Single-core 10GE optical module



Overview

This data sheet describes the benefits, specifications, and ordering information for the Cisco 10GBASE SFP+ Modules Data Sheet.

Key Takeaways

A single-core 10G optical module is typically an SFP+ transceiver designed for 10 Gigabit Ethernet over single-mode fiber, supporting distances up to 10 km at 1310nm wavelength. OverviewSingle-core 10G optical modules, often in the SFP+ form factor, are hot-pluggable transceivers that convert electrical signals from switches or routers into optical signals suitable for single-mode fiber (SMF) transmission. They are widely used in data centers, enterprise networks, and telecom environments to provide reliable long-distance links with low latency and minimal signal loss.

Key Specifications

Data Rate: 10 Gigabit per second (10G) for high-speed network connectivity. Wavelength: 1310 nm, optimized for long-distance single-mode fiber links. Reach: Up to 10 kilometers over single-mode fiber, suitable for campus or metro networks.

Connector Type: LC duplex connectors, compatible with standard single-mode patch cords. Standards Compliance: IEEE 802. 3ae (10GBASE-LR), SFF-8431, SFP+ MSA, and RoHS, ensuring interoperability across vendors.

Power Consumption: Low, typically designed for energy-efficient operation. Digital Optical Monitoring (DOM): Provides real-time monitoring of optical output power, temperature, and voltage for proactive troubleshooting.

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Advantages

High Port Density: Compact SFP+ form factor allows multiple modules per switch, maximizing port utilization.

Hot-

Pluggable: Can be installed or replaced without powering down the network device. Low Latency: Optimized for fast signal processing, suitable for high-frequency trading, cloud applications, and video streaming.

Reliable Long-

Distance Transmission: Single-mode fiber minimizes modal dispersion, ensuring stable connections over 10 km.

Deployment Scenarios

Data Centers: Interconnecting servers, switches, and storage devices with high-speed links. Enterprise Networks: Extending backbone connections across buildings or campuses. Telecom Networks: Providing long-reach 10G Ethernet links for metro or regional networks.

Considerations

Ensure fiber type compatibility (single-mode vs. multi-mode) and connector type (LC duplex). Verify switch or router SFP+ port support for 10GBASE-LR modules. Use DOM-enabled modules for monitoring and maintaining network reliability.

Single-core 10G optical modules are essential for modern high-speed networks, offering efficient, long-distance, and low-latency connectivity while maintaining compatibility with standard SFP+ infrastructure.

Article Content

10G SFP+ Optical Transceivers | Transceiver Module

FS 10GbE SFP+ module solutions provide a wide variety of 10 Gigabit Ethernet connectivity options for data centers, enterprise wiring closets, Internet Service

10GE SFP+ Optical Modules

If the SFP-10G-ER-1310 is connected to a 10Gbase-ER standard optical module (1550nm, 10GE, 40km), the maximum transmission distance is only 20km due to different specifications such as wavelength

10GE SFP+ Optical Modules

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This document provides an overall description of the CE12800 series switches hardware, helping you obtain detailed information about each chassis, power module, fan module, card, cable, and

Cisco 10GBASE SFP+ Modules Data Sheet

This data sheet describes the benefits, specifications, and ordering information for the Cisco 10GBASE SFP+ Modules Data Sheet.

Optical Transceiver SFP+ 10G Single-Mode Module 1310nm 10km LC

Explore the features, applications, and selection guide for optical transceiver SFP+ 10G single-mode 1310nm 10km LC modules for data centers and enterprise networks.

Single Mode 10G SFP+ Module: Price, Types & Buying Guide

Explore single mode 10G SFP+ modules, including LR, ER, and ZR types. Compare prices, distances, and compatibility to choose the right module.

Comprehensive Guide to FS 10G BiDi SFP Modules

FS 10G BiDi SFP+ modules are a powerful tool for network engineers seeking to boost bandwidth without doubling fiber investment. With their compact form factor, reduced power draw,

optical transceiver sfp+ 10g single mode module

The 1310nm LC Interface 10G Singlemode Dual-fiber Optical Module is the workhorse of the modern network. It combines speed, distance, and reliability

Huawei CloudEngine S6750-H Series 10GE Switches Datasheet

Datasheet Huawei CloudEngine S6750-H Series 10GE Switches Datasheet Huawei CloudEngine S6750-H series 10GE switches are next-generation enterprise-class core and aggregation switches

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Analyze the Single Mode Optical Modules market driving demand from telecom and data centers. Projecting 16.2% CAGR to 2033. Access key market dynamics and strategic insights.

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How to distinguish whether an optical fiber module is single-mode or ...

Correctly distinguishing single-mode and multi-mode optical modules is critical for matching fiber patch cords,ensuring transmission stability,and avoiding network failures.

Ethernet Switch Port Types Explained 2026: RJ45,

A complete engineering guide to Ethernet switch port types: RJ45, SFP, SFP+, SFP28, QSFP+, QSFP28, Combo, Stack, PoE, access/trunk/hybrid

Learn About Optical Transceiver Modules in One Minute

The signal transmission of this optical transceiver module can realize bidirectional transmission through a single optical fiber. Compact SFP Optical Transceiver Module If two identical

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