

What is a single-module fiber optic transceiver



Overview

A single mode SFP transceiver is an optical module that uses laser-based transmission over single mode fiber to deliver long-distance, high-speed data communication, typically at 1310nm or 1550nm wavelengths. Think of it as the “translator” for your network equipment, converting electrical signals into optical signals. In modern fiber optic communication, the single mode SFP module plays a crucial role in enabling high-speed, long-distance data transmission. Each module type uses LC interfaces, and professionals commonly group them together under the name LC SFP modules. However, some technicians may also mistype it as an SPF module, which is the same. A fiber optic transceiver is a compact and hot-pluggable device that acts as a bridge between the electrical components of your product's circuit board and the optical domain of a fiber optic cable.



Article Content

May 17, 2026

What is SFP Module? An Ultimate Guide (2024)

An SFP module is a small, pluggable optical transceiver that fits into the SFP port of a networking switch or other device. Sometimes, it is known as

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Optical networks

How does fiber-optic data transmission work? Fiber-optic data transmission sends data as light through thin glass or plastic fibers. Multiple wavelengths can be

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Hilink Optics QSFP QSPDD OSFP 10G SFP

If you have any questions about Hilink Optics CWDM DWDM QSFP QSPDD OSFP 10G SFP transceivers, we will give the professional solutions to you.

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Quick Guide to Fiber Optic Transceiver Modules

Single-Mode Fiber (SMF): It has an exceptionally small core that permits the transmission of a single ray of light. By utilizing

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The Internal Components and Structure of The Optical

This article will focus on the internals of the optical transceiver including the TOSA, ROSA and BOSA, and PCBA. Through this article, you will

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Cisco GLC-LH-SMD Compatible SFP Module

Cisco GLC-LH-SMD Compatible SFP Module - 1000BASE-LH - 1GbE Single Mode Fiber SMF Optic Transceiver - 1GE Gigabit Ethernet SFP - LC 20km - 1310nm -

Jan 19, 2026

Huawei QSFP-DD-400G-SR4 400G Optical Transceiver Module

The Huawei QSFP-DD-400G-SR4 is a high-performance, hot-pluggable optical transceiver designed for 400 Gigabit Ethernet links over multi-mode fiber (MMF). Utilizing the QSFP-DD (Quad Small Form

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Single Mode Optical Transceiver Market 2026

Single Mode Optical Transceiver Market is experiencing significant growth driven by expanding 5G deployments and fiber optic network upgrades. Telecommunication operators are prioritizing high

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What is a fiber optic jumper? What is a tail line? What's

Fiber optic cable and fiber optic transceiver (couplers, jumpers, etc. are also used between them). Pigtails are divided into multimode pigtails and

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400G Optical Modules Explained: SR4 Vs. DR4 Vs.

Key differences between SR4, DR4, FR4, and LR4 400G optical modules. Expert advice from Asterfusion engineers to optimize your data center

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Single-Mode SFP Transceivers: Harnessing the

The single mode SFP transceiver has a reduced core diameter and only one light route, which ultimately decreases signal loss over extended

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What is QSFP & QSFP+ Transceiver: An Ultimate

What is a QSFP & QSFP+ Transceiver? QSFP stands for Quad Small Form-factor Pluggable. By integrating four-lane signals into a single

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SFP+ Optical Transceiver Modules (10G-SR/LR)

Amphenol SFP Optical Modules • SFP+ Optical Modules from Cables on Demand are Now Available in both Short Range (SR) Multimode and Long Range (LR)

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The Ultimate Guide to SFP Modules (2026): Types, Speeds

SFP (Small Form-factor Pluggable) is a compact, hot-pluggable network interface module used to connect network devices (switches, routers, firewalls) to fiber optic or copper cables.

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Single Mode SFP Transceiver: Complete Guide Explained

A single mode SFP transceiver is a hot-swappable optical module designed to transmit and receive data over single mode fiber (SMF). It is commonly used in Ethernet and fiber optic networking equipment

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SFP Transceiver Single Mode: High-Performance

These modules are designed for single mode fiber (SMF), which enables high-speed data transmission over long distances, typically up to 10 km or more. SFP

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1G SFP Transceiver | Difference SMF vs. MMF

SMF SFPs use singlemode optical fiber with a 9-micron core and a 125-micron cladding. It typically transmits signals at 1310 nm and 1550 nm wavelengths. As a result, it works well for long

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The Evolution of AI Connectivity: Unveiling the 800G OSFP112 DR8 ...

Discover the details of The Evolution of AI Connectivity: Unveiling the 800G OSFP112 DR8+ Optical Transceiver at LonRise Equipment Co. Ltd., a leading supplier in China for Optical

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Single Mode vs Multimode SFP Modules: Which One to

Single mode SFP modules operate on single mode fiber, which uses a smaller diameter core to transmit light over longer distances. A multimode SFP

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LonRise Launches TS-OPO8-318H-01C: A Next-Generation 800G

The 800G OSFP DR8 optical transceiver (Model: TS-OPO8-318H-01C) has officially been introduced by LonRise to address the escalating bandwidth demands of next-generation

Jul 12, 2026

StarTech HP JD119B Compatible SFP Transceiver Module

StarTech HPE JD119B Compatible SFP Module - 1000BASE-LX - 1GbE Single Mode (SMF) Fiber Optic Transceiver - 1GE Gigabit Ethernet SFP - LC 10km - 1310nm - DDM HPE 5900, 12500, 5500

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Optical Transceiver Market Size, Share & Forecast to 2034

The rising demand for optical transceivers in data centers, the escalating demand for cost-effective and miniaturized optical transceivers and increasing adoption of

Nov 22, 2025

Optical Transceiver Market Report 2026

Two primary types of optical transceivers exist such as single-mode fiber and multimode fiber. A single-mode fiber transceiver, contained within an optical

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StarTech J9151A-ST HPE J9151A Compatible SFP+ Module

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What Is A Single Mode SFP Module?

A single mode SFP module is a transceiver designed specifically for single mode fiber. Single mode fiber has a smaller core diameter (9 microns), which allows light to travel in a single

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Small Form-factor Pluggable

Quad Small Form-factor Pluggable (QSFP) transceivers are available with a variety of transmitter and receiver types, allowing users to select the appropriate

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25G BiDi SFP28 80KM Optical Transceiver | FiberMania

Perfectly designed for 25g bidi sfp28 optical transceiver 1270/1330nm 80km single-mode fiber LC for switch, router, and server optical connections.

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Juniper SFP+ 10GBASE LR network transceiver module Fiber optic

SFP+ 10GBASE LR; LC connector; 1310 nm; 10 km reach on single-mode fiber
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What is the LRO Transceiver? The Simple Guide to Linear Receive Optics

What Is an LRO Transceiver LRO (Linear Receive Optics) is essentially a half-retimed optical module architecture. Traditional high-speed optical modules typically deploy DSPs on both

Contact Us

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