

Article Overview

Huawei optical-to-electrical modules allow a single interface to operate in either optical or electrical mode, supporting flexible connectivity for GE and 10GE ports.

Module Types and Specifications

Huawei offers several types of optical/electrical modules:

- o 100 Mbit/s eSFP modules: Used on GE optical ports of Combo ports, with a wavelength of 1310 nm and a transmission distance up to 15 km .
- o 1 Gbit/s SFP/eSFP modules: Compatible with GE interfaces for interconnection between optical and electrical ports. Wavelengths include 850 nm, 1310 nm, or 1550 nm, with distances from 0.5 km to 100 km .
- o 10 Gbit/s SFP+ modules: Designed for 10 GE optical ports, supporting wavelengths of 850 nm, 1310 nm, or 1550 nm, with transmission distances up to 80 km .
- o Hybrid optical-electrical modules: These modules allow simultaneous data transmission via optical fiber and PoE power delivery via electrical connections when used with second-generation hybrid cables . Modules are classified by single-mode or multimode fibers, with single-mode supporting long-distance transmission and multimode suitable for short-distance, cost-effective connections .

Combo Interface Operation

Huawei Combo interfaces consist of one optical and one electrical port sharing a single forwarding interface. Only one port can be active at a time:

- o Default state: Electrical interface active.
- o Switching to optical: Use the command `combo enable fiber` in interface mode.
- o Switching back to electrical: Use `undo combo enable fiber` . After switching, the corresponding SFP module can operate normally. Ensure the same configuration is applied on the peer device to maintain connectivity .

Configuration and Troubleshooting

- o Verify fiber and module compatibility (single-mode vs multimode) to avoid connection issues .
- o Avoid using modules with a higher rate than the interface (e.g., 10G module on a 1G port), .
- o Check port status using commands like `display interface xgigabitethernet0/0/2` and `display transceiver interface xgigabitethernet 0/0/2 verbose` to monitor optical power, wavelength, and module health .
- o For hybrid setups, second-generation hybrid cables simplify connections by combining optical data and PoE power in a single port, reducing cabling complexity .

Practical Use Cases

- o Direct connection: Connect a hybrid cable from a switch's hybrid optical-electrical port to an AP or remote unit.
- o HDF-based connection: Use hybrid cables to connect through Huawei Distributed Fiber (HDF) units for extended network deployments . Huawei optical-to-electrical modules provide flexible, high-speed connectivity for enterprise networks, supporting both optical and electrical interfaces while ensuring compatibility with hybrid cabling solutions. Proper configuration and module selection are essential for optimal performance and reliability.

Fundamentals of an Optical Module As an important part of fiber-optic communication, an optical module is a

Displaying Optical Module Information You can use the display commands to view information about the optical module on an

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

If not, replace it with a Huawei-certified optical module. If the optical module is installed on a GE port, run the display interface

Overview ES5MFMT00001 is a 24-port hybrid cable terminal box, which offers 24 empty ports but no PDL optical-electrical

This article summarizes several solutions for using optical modules with switches and common problems encountered

Back **PREVIOUS:** How To View Port Status And Optical Module Information On Cisco Switches **NEXT:** Guidelines

Optical transceivers are widely applied in switches, network cards, routers and other communication devices.

Optical/Electrical Modules This chapter describes hardware information for optical/electrical modules of the USG6000E.

Use the command display transceiver to view the optical module information of all optical ports, and use the command

When certifying an optical module, Huawei switches comprehensively verify optical module functions to

ensure the optical module

If it is not a Huawei-certified optical module, replace it with a Huawei-certified optical module. If the optical module is installed on a

Overview & Thematic Scope This FAQ addresses one of the most critical operational decisions for network engineers managing

Huawei offers four models of original electrical port SFP-GE-T modules on its official website. Moduletek Laboratory

Optical Modules on the Local and Remote Devices Cannot Communicate Fault Description A switch is connected to a

Installing Optical Transceivers and Connecting Optical Fibers This section describes how to install optical transceivers on the SFP or

Web: <https://www.millstraining.co.za>

