

Article Overview

Huawei SFP modules are standard small form-factor pluggable transceivers, while eSFP modules are enhanced versions with monitoring capabilities for voltage, temperature, and optical performance.

Overview

SFP (Small Form-Factor Pluggable) modules are compact, hot-swappable optical transceivers used for converting electrical signals to optical signals and vice versa. They support various communication standards such as Gigabit Ethernet, Fiber Channel, and SONET, and are compatible with LC fiber connectors. SFP modules are widely used in Huawei switches, routers, and OLT systems for both single-mode and multi-mode fiber applications. eSFP (Enhanced SFP) modules have the same physical form factor and basic functionality as SFP modules but include enhanced monitoring features. These features allow network administrators to monitor module voltage, temperature, bias current, transmit optical power, and receive optical power, which helps in proactive network management and troubleshooting.

Key Features and Differences

Feature	SFP	eSFP
Form Factor	Small, hot-swappable	Same as SFP
Monitoring	No	Yes (voltage, temperature, optical power)
Transmission Rate	125 Mbit/s to 5 Gbit/s (unidirectional)	Same as SFP
Fiber Type	Single-mode or multi-mode	Same as SFP
Distance	Varies by model (up to 80 km for single-mode)	Same as SFP
Compatibility	Can substitute for eSFP if optical specs match	Can substitute for SFP if optical specs match

Both SFP and eSFP modules can be interchanged as long as they have the same optical power, sensitivity, and transmission distance. They are available in single-fiber unidirectional and bidirectional types, supporting transmission rates from 125 Mbit/s up to 5 Gbit/s for unidirectional modules and up to 2.67 Gbit/s for bidirectional modules.

Applications

- o Huawei PON Networks: eSFP modules are commonly used in GPON, XG-PON, XGS-PON, and 50G-PON networks, supporting distances up to 60 km and enabling high-performance FTTH deployments.
- o Enterprise Networks: SFP modules are used in switches and routers for Gigabit Ethernet and Fiber Channel connections, supporting both short-range (multi-mode) and long-range (single-mode) links.
- o Monitoring and Maintenance: eSFP modules provide real-time monitoring, which is critical for carrier-grade networks and large-scale deployments to prevent downtime and optimize performance.

Examples of Huawei Modules

- o SFP-FE-SX-MM1310: Multi-mode, 100M/155M, 2 km, LC connector.
- o eSFP-FE-LX-SM1310: Single-mode, 100M/155M, 15 km, LC connector with monitoring.

Huawei optical module esfp and sfp

o S-SFP-FE-LH40-SM1310: Single-mode, 100M/155M, 40 km, LC connector, eSFP type .

Conclusion

Huawei SFP and eSFP modules provide flexible, hot-swappable optical connectivity for a wide range of network applications. SFP modules are standard transceivers for basic optical links, while eSFP modules add monitoring capabilities for enhanced network management. Both types are compatible with Huawei devices as long as optical specifications match, making them versatile solutions for enterprise and carrier networks .

The eSFP and SFP optical modules have the same functions and services. They can substitute for each other as long as they have

Optical modules are encapsulated in different modes to provide different structures. Huawei routers support optical modules of the

This document provides specifications and details about the SFP-GE-LX-SM1310 optical module for Huawei devices.

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

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

An eSFP optical module is an SFP optical module that supports monitoring of voltage, temperature, bias current, transmit optical

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

Pluggable Modules for Interfaces Important Notes About Using Optical Modules Certified for Huawei Switches

An eSFP module is an SFP module that supports monitoring of voltage, temperature, bias current, transmit optical power, and

Description 40GBase-iSR4 Optical Transceiver, QSFP+,40G,Multi-mode (850nm,0.15km,MPO) (connecting

to one QSFP+ or four

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1.25 Gbit/s SFP/eSFP Optical Module You can use different levels of 1.25 Gbit/s SFP/eSFP optical modules with GE

The eSFP-GE-SX-MM850 optical module is a Huawei Gigabit multimode optical module with DOM/DDM support,

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