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Gigabit Single-Mode Single-Fiber Transceiver fc



Overview

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

Key Takeaways

Gigabit single-mode fiber optic transceivers provide high-speed, long-distance connectivity for 1G Ethernet and 1G Fiber Channel networks using single-mode fiber.Overview

Gigabit single-mode SFP (Small Form-factor Pluggable) transceivers are designed for long-distance fiber optic communication, supporting both Gigabit Ethernet (GbE) and 1G Fiber Channel (FC) applications. They operate over single-mode fiber, which allows data transmission over distances ranging from 2 km to 180 km, depending on the module type and wavelength . These transceivers are hot-pluggable, enabling easy installation and replacement without powering down network devices .

Key Specifications
• Wavelength: Commonly 1310 nm or 1550 nm for long-distance transmission .

• Connector Type: LC Duplex or LC Simplex, depending on the module design .

• Supported Distances:
• Short-range: up to 3 km (simplex LC UPC) for bidirectional modules .

• Medium-range: 10–50 km for standard single-mode SFPs .

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• Long-range: up to 180 km for specialized long-haul modules .

• Digital Diagnostics: Many modules support SFF-8472 standard for real-time monitoring of temperature, voltage, and optical power .

• Compatibility: Works with a wide range of networking devices, including Cisco and other major vendors .

Use Cases

• Enterprise Networks: High-speed backbone connections between switches and routers.

• Data Centers: Fiber Channel storage networks requiring reliable 1G connectivity.

• Telecommunications: Long-distance point-to-point links over single-mode fiber.

• Industrial Applications: Environments requiring durable, plug-and-play fiber solutions.

Advantages

• Long Reach: Single-mode fiber allows transmission over tens to hundreds of kilometers.

• High Reliability: Designed for professional networking environments with stable performance.

• Ease of Use: Hot-pluggable and plug-and-play functionality simplifies network upgrades.

• Monitoring: Digital diagnostics provide real-time operational data for proactive maintenance.

Example Modules

• SO-SFP-1000BASE-L40D: 1310 nm, 1G Ethernet/1G FC, up to 40 km, with digital diagnostics .

• GSFIBER-SFP-50K: 1310 nm, LC connectors, up to 50 km for Gigabit Ethernet .

• Ubiquiti 1G Bidirectional Module: Simplex LC UPC, up to 3 km, suitable for short-range links . These transceivers are essential for high-speed, long-distance fiber networks, providing flexibility, reliability, and compatibility with a wide range of networking equipment.

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Article Content

1 Gigabit Singlemode SFP Fiber Optic Transceivers

Our 1 Gigabit Singlemode SFP Transceivers offer high-performance, reliable connectivity for singlemode

Cisco SFP Modules for Gigabit Ethernet Applications

This data sheet describes the benefits, specifications, and ordering information for the

SFP modules – transceivers for 1/2/4G fibre channel

Related Video Reference

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