Gigabit Fiber Optic Transceiver Single Mode



Overview

Cisco SFP Modules for Gigabit Ethernet Applications This data sheet describes the benefits, specifications, and ordering information for the Cisco SFP Modu.

Key Takeaways

Gigabit single-mode fiber optic transceivers enable high-speed 1Gbps data transmission over long distances using a single optical channel.

Overview

Gigabit single-mode fiber optic transceivers, often in SFP (Small Form-factor Pluggable) modules, are designed to convert electrical signals from network devices into optical signals suitable for single-mode fiber. These transceivers are hot-pluggable, allowing installation or replacement without powering down switches or routers, making them ideal for network upgrades and expansions.

Key Features

Data Rate: Supports 1Gbps Ethernet for reliable high-speed communication. Distance: Single-mode fiber allows long-distance transmission, typically ranging from 10 km to over 180 km, depending on the model and wavelength. Wavelength: Commonly operates at 1310nm or 1550nm for long-reach applications.

Connectors: LC Duplex is standard, with options for LC Simplex, SC, or FC connectors depending on network requirements. Compatibility: Works with a variety of network devices, including Cisco and other MSA-compliant switches. Durability: Metal housing reduces electromagnetic interference and enhances reliability.

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Single-

Mode vs Multi-ModeSingle-mode fiber transmits light through a single channel, minimizing attenuation and supporting long-distance links, typically over 5 miles (8 km) or more). Multi-mode fiber uses multiple channels, suitable for shorter distances (less than 5 miles) with higher attenuation but faster transmission over short links.

Single-

Fiber vs Dual-FiberDual-fiber transceivers use two cores: one for transmitting and one for receiving, commonly used in standard deployments. Single-fiber transceivers transmit and receive on a single core, saving fiber resources in dense cabling environments, which can reduce infrastructure costs by up to 50% in some cases.

Applications

Gigabit single-mode SFP transceivers are widely used in: Enterprise networks for connecting switches, routers, and servers over long distances. Telecom networks for high-speed backbone links. Data centers for interconnecting racks and buildings.

Industrial networks requiring reliable long-reach communication.

Selection Tips

When choosing a single-mode SFP transceiver: Determine the required distance and select the appropriate wavelength. Choose the connector type compatible with your fiber infrastructure. Ensure device compatibility with your switches or routers.

Consider single-fiber vs dual-fiber based on cabling constraints and cost efficiency. Verify hot-pluggable support for easy maintenance and upgrades. Gigabit single-mode fiber optic transceivers provide a cost-effective, reliable solution for long-distance, high-speed network connectivity, balancing performance, compatibility, and scalability.

Article Content

Cisco SFP Modules for Gigabit Ethernet Applications

This data sheet describes the benefits, specifications, and ordering information for the Cisco SFP Modules for Gigabit Ethernet Applications.

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

SFP Transceiver

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Utilizing LC connectors and operating at a 1310nm wavelength, it enables high-speed data transmission over single-mode fiber for distances up to 10 kilometers. This module provides a reliable long-reach

1 Gigabit Singlemode SFP Fiber Optic Transceivers

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

100 Gigabit Ethernet

Provide physical layer specifications (PHY) for operation over single-mode optical fiber (SMF), laser optimized multi-mode optical fiber (MMF) OM3 and OM4, copper cable assembly, and backplane.

BlueOptics BO28C3443620DIN cSFP Fiber Optic Transceiver | AiO.lv

Product information Description The BlueOptics BO28C3443620DIN is a high-performance cSFP fiber optic transceiver module engineered for reliable 1.25 Gigabit Ethernet connectivity. This module is

Contact Us

Continue your research online:

Website: https://alfa-pro.co.za
Technical inquiry: https://alfa-pro.co.za/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved