

Article Overview

10 Gigabit Single-Mode Fiber Optic Machines are SFP+ transceivers designed for long-distance, high-speed Ethernet over single-mode fiber, supporting distances up to 100 km depending on the module type.

Overview

10G single-mode fiber optic machines, commonly in the form of SFP+ transceivers, are used to provide high-performance 10 Gigabit Ethernet (10GbE) connectivity over long distances. These modules are hot-pluggable, allowing installation or replacement without powering down network equipment, and are compatible with switches, routers, and servers from major vendors like Cisco .

Key Specifications

- o Data Rate: 10 Gbps, with some modules supporting 1.25-11.3 Gbps for flexible deployment .
- o Fiber Type: Single-mode fiber (SMF), optimized for long-distance transmission.
- o Wavelength: Typically 1270/1330 nm for BiDi modules or 1310 nm for standard single-mode modules .
- o Connector Type: LC duplex or simplex LC for BiDi modules .
- o Distance Range: Standard modules support up to 10 km; advanced modules can reach 100 km depending on the design and optical power .
- o Operating Temperature: Industrial-grade modules operate from -40°C to +85°C .
- o Compliance: IEEE 802.3ae standard, SFF-8431 electrical specification, and MSA compliance for interoperability .

Features and Benefits

- o Hot-Pluggable: Easy installation and replacement without downtime .
- o Long-Distance Transmission: Ideal for data centers, campus networks, and service provider applications requiring high bandwidth over kilometers of fiber .
- o Low Power Consumption: Efficient operation reduces energy costs and heat generation .
- o EMI Immunity: Optical transmission is immune to electromagnetic interference, ensuring reliable data integrity .
- o Vendor Compatibility: Many modules are Cisco-compatible and support digital optical monitoring for diagnostics .

Applications

- o Data Centers: High-density 10GbE connections between servers and switches.

10 Gigabit Single-Mode Fiber Optic Machine

- o Enterprise Networks: Long-range campus connectivity.
- o Service Providers: Metro and long-haul fiber links.
- o Industrial Networks: Reliable communication in harsh environments with extended temperature modules .

Example Products

- o Cisco 10GBASE SFP+ Modules: Offer hot-swappable 10GbE connectivity with digital optical monitoring and Cisco ID verification .
- o TRENDnet TEG-MGBS10/4: 10 km single-mode SFP modules with LC duplex connectors for gigabit fiber networks .
- o Black Box ACUSFP-SM-10G: 1310 nm single-mode SFP supporting up to 10 km, industrial temperature range, and low power consumption . These modules are essential for high-speed, long-distance fiber optic networks, providing reliable, scalable, and energy-efficient 10GbE connectivity.

Single Fiber Media Converters Versitron's single fiber media converters efficiently convert Ethernet signals into optical signals using

Our LC multimode 550m 1310nm gigabit fiber media converters are designed to covert data signals between 10/100/1000Base-T and

Standard Single-Mode Fiber IEC 60793-2 B1.1 & B1.3 / ITU G.652 Standard single-mode fiber is essentially a thin core (5-8 microns)

10GBase-LR SFP+: 10 Gigabit Ethernet Single Mode SFP+ Module, 10 Gb/s, 1310nm wavelength, Duplex Dual LC,

Scale your fiber network using our flexible and lightweight fiber patch cables. The 10G multi-mode fiber patch cables are ideal for

Single-mode Fiber and 10 Gigabit Ethernet Standard single-mode fiber can address nearly any application, depending on the level of

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

4 Optic Modules Data Sheet ... SFP (form factor) = small form-factor pluggable transceiver SMF (media) = single-mode fiber-optic

This MSA compliant SFP+ transceiver provides 10GBase-LR throughput up to 10km over single-mode fiber

10 Gigabit Single-Mode Fiber Optic Machine

Utilizing LC connectors and operating at a 1310nm wavelength, it enables high-speed data transmission over single-mode fiber for

The L-com FXC-SFP1G-31-10 is an SFP form-factor transceiver, supporting Gigabit Ethernet data rates.

About this item Seamless Conversion of LC Fiber to Copper - This fiber optic to ethernet media

?10GBase-LR SFP+?: 10 Gigabit Ethernet Single mode SFP+ Module, 10 Gb/s, 1310nm wavelength, Duplex Dual

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

Omada 10/100Mbps Multi-Mode Media Converter Business Benefits Extend Network Distance Single

MSA Uncoded SFP Module - 1000BASE-LX - 1GbE Single Mode Fiber (SMF) Optic Transceiver - 1GE Gigabit Ethernet SFP - LC

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