal WDM coupler separates incoming and outgoing signals to prevent interference. BiDi modules are commonly used in campus networks, metro access networks, data center interconnects, and building-to-building links, where fiber resources are limited.

Key Specifications

- **Data Rates:** Common BiDi modules include 1G, 10G, and 25G SFP/SFP+ modules, with some supporting up to 11.3 Gbps for 10G BiDi SFP+.
- **Wavelengths:** Typical wavelength pairs are 1310 nm/1550 nm or 1270 nm/1330 nm, depending on the module type. Modules must be paired with complementary wavelengths for proper operation (e.g., SFP-10G-BXD1 with SFP-10G-BXU1).
- **Transmission Distance:** Distances vary by module and fiber type, ranging from 10 km to 40 km for single-mode fiber, with some modules optimized for shorter or long...

Article Content

BiDi Optical Modules: Unlocking Single-Fiber Bidirectional Connectivity

BiDi modules deliver a powerful approach to fiber savings and cost reductions through full-duplex communication

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

Learn everything about BiDi SFP and BiDi fiber, including working principles, 1310nm/1550nm wavelength design,

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

FAQ: What Is Single-Fiber Bidirectional

In Single-Fiber bidirectional mode, multi-wavelength optical signals are transmitted through only one fiber is both

Comprehensive Guide to FS 10G BiDi SFP Modules

Enter the 10G BiDi (bidirectional) SFP+ module —an elegant solution that enables full-duplex communication over a

What is the difference between BIDI single-fiber bidirectional and dual ...

Learn the differences between BIDI single-fiber and dual-fiber bidirectional optical modules:

Bidirectional Transmission over a single multimode optical fiber

BiDi Optical Transceiver (Symmetric) ex. QSFP reconfigurable module - (4-lane BiDi) 1 ~ 4 Lane optics WDM: 850nm & 910 nm Reduced

BiDi SFP Module: A Complete Guide for Fiber Networks

A BiDi SFP module is a bidirectional fiber optic transceiver that enables simultaneous transmit and receive over a single strand of

The Complete Guide to BiDi Transceiver

What Is BiDi Transceiver? BiDi transceivers have become synonymous with reliable and high-performance

Unlocking the Power of BiDi SFP Modules:

BiDi SFP modules are a great technological development in optical communication. They

Multi-mode optical fiber

Multi-mode optical fiber is a type of optical fiber mostly used for communication over short distances, such as within a building or on a

Things You Should Know About BiDi SFP Modules

Things You Should Know About BiDi SFP Modules For the past few years, SFP transceiver modules have received

The Complete Guide to BiDi Transceiver

Unlike traditional optical modules that use separate fibers for transmitting and receiving data, BiDi modules

Single-fiber bidirectional BIDI SFP optical module

Description BIDI (short for Bidirectional) SFP optical module is an extremely innovative single-fiber bidirectional optical module. It

How do optical modules achieve single-fiber bidirectional

2 re Component: WDM Coupler (wavelength division multiplexer): As a key component, it sends optical signals of

Bidi single fiber bidirectional optical module, all you want to know is ...

Different from the ordinary optical module (using dual fiber to transmit data, one for transmitting and one for

Single-fiber Transceiver & Dual-fiber Transceiver

Single-fiber optical modules and dual-fiber optical modules are two common types of optical modules. They all play an important role

The Essential Guide to BiDi Transceivers: Everything You Need to Know

BiDi transceiver, a compact optical transceiver with WDM (wavelength division multiplexing) technology and SFP

Understanding BIDI SFP Optical Transceiver Modules

Discover BIDI SFP optical transceivers, the single-fiber bidirectional modules that optimize fiber usage. Learn how they

Bidirectional SFP Selection Guide for Single-Fiber Links

Learn how to choose the right bidirectional SFP for single-fiber links. Compare wavelengths, distances, and compatibility to optimize

Optical Fiber: Single-Mode Multimode Single-Fiber Dual-Fiber

Single-fiber vs. dual-fiber refers to how many fiber strands are used to send and receive data. In this guide, we'll

BiDi SFP Module: A Complete Guide for Fiber Networks

Learn what a BiDi SFP module is, how it works, key types, benefits, and when to use BiDi optics in fiber networks.

Cisco SFP Modules for Gigabit Ethernet Applications Data Sheet

This data sheet describes the benefits, specifications, and ordering information for the Cisco SFP Modules for Gigabit

What is the Difference Between SFP and BiDi SFP?

Compare SFP vs BiDi SFP: key differences, fiber requirements, compatibility, and best use

Understanding BIDI SFP Optical Transceiver Modules

Visually, a BIDI module has only one port and uses only one optical fiber for connection. The working principle of a

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics

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

A single fiber SFP, also known as a BiDi SFP, is designed precisely for this purpose—enabling bidirectional data transmission over a

Understanding BIDI SFP Optical Transceiver Module: Everything You

A BIDI SFP optical transceiver module, one of the key elements of this field, facilitates the simultaneous sending and

How do optical modules achieve single-fiber bidirectional

It achieves bidirectional signal transmission over a single fiber through wavelength splitting and single-fiber

SFP-1060-WB

Product description The SFP-1060-WB is a BiDirectional single fiber strand 10G SFP+ optical module using Tx:1330nm and

Brief introduction of single fiber bidirectional (BIDI) optical module

Working principle of BiDi single fiber bidirectional optical module As shown in the figure below, a general optical

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.thebucketlistbook.co.za>

Email: sales@thebucketlistbook.co.za

Phone: +33 1 42 78 39 16

Address: 10 Rue de la Paix, 75002 Paris, France

This document is for informational purposes only. Specifications subject to change without notice.

