

10 Gigabit Fiber Optic Transceiver

Article Overview

10 Gigabit single-mode SFP+ transceivers provide high-speed, long-distance fiber connectivity up to 10 km, typically using LC connectors and operating at 1310 nm.

Key Features

Form Factor and Compatibility: Most 10G single-mode transceivers use the SFP+ (Small Form-factor Pluggable Plus) or mini-GBIC form factor, which is hot-pluggable, allowing installation or replacement without powering down the network switch or device (). They are compatible with Cisco and other MSA-compliant switches, routers, and servers (). **Wavelength and Fiber Type:** These transceivers operate on single-mode fiber (SMF), typically at 1310 nm, which is ideal for long-distance transmission. Some BiDi (bidirectional) modules use 1270/1330 nm wavelengths for simplex LC connections (). **Distance and Performance:** Standard 10G single-mode SFP+ modules support distances up to 10 km over single-mode fiber, making them suitable for connecting buildings, data centers, or campus networks (). Certain high-performance modules can extend up to 100 km for specialized long-haul applications (). **Data Rates and Standards:** These transceivers support 10 Gigabit Ethernet (10GbE) and comply with IEEE 802.3ae standards. They typically support data rates from 1.25 to 11.3 Gbps, ensuring smooth, high-speed data transmission (). **Diagnostics and Monitoring:** Many modules include Digital Diagnostics Monitoring (DDM) or Digital Optical Monitoring (DOM), allowing real-time monitoring of optical output power, input power, temperature, laser bias current, and supply voltage (). **Environmental Tolerance:** Industrial-grade transceivers operate in a wide temperature range, often from -40°C to +85°C, making them suitable for harsh environments ().

Use Cases

- o Data Centers: High-density 10GbE connections between servers and switches.
- o Campus Networks: Linking buildings over single-mode fiber for reliable high-speed connectivity.
- o Service Provider Networks: Long-distance fiber transport for enterprise or metro networks.
- o Industrial Applications: Environments requiring robust, temperature-tolerant transceivers.

Summary

10 Gigabit single-mode SFP+ transceivers are hot-pluggable, high-performance modules designed for long-distance fiber connections. They provide reliable 10GbE connectivity over single-mode fiber up to 10 km, support real-time diagnostics, and are compatible with a wide range of network equipment. Their compact form factor and industrial-grade specifications make them ideal for data centers, campus networks, and other high-speed, long-range applications ().

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10GbE SFP+ transceivers are essential components for high-speed data transfer and reliable network connectivity in modern

10Gtek 1.25G SFP Transceiver 1000Base-LX, 1310nm SMF SingleMode Fiber Optic Module, up to 10 km, for Cisco GLC-LH-SMD,

Cisco SFP-10G-LR Compatible SFP+ Module - 10GBASE-LR - 10GbE Single Mode Fiber SMF Optic

The 1000BASELX SM SFP 10KM is a Gigabit single-mode SFP (mini-GBIC) transceiver with an LC style connector. Operating at a

About this item 1000BASE-LX/LH SFP to LC Optical Gigabit Ethernet Fiber transceiver module, 1.25G

The Intellinet 10 Gigabit Fiber SFP Optical Transceiver Module

The 10 Gigabit Singlemode SFP+ Transceivers provide high-performance, reliable connectivity for modern

Singlemode solutions from Fiber24: Comprehensive and modern Discover our diverse selection of singlemode transceiver modules,

The GSFIBER-SFP-10K is a Gigabit Ethernet single-mode SFP transceiver. Utilizing LC connectors and operating at a 1310nm

An SFP+ 10G single-mode module is a hot-pluggable optical transceiver that converts electrical signals from a switch

The SFP Single Mode LC Modules are SFP transceivers compatible with standard SFP slots on network

The Cisco® 10GBASE SFP+ modules (Figure 1) give you a wide variety of 10 Gigabit Ethernet connectivity options for

Choose the 1310-nm Singlemode SFP (LC) 10G optical transceiver, which transmits and receives optical data over singlemode

Perle 10 Gigabit Optical Transceivers are interchangeable, compact media connectors and enable a single network device to

Reliable, high-speed connectivity with the SFP-10G-LR Compatible transceiver. Designed for 10 Gigabit networks, this module



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Full Duplex Single-Mode SFP+ Module The single-mode SFP+ transceiver supports full duplex and 10G Ethernet

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