

Gigabit Single-Core Single-Mode Optical Module



AI Overview

A Gigabit single-mode single-core optical module is a hot-pluggable transceiver that supports 1Gbps Ethernet over single-mode fiber, typically with transmission distances ranging from 10 km to 120 km depending on wavelength and module type. Key Specifications Data Rate: These modules operate at 1Gbps (1.25Gbps nominal), compatible with Gigabit Ethernet, 1G Fiber Channel, and SDH networks, and are backward compatible with lower speeds like 100Mbps for legacy systems .

Wavelength: Common single-mode wavelengths include: 1310 nm: Suitable for medium distances up to 40 km, with moderate loss and low dispersion . 1550 nm: Optimized for long-distance transmission above 40 km, capable of reaching up to 120 km without repeaters .

Transmission Distance: Depending on the module and fiber quality, single-mode single-core modules can cover: 10 km (standard LX/LH SFP) 40 km, 80 km, or 120 km for long-haul applications .

Interface Type: SFP modules: LC connectors GBIC modules: SC connectors Some single-fiber BiDi modules use a single strand with wavelength separation for transmit and receive channels .

Laser and Optical Power: Modules use semiconductor lasers to emit light, with transmit optical power and receive sensitivity designed to maintain low bit error rates over the specified distance . Digital Optical Monitoring (DOM) is often supported, allowing real-time monitoring of optical power, temperature, and voltage .

Practical Applications Enterprise and campus networks: Access-layer switching and fiber uplinks

Data centers: Connecting servers, storage, and switches

Telecom and long-haul networks: High-reliability single-mode links

Legacy infrastructure upgrades: Compatible with existing 1G SFP ports without replacing hardware .

Advantages Hot-pluggable: Can be inserted or removed without powering down equipment Flexible d...

Article Content

What Are The Types Of Gigabit Optical Modules

The Gigabit single-mode optical module can be used together with OS2 single-mode optical fiber patch cord, and the maximum transmission distance can reach 160km.

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1 Gigabit Singlemode SFP Fiber Optic Transceivers | Long-Distance

1 Gigabit Singlemode SFP Transceivers Our 1 Gigabit Singlemode SFP Transceivers offer high-performance, reliable connectivity for singlemode fiber optic networks. These transceivers are

SFP-1GLXLC

Moxa's small form-factor pluggable transceiver (SFP) Ethernet fiber modules for Gigabit Ethernet provide coverage across a wide range of communication

Gigabit single-mode single-core fiber optic module

Optical signals are transmitted directly without repeater amplification. Gigabit single-mode single-core optical fiber modules usually have the following specifications: multi-mode 550m, single

1G SFP Transceivers | Mini-GBIC SFP Modules

FS gigabit ethernet transceiver solutions provide fibre or copper options including 1000BASE-SX, 1000BASE-LX/LH, 1000BASE-T etc., from 100m to 160km, for

Industrial Gigabit Fiber SFP Optical Transceiver

Compatibility in your network is everything, and this industrial SFP Transceiver Module delivers. Use it with any Intellinet SFP equipped network switch or any

1G BiDi SFP

GIGALIGHT's 1G BiDi SFP series optical transceiver modules support a speed of 1.25Gbps, widely used in Gigabit Ethernet, 1G fiber channel, and SDH. They can

Meaning of Optical Module Pull Tap Colors

Basic Color Identification for Single-Mode and Multi-Mode Fiber Optics ① Multimode fiber optic module: The pull tap is black, corresponding to a wavelength of 850nm, suitable for short

The Key Differences Between 1-core, 2-core, Single Mode, and

Understanding 1-core, 2-core, Single Mode, and Multi-mode optical modules helps you design efficient networks. Whether you're working on long-distance telecom systems or setting up

Eoguar EGLW-SMF Series Single-Mode Fiber-Coupled Laser Diode Module

The Eoguar EGLW-SMF Series is a line of single-mode fiber-coupled laser diode modules engineered for precision optical integration in laboratory, industrial, and research environments.

Cisco SFP and SFP+ Transceiver Module Installation Notes

This installation note provides the installation instructions for the Cisco small form-factor pluggable (SFP) and SFP+ transceiver modules. These transceiver modules are hot-swappable

Cisco 10GBASE SFP+ Modules Data Sheet

Product overview 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

How Fibre Optic Communication Works – Wray Castle

A single mode fiber has a core of approximately 8 to 10 micrometers, so narrow that only one propagation mode can exist. A single optical fiber operating in single mode eliminates the

Cisco SFP Modules for Gigabit Ethernet Applications

The 1000BASE-ZX SFP operates on standard single-mode fiber-optic link spans of up to approximately 70 km in length. The SFP provides an optical link budget of 21 dB, but the precise link span length

1G SFP LX 1310nm 20km Single mode Transceiver

Optimal Performance and Quality for 1G Networks Featuring a built-in Semtec chip and reliable FP laser / PIN receiver, the SFP module delivers low power consumption and stable optical links for 1G single

100 Gigabit Ethernet

The 40/100 Gigabit Ethernet standards encompass a number of different Ethernet physical layer (PHY) specifications. A networking device may support different PHY types by means of pluggable

Contact Us

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