

# Single-fiber bidirectional OSFP for edge computing



## Overview

Paired with 10A variant for bidirectional operation, this 10G BiDi module delivers 6.2 dB link budget over 10km single-mode fiber. Supporting multi-rate transmission from 1.32 Gbps with LC/UPC connector, ideal for fiber-constrained installations and infrastructure. Our 10G BiDi SFP+ 10km transceiver provides cost-effective single-fiber connectivity with Tx1330nm/Rx1270nm wavelengths. 25 to. Compact small form-factor pluggable CSFP transceiver and a compact small form-factor CSFF transceiver supports network systems, especially those deploying single-fiber bidirectional transceivers in high density applications. An SFP interface on networking hardware is a modular slot for a media-specific transceiver, such as for a fiber-optic cable or a copper. A bidirectional SFP (BiDi SFP) provides an efficient solution by enabling data transmission and reception over a single strand of optical fiber. Instead of using separate fibers for transmit and receive signals, BiDi modules rely on wavelength division multiplexing (WDM) to send signals in opposite. In modern enterprise, data center, telecom, and industrial networks, SFP optical transceivers remain one of the most important components for connecting switches, aggregation routers, Wi-Fi 6E/7 APs, and edge infrastructure. This paper covers the ability to scale to higher.



## Article Content

Nov 15, 2025

### Single-mode vs Multimode SFP 2026: Fiber Types and

A guide to single-mode vs multimode SFP modules. Covers fiber types, wavelengths, distances, BiDi, CWDM/DWDM, SMF vs MMF selection, and

Mar 11, 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.

Nov 12, 2025

### 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.

Dec 22, 2025

### Bidirectional SFP Selection Guide for Single-Fiber Links

This guide explains how bidirectional SFP technology works and outlines the key specifications to consider when selecting modules for single-fiber links. It also covers common BiDi SFP types,

May 24, 2026

### Coherent BiDi for Edge and Access Network Applications

This coherent BiDi module is designed to support service provider edge and access optical network links with single-fiber routes, as illustrated in Figures 2b and 3b.

Oct 06, 2025

### Everything You Need to Know About 800G/1.6T Optical Transceiver

This tripartite evolution addresses divergent needs-DSP for long-haul coherent networks, LPO for energy-efficient AI clusters, and co-package for hyperscale density-with vendors like AOI

Mar 04, 2026

### OSFP Connectors & Cable Assemblies

TE Connectivity's (TE) next-generation OSFP 224G copper cable assemblies are designed to meet the evolving needs of high-speed and high-density data centers

Sep 27, 2025

10G BiDi XFP 10km Side A | Single Fiber | EDGEOPTIC

10G BiDi XFP Side A: 1270/1330nm, 10km single fiber, 8dB budget. Cost-effective WDM solution, multi-rate 1.24-11.32 Gbps. Pair with Side B.

Oct 25, 2025

OSFP Connector System

The Octal Small Form Factor Pluggable (OSFP) Connector System provides single- or dual-port, 8- or 16-lane I/O connectivity with DAC, AOC, ACC and optical

Jan 21, 2026

NVIDIA Cable Management Guidelines and FAQ

Single-mode Optics: Parallel single-mode transceivers (PSM4) are used up to 500 m. After 500 meters the cost of 8 fibers adds up with each meter, so multiplexing the four channels signals into one single

Sep 29, 2025

OSFP Connector: Ultimate Guide to Amphenol and TE

Discover the ultimate guide to Amphenol and TE Connectivity solutions for OSFP connectors and cage, cable assemblies, and interconnect

Jan 05, 2026

Compact SFP CSFP

These highly integrated compact transceiver modules will enable network system vendors to increase port density and data throughput, while reducing network

May 17, 2026

FS SFP-10G-BX: High-Performance Long-Distance

Compared with traditional duplex LC modules, the SFP-10G-BX transmits bidirectional signals over a single fiber via a Simplex LC connector. This

