10G Optical Module Single-Mode Specifications



Overview

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

Key Takeaways

A 10G single-mode optical module is an SFP+ transceiver that delivers 10 Gigabit Ethernet over single-mode fiber up to 10 km using a 1310 nm wavelength and LC duplex connectors.

Overview

A 10G single-mode optical module (SFP+) is a compact, hot-pluggable transceiver designed to convert electrical signals from switches or routers into optical signals suitable for single-mode fiber (SMF) transmission. These modules are widely used in data centers, enterprise networks, and telecom environments to provide reliable long-distance links with minimal signal loss and low latency.

Key Specifications

Data Rate: 10 Gigabit per second (10G) for high-speed network connectivity.
Wavelength: 1310 nm, optimized for long-distance single-mode fiber transmission.
Maximum Distance: Up to 10 kilometers over single-mode fiber.

Connector Type: LC duplex, compatible with standard single-mode patch cords.
Standards Compliance: Conforms to 10GBASE-LR (Long Reach) under IEEE 802. 3ae, ensuring interoperability across vendors.

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Form Factor: SFP+ small form-factor, allowing high port density and hot-pluggable operation. Optional Features: Digital Optical Monitoring (DOM/DDM) for real-time measurement of optical power, temperature, and voltage. AdvantagesLong-Distance Connectivity: Supports up to 10 km, ideal for connecting switches across buildings or campus networks.

Low Latency and High Stability: Efficient signal processing ensures minimal delay and reliable connections for high-performance applications like cloud computing, video streaming, and real-time data processing. Energy Efficient: Designed for low power consumption while maintaining high-speed performance. Interoperability: Multi-source agreement (MSA) compliance allows use with a wide range of switches, routers, and network interface cards.

Deployment Considerations

Ensure the fiber type is single-mode (SMF) with a core diameter of approximately 9 µm to minimize modal dispersion. Verify optical budget and link loss to maintain signal integrity over the intended distance. Use compatible LC duplex patch cords and maintain proper handling to avoid damage to the fiber or module.

Avoid looking directly into the fiber ends or powered transceivers, as they are Class 1 laser products. In summary, a 10G single-mode SFP+ module is a reliable, high-performance solution for long-distance 10 Gigabit Ethernet connections, offering low latency, high stability, and broad compatibility for modern networking infrastructures.

Article Content

Cisco 10GBASE SFP+ Modules Data Sheet

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

SFP-10G-ER Explained: Powering 40km 10Gbps

This comprehensive guide dives deep into the SFP-10G-ER optical transceiver module. Learn its technical specifications, key applications,

UniFi 10G Single-Mode Optical Module

SFP+ transceiver that supports 10G connections up to 10 km using single-mode fiber with a duplex LC UPC connector.

Cisco 10GB Single Mode SFP: Specs, Types & Features

This article provides a detailed exploration of Cisco 10GB Single Mode SFP optical modules, including their classifications, specifications, technical parameters, and key features.

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Select The Right Fiber Patch Cables For 1G/10G/25G Modules

Deploying optical modules requires the right fiber patch cable. It directly affects network connection stability, performance, and maintenance. This article will explain how to pick the right fiber

Meaning of Optical Module Pull Tap Colors

However, it is important to note the special wavelengths of high-speed modules (such as 10G and 25G). For example, the 1330nm wavelength of a 10G single-fiber module corresponds to

Ortronics Cisco SFP+ Module

C2g SFP-10G-BX60U-I-A for $166.60 - Ortronics Cisco Sfp+ Module - For Optical Network, Data Networking - 1 X Lc Duplex 10gbase-bx Networ Sfp10gbx60uia at CompSource

Small Form-factor Pluggable

Small Form-factor Pluggable Small Form-factor Pluggable connected to a pair of fiber-optic cables Small Form-factor Pluggable (SFP) is a compact, hot-pluggable network interface module format used for

Cisco 10GBASE SFP+ Modules Data Sheet

The Cisco® 10GBASE SFP+ modules (Figure 1) give you a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport

Ubiquiti 10G Single-Mode Optical Module UACC-OM-SM-10G-D-2

Ubiquiti 10G Single-Mode Optical Module SFP+ transceiver that supports 10G connections up to 10 km using single-mode fiber with a duplex LC UPC connector. Max data rate: 10 Gbps Compatible with

Single Mode Optical Modules: Growth & Key Trends to 2033

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.

10G Bidirectional Single-Mode Optical Module

SFP+ transceiver that supports 10G connections up to 10 km using single-mode fiber with a simplex LC UPC connector.

SFP+ Transceiver CBO SFP-10G-BX-U 10G | AiO.lv

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Usage recommendations Use certified single-mode fiber and compatible bidirectional modules at the remote end to ensure reliable 10G operation. Observe manufacturer specifications for maximum

SFP Module Buying Guide: How to Choose the Right Transceiver

SFP modules (Small Form-factor Pluggable) are the standard interface for connecting fiber optic or copper cables to network switches, routers, and servers. With hundreds of variants

Alcatel-Lucent (Nokia) 3HE00564CA 01 10GBASE-LR XFP Optical

This module features a standard XFP form factor, complies with IEEE 802.3ae 10GBASE-LR standards, and supports 10.3Gbps full-duplex data rate over single-mode fiber (SMF). With its industrial-grade

Ubiquiti 10 Gbps Bidirectional Single-Mode Optical Module

Single-mode, simplex, fiber transceiver module. The 10 Gbps Bidirectional Single-mode Optical Module is a simplex transceiver that delivers up to 10 Gbps speed over distances up to 10 kilometers.

SFP+ Transceiver CBO SFP-10G-BX-D 10G | AiO.lv

Short description CBO SFP-10G-BX-D is an SFP+ fiber optic transceiver module for 10 Gigabit Ethernet. Designed for single-mode bidirectional (BX) links, it enables 10G data transmission over a single

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