

Single-mode optical module SFP-GE



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

The SFP-GE-Single Mode is a small form-factor pluggable Gigabit Ethernet optical module designed for single-mode fiber, supporting distances up to 10 km and often requiring paired modules for bidirectional operation.

The SFP-GE-Single Mode module is a Gigabit Ethernet (1 Gbps) optical transceiver that connects network devices such as switches and routers over single-mode fiber (SMF). It is hot-swappable, allowing installation or replacement without powering down the device, and typically uses an LC connector for full-duplex communication .

Key Specifications

- Fiber Type: Single-mode fiber (SMF)
- Wavelength: Commonly 1310 nm for standard LX modules; bidirectional (BIDI) modules use paired wavelengths, e.g., 1310 nm transmit / 1490 nm receive
- Transmission Distance: Up to 10 km for standard single-mode SFPs; some extended-range modules can reach 40–70 km depending on the model
- Interface: LC duplex connector for standard modules; single-fiber BIDI modules use one fiber for both transmit and receive
- Hot-Swappable: Yes, supports easy replacement without network downtime

- Digital Optical Monitoring (DOM): Some modules support DOM to monitor real-time parameters such as optical output/input power, temperature, and voltage
- Bidirectional (BIDI) Operation

Single-fiber BIDI SFP modules must be used in pairs, with one module transmitting at one wavelength and the other receiving at the complementary wavelength. For example, SFP-GE-LX-SM1310-BIDI must be paired with SFP-GE-LX-SM1490-BIDI to establish a full-duplex link over a single fiber strand .

Compatibility and Deployment

- Compatible with a wide range of switches and routers that support SFP ports
- Can interoperate with other 1G SFPs as long as they follow the 1000BASE-LX/LH or 1000BASE-BX10 standards
- For multimode fiber connections, a different SFP type (e.g., 1000BASE-SX) is required, as single-mode SFPs are optimized for long-distance SMF links
- When using legacy multimode fiber with LX modules, a mode-conditioning patch cable may be required to prevent signal distortion

Summary

The SFP-GE-Single Mode module is ideal for long-distance Gigabit Ethernet connections over single-mode fiber, offering flexibility, hot-swappable convenience, and optional monitoring features. For single-fiber BIDI modules, proper pairing is essential to ensure full-duplex communication. These modules are widely used in enterprise and carrier networks for reliable, high-speed optical connectivity .

Article Content

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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

SFP-GE-LX-SM1310-IN

SFP-GE-LX-SM1310-IN Gigabit Single-Mode 10km Optical Module Specification

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Huawei eKitEngine Optical Module Datasheet

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Single-mode vs Multimode SFP, What's the Difference?

In the optical communication industry, single-mode SFP and multi-mode SFP are the two

StarTech Juniper SFP-1GE-LX Compatible SFP Module

100% JUNIPER SFP-1GE-LX COMPATIBLE SFP TRANSCEIVER: Designed, programmed and tested to work with compatible

Optic Modules Datasheet

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

JT-1G-SFP-DD-LR

JTOPTICS® 1Gb/s transceiver module supports up to 20km link lengths over LC duplex SMF fiber.

XG-SFP-LR-SM1310 10GBASE-LR SFP+ 1310-nm 10

The XG-SFP-LR-SM1310 is aligned to IEEE 10GBASE-LR optical specifications and supports a link length

Types of Optical Modules

Huawei S series devices support optical modules of the following encapsulation types: CFP, QSFP+, QSFP28, XFP, SFP, eSFP,

SFP Optical Transceiver | SFP Optical Module | Perle

Multimode and single-mode fiber Gigabit Ethernet, Fast Ethernet, Fiber channel, ATM/SONET, SDH Hot-pluggable with durable

Cisco Transceiver Modules

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

GE eSFP Optical Modules

This document provides an overall description of the CE12800 series switches hardware, helping you obtain detailed information

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02315200

And the Huawei SFP-GE-LX-SM1310 Optical Transceiver, eSFP, GE, Single

SFP-GE-LX-SM1310 (02315200)

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Understanding Optical Modules Understanding Copper

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And the Huawei SFP-GE-LX-SM1310 Optical Transceiver, eSFP, GE, Single

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

