

Article Overview

Gigabit multimode optical modules are SFP transceivers designed for 1Gbps Ethernet over multimode fiber, with types including 1000BASE-SX, BiDi SFPs, and laser-optimized modules compatible with OM1 to OM5 fibers.

Overview of Gigabit Multimode SFP Modules

Gigabit SFP modules are hot-pluggable transceivers that convert electrical signals from switches or routers into optical signals suitable for multimode fiber links, supporting 1Gbps Ethernet connectivity . They are widely used in enterprise, campus, and industrial networks for short-to-medium distance fiber links, offering flexibility without replacing existing hardware .

Common Types of Multimode Gigabit SFPs

o 1000BASE-SX SFP

- o Operates on 50 um or 62.5 um multimode fiber.
- o Typical reach: up to 550 meters on 50 um fiber and 220 meters on 62.5 um FDDI-grade fiber; laser-optimized 50 um fiber can extend up to 1 km .
- o Wavelength: 850 nm.
- o Ideal for short-range LAN and campus connections .

o BiDi (Bidirectional) SFPs

- o Uses a single strand of multimode fiber for both transmit and receive.
- o 1000BASE-BX-D and 1000BASE-BX-U are common standards.
- o Transmit and receive wavelengths are separated (e.g., 1310 nm and 1490 nm) to allow bidirectional communication over one fiber .

o Laser-Optimized Multimode SFPs

- o Designed for OM3, OM4, and OM5 fibers.
- o Support higher data rates and longer distances compared to legacy OM1/OM2 fibers.
- o OM3: 10GbE up to 300 meters; OM4: 10GbE up to 550 meters; OM5: supports wideband WDM for multiple channels at 28 Gbps per channel .

Multimode Fiber Types and Compatibility

- o OM1: 62.5 um core, orange jacket, supports 1GbE up to 275 meters, 10GbE up to 33 meters.
- o OM2: 50 um core, orange jacket, supports 1GbE up to 550 meters, 10GbE up to 82 meters.
- o OM3: 50 um core, aqua jacket, laser-optimized, supports 10GbE up to 300 meters.



Gigabit Multimode Optical Module Products

- o OM4: 50 um core, aqua jacket, enhanced laser-optimized, supports 10GbE up to 550 meters.
- o OM5: 50 um core, lime green jacket, wideband multimode fiber (WBMMF), supports multiple WDM channels for higher aggregate bandwidth .

Key Considerations

- o Distance and fiber type: Ensure the SFP module matches the multimode fiber type and required link distance.
- o Wavelength: Most multimode SFPs use 850 nm; BiDi modules use dual wavelengths for single-fiber operation.
- o Digital Optical Monitoring (DOM): Some SFPs support DOM to monitor optical power, temperature, and other parameters in real time .
- o Backward compatibility: OM3/OM4/OM5 fibers are backward compatible with OM1/OM2 SFPs, but distance may be limited.

Summary

Gigabit multimode optical modules provide flexible, cost-effective 1Gbps connectivity over multimode fiber. The main types include 1000BASE-SX, BiDi SFPs, and laser-optimized modules for OM3/OM4/OM5 fibers. Choosing the right module depends on fiber type, distance, wavelength, and network design requirements, ensuring reliable and efficient Ethernet performance across short to medium distances.

Compatibility in your network is everything, and this SFP Transceiver Module delivers. Use it with any

Perle SFP Optical Transceivers can be used and interchanged on a wide variety

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

Discover the key features and applications of 100G QSFP28 Multimode optical transceiver modules in the context of

Cisco GLC-SX-MM Compatible SFP Module - 1000BASE-SX - 1GbE Multimode Fiber MMF Optic Transceiver - 1GE Gigabit Ethernet

Reliable Gigabit Multimode Fiber Connectivity The OREI FM1GD-MM is a high-performance 1G SFP optical transceiver module

Cisco Transceiver Modules - Learn product details such as features and benefits, as well as hardware and

10 Gigabit Multimode SFP+ Transceivers The 10 Gigabit Multimode SFP+ Transceivers offer high-speed, reliable fiber optic

FS 10GbE SFP+ module solutions provide a wide variety of 10 Gigabit Ethernet connectivity options for

The SFP-M is a high performance and cost-effective module for serial optical data communication applications specified for

Compatibility in your network is everything, and the Intellinet SFP Transceiver Module (model 545006)

Multi-mode optical fiber is a type of optical fiber mostly used for communication over short distances, such as within a building or on a

Discover the XFP-1000-SR a 10G SR multimode module for up to 300m. Cisco compatible - buy now for high-speed SAN networks!

The 10 Gbps Multi-Mode Optical Module, model UACC-OM-MM-10G-D-2, from Ubiquiti is a high

SFP - small form factor - pluggable modules for various optical data communications such as Fast

About this item Seamless Conversion of LC Fiber to Copper - This fiber optic to ethernet media converter kit includes a multimode

Web: <https://www.in-au.co.za>

