

Single-fiber bidirectional SFP for photovoltaic power plants



Overview

Supporting 40km transmission over single-mode fiber at 1550/1310nm wavelengths, this BiDi module delivers 21 dB link budget and multi-rate operation from 100 Mbps to 1. LC/UPC connector ensures reliable performance. Pair with Side A for bidirectional . BiDi SFP (Bidirectional Small Form-Factor Pluggable) transceivers have emerged as a powerful solution, enabling full-duplex communication over a single optical fiber. These hot-swappable SFP BiDi transceivers provide data rates of 4G and distance up to 160 kilometers. Unlike traditional SFP transceivers that require two fibers—one for transmitting and one for receiving—a single fiber SFP uses. By reading this blog, you will understand how SFP BiDi technology allows you to save fiber, reduce costs, and simplify installation while enabling your network to increase bandwidth and faster connectivity. Why Choose BiDi?

Solving Your Fiber and Cost Challenges Why Choose BiDi?

Solving Your Fiber. BiDi SFP modules use a single fiber strand for both transmitting and receiving data.



Article Content

Feb 05, 2026

Choosing the Right SFP: Single Fiber vs Dual Fiber

What Is a Single Fiber SFP? Single fiber SFP modules, often referred to as BiDi (Bidirectional) SFPs, utilize Wavelength Division Multiplexing (WDM)

Nov 24, 2025

Unlocking the Potential of 25G BiDi SFP28: An In-depth Guide to

Discover the power of the SFP28 25G BiDi transceiver in our comprehensive guide. Learn about its specifications, compatibility with SMF cables, and 40km range.

Jul 24, 2025

Comprehensive Guide to SFP BiDi 10G 40km Modules: Selection ...

Discover Link-PP's reliable and compatible SFP BiDi 10G 40km modules for high-speed, cost-effective single-fiber 10G networks. Learn about selection tips, wavelength pairing, installation

Apr 21, 2026

Bidirectional SFP Selection Guide for Single-Fiber Links

Selecting the correct bidirectional SFP for a single-fiber link requires evaluating several technical parameters. Because BiDi modules rely on wavelength pairing and optical power balance, factors

Jan 05, 2026

Single Strand Mastery: BiDi SFP Architecture

Demystifying the BiDi SFP Working Principle & Wavelengths The architectural brilliance of a Bidirectional (BiDi) SFP lies in its ability to abandon the traditional "dual-highway" fiber model in

Nov 16, 2025

Single-fiber Bidirectional Transceivers

Bidirectional transceivers transmit and receive optical signals through a single fiber, saving optical fiber resources. This is useful where fiber resources are scarce and

May 19, 2026

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 your optical network.

Jun 03, 2026

1G Bidirectional Transceivers for Service Provider and

The Cisco 1G bidirectional transceivers provide several benefits for both service provider and IoT applications. These transceivers offer the following

Jun 03, 2026

10G BiDi SFP+ Modules: A Guide to Single-Fiber 10G

Explore how 10G BiDi SFP+ modules enable high-speed, bidirectional data over a single fiber, cutting costs, saving fiber, and simplifying network deployment.

Jan 13, 2026

Single Fiber Transceiver Modules | Bidirectional (BiDi) SFP

Single Fiber Bidirectional SFP transceivers use simplex single-mode fiber to double the bandwidth, data rates up to 4G and distances up to 160km.

Jul 21, 2025

SFP BiDi 1GE 1310nm/1550nm MM 1km 11dB LC

The SO-SFP-1000BASE-BX-MMD-xy is a bi-directional transceiver solution operating directly on a single-fiber without the need for a separate optical filter. This is achieved by having two transceivers

Mar 18, 2026

Impact and Mitigation of Reflections in 400G Single-Fiber Bidirectional ...

We perform experimental evaluation and analytical modelling of the sensitivity penalty caused by discrete and distributed reflections in 400G single-fiber bidirectional coherent systems for

Mar 23, 2026

SFP-GE-LX-SM1490-BIDI (Single-Fiber-Bidirectional Module)

Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-GE-LX-SM1490-BIDI must be used with SFP-GE-LX-SM1310-BIDI.

Jul 03, 2025

1G BiDi SFP Module Selection Guide: Maximize Fiber

Choose the right 1G BIDI sfp module by checking compatibility, wavelength pairing, fiber type, and distance to ensure reliable network performance.

Sep 26, 2025

Single-Fiber Bidirectional Transmission using 400G ...

We experimentally evaluate the Rayleigh Back-Scattering power penalty in a single-fiber single-wavelength bidirectional link using coherent digital subcarrier-based transceivers and verify a ...

Nov 21, 2025

Differences Between Dual Fiber SFP and Simplex SFP

Dual Fiber SFP vs Simplex SFP Module: What are They? Dual fiber SFP modules are the commonly used 1G SFP module type. They operate on a

Feb 02, 2026

1000BASE-BX SFP 40km Side B | Single Fiber | EDGEOPTIC

Supporting 40km transmission over single-mode fiber at 1550/1310nm wavelengths, this BiDi module delivers 21 dB link budget and multi-rate operation from 100 Mbps to 1.25 Gbps. LC/UPC connector

Sep 22, 2025

1000Base-BX WDM Bi-Directional SFP Module

The TP-LINK's TL-SM321B-2 is developed in accordance with the Small Form Pluggable Multi-Source Agreement (SFP-MSA). As a WDM Bi-Directional optical

May 26, 2026

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 right BiDi SFP.

May 07, 2026

SFP-FE-LX-SM1310-BIDI (Single-Fiber-Bidirectional Module)

This document provides an overall description of the CE5800& 6800& 7800& 8800 series switches hardware that versions earlier than V200R020C00, helping you obtain detailed information about

May 15, 2026

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, single fiber advantages, wiring diagrams, and key differences

Sep 29, 2025

Single Strand Mastery: BiDi SFP Architecture

Explore the BiDi SFP working principle and wavelength mapping. Our architect-level guide covers WDM diplexers, DFB lasers, and TCO strategies to double your fiber capacity.

Sep 02, 2025

Bidirectional SFP Selection Guide for Single-Fiber Links

However, selecting the correct BiDi SFP requires careful attention to several technical factors, including wavelength pairing, transmission distance, data rate compatibility, and device support. This guide

Apr 21, 2026

BiDi Optical Modules: Unlocking Single-Fiber

Comprehensive guide on BiDi Optical modules, detailing single-fiber bidirectional connectivity, deployment tips, troubleshooting, and multi-speed

Jan 25, 2026

BiDi SFP Modules: Single-Fiber Bidirectional Guide

BiDi SFP modules use a single fiber strand for both transmitting and receiving data. Learn how single-fiber bidirectional technology works, wavelength pairs, and when to choose BiDi over standard

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