

Article Overview

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.

Overview

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

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

- o Compatible with a wide range of switches and routers that support SFP ports
- o Can interoperate with other 1G SFPs as long as they follow the 1000BASE-LX/LH or 1000BASE-BX10 standards
- o 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

o 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 .

You can use different levels of 1.25 Gbit/s SFP/eSFP optical modules with GE interfaces and 10 GE interfaces. The

SFP Optical Modules (Small Form-factor Pluggable) are compact, hot-swappable transceivers used for

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

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

Our transceiver modules are available for commercial and industrial applications, supporting varying distances from 500m to 160km,

Huawei 02313URF Datasheet Huawei 02313URF SFP-GE-LX-SM1310 Optical Transceiver, eSFP, GE, Single-mode Module (1310nm,

FS gigabit ethernet transceiver solutions provide fibre or copper options including 1000BASE-SX,

About this item 100% Juniper compatible: Meets MSA standards and is designed, programmed and tested to perform identically to

Single Mode vs Multimode SFP Modules: Compare fiber types, wavelengths, cost, and

Industrial Gigabit Fiber SFP Optical Transceiver Module, 1000Base-EX (LC) Single-Mode Port, 40 km (25 mi.), Wavelength 1550 nm,

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

Huawei SFP-GE-LX-SM1310 Optical Transceiver, eSFP, GE, Single-mode Module (1310nm, 10km, LC)

02315200

This installation note provides the installation instructions for the Cisco small form-factor pluggable (SFP) and SFP+

Small Form-factor Pluggable Small Form-factor Pluggable connected to a pair of fiber-optic cables Small Form-factor Pluggable

Optical modules are encapsulated in different modes to provide different structures. Huawei S series devices support optical modules

Buy 1G singlemode SFP transceivers compatible with various brands including Cisco, Juniper, HP & Netgear. These high

Web: <https://supremeacademicresearch.co.za>