Apr 27, 2026

OSFP Connector Guide: 400G and 800G Modules,

OSFP Connector Explained: Features and Benefits for 400G 800G Networks OSFP (Octal Small Form-factor Pluggable) is the high-density, hot

Jun 05, 2026

Complete Guide to OSFP Transceiver: 400G/800G/1.6T

Master OSFP transceiver technology with our comprehensive guide. Covers 400G/800G/1.6T speeds, OSFP vs QSFP-DD comparison, thermal

Dec 30, 2025

Bidirectional Forwarding Detection for OSPF

Bidirectional Forwarding Detection provides a method for network administrators to configure sub-second Layer 2 failure detection between adjacent network nodes.

Jun 27, 2025

Single Multicore-Fiber Bidirectional Spatial Channel ...

In this paper, we propose a single-multicore-fiber (MCF) bidirectional spatial channel network (SCN) architecture that efficiently accommodates up and down asymmetric traffic.

Sep 15, 2025

OSFP OCTAL SMALL FORM FACTOR PLUGGABLE MODULE

Abstract: This specification defines the electrical connectors, electrical signals and power supplies, mechanical and thermal requirements of the OSFP Module, connector and cage systems. The OSFP

Mar 10, 2026

Single-Fiber Bidirectional Optical Data Links with

Using a single butt-coupled multimode fiber (MMF), low-cost bidirectional communication in half- and even full-duplex mode is demonstrated.

Aug 17, 2025

Small Form-factor Pluggable

OverviewQSFP typesApplicationsStandardizationMechanical dimensionsDigital diagnostics monitoring

Quad Small Form-factor Pluggable (QSFP) transceivers are available with a variety of transmitter and receiver types, allowing users to select the appropriate transceiver for each link to provide the required optical reach over multi-mode or single-mode fiber. 4 Gbit/s The original QSFP document specified four channels carrying Gigabit Ethernet, 4GFC (FiberChannel), or DDR InfiniBand. 40 Gbit/s (QSFP+) QSFP+ is a

Dec 05, 2025

Understanding the OSFP Standard: The Open 400G/800G Optical

The OSFP standard marks a pivotal step toward scalable 400G and 800G optical networking, designed from the ground up for AI, cloud, and HPC infrastructures. With open MSA

Dec 03, 2025

Understanding 800G OSFP InfiniBand NDR Transceivers

What Is 800G OSFP InfiniBand NDR Transceivers? 800G NDR OSFP (Octal Small Form-factor Pluggable) transceivers are cutting-edge optical

Sep 05, 2025

10G BiDi SFP+ 10km | Tx1330/Rx1270 | Single Fiber Compatible

Paired with 10A variant for bidirectional operation, this 10G BiDi module delivers 6.2 dB link budget over 10km single-mode fiber. Supporting multi-rate transmission from 1.25 to 11.32 Gbps

Jan 03, 2026

800G OSFP: A Guide to Next-Generation Optical Transceivers

800G OSFP 2xFR4 (EML & SiPh) | Power: 16W Introduction: These modules break the 800G signal into 4x 100G lanes on the electrical side and 2x 200G lanes on the optical side (using

Nov 07, 2025

Types of Area Network and How Optical Modules Support Them

Understanding the major types of area network including LAN, WAN, MAN, CAN, and SAN, and discover how optical modules enable modern fiber connectivity.

Feb 26, 2026

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

A BiDi SFP is a specialized optical transceiver that enables bidirectional communication over a single strand of optical fiber. Unlike standard duplex SFPs that require two fibers—one for

Feb 15, 2026

Unlocking the Power of BiDi SFP Modules:

Elevate your network performance with AscentOptics' BiDi SFP modules. Explore the revolution in fiber networks now!

Dec 15, 2025

Bidirectional single-multicore-fiber spatial channel network based on a ...

In current wavelength division multiplexed (WDM) networks, capacity is deployed in a symmetrical manner, in which wavelength channels provide the same capacity in both directions. However, real

## Contact Us

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