

What are the five types of gigabit optical modules



AI Overview

Gigabit optical modules are primarily classified by fiber type, interface, and package form, including single-mode, multi-mode, single-fiber, dual-fiber, and various form factors like SFP, GBIC, and SFP+. Classification by Fiber and Interface

Single-Fiber Optical Modules: Use only one fiber for both transmitting and receiving signals. They typically have LC or SC interfaces and are compatible with single-mode fibers (OS2), supporting transmission distances up to 160 km.

Dual-Fiber Optical Modules: Use two fibers, one for transmitting and one for receiving. They usually have duplex LC interfaces and can work with single-mode or multi-mode fibers. Multi-mode modules with OM2 fiber can reach distances up to 550 meters, while single-mode modules can reach 160 km.

Classification by Package/Form Factor

Gigabit optical modules also differ by their physical packaging, which affects compatibility and port density:

- GBIC (Gigabit Interface Converter):** Early standard, hot-swappable, uses SC interface, widely used in the 1990s.
- SFP (Small Form-Factor Pluggable):** Miniaturized GBIC, LC interface, supports hot-swapping, common in enterprise networks.
- SFP+:** Enhanced SFP for higher rates, more sensitive to EMI, used for 10 Gbps applications.
- XFP:** 10 Gbps module, larger than SFP+, LC interface.
- SFP28:** Same size as SFP+, designed for 25 Gbps networks.
- QSFP / QSFP+ / QSFP28 / QSFP-DD:** Quad small form-factor pluggable modules for 40 Gbps, 100 Gbps, and higher, used in data centers.
- OSFP, CXP, CFP series, XENPAK, XPAK/X2:** Other specialized packages for high-speed or long-distance applications.

Classification by Operating Environment

Gigabit optical modules can also be selected based on operating temperature:

- Commercial (0°C–70°C):** Suitable for indoor environments like enterprise computer rooms.
- Extended (-20°C–85°C) or Industrial (-40°C–85°C):** Suitable for outdoor or har...

Article Content

Cisco SFP and SFP+ Transceiver Module Installation

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

Cisco Transceiver Modules

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

Cisco Optics | Transform Your Network

Get the highest quality, performance-leading optical transceivers for any network architecture. Find the transceiver model to fit your network.

Everything You Need to Know About Optical Modules

Optical modules are electronic devices used in communication systems to transmit optical signals. These modules convert electrical signals into optical

100 Gigabit Ethernet

The 40/100 Gigabit Ethernet standards encompass a number of different Ethernet physical layer (PHY) specifications. A networking device may support different PHY types by means of pluggable

Cisco SFP vs GBIC vs XFP vs SFP+: The Practical

Learn the differences between SFP, SFP+, GBIC, and XFP modules - speeds, distances, and compatibility, from Network-Switch experts.

Optical Module Guide: Demystifying Optical Modules

There are various types of optical modules, including SFP (Small Form-factor Pluggable), SFP+, QSFP (Quad Small Form-factor Pluggable), and

Support Documents and Downloads

Search technical documentation and downloads including firmware and drivers.

The Ultimate Guide to SFP Modules (2026): Types, Speeds

The SFP (Small Form-factor Pluggable) is a compact, hot-pluggable optical transceiver module used for telecommunication and data communications applications. Before its birth, The Networking world

Different types of transceivers(GBIC, SFP, SFP+, SFP28, QSFP,

Understand different types of transceivers such as GBIC, SFP, SFP+, SFP28, QSFP, QSFP+, QSFP28 and CFP with its features and applicability.

Gigabit SFP Module: A Complete Guide to 1G SFP Transceivers

Learn what a gigabit SFP module is, how it works, main types, key specifications, and common use cases to choose the right 1G SFP for your network.

What Are the 5 Best Types of Optical Modules?

In order to meet different application requirements, optical modules with different parameters and functions emerge as the times require. The

What types of optical modules are there?

With the continuous development of technology, optical modules will appear in more diverse types and specifications, providing more efficient and reliable solutions

What Are the 5 Best Types of Optical Modules?

According to different application fields, optical modules can be divided into SDH optical modules, Fibre Channel optical modules, Ethernet optical modules and digital video optical modules.

What Are The Types Of Gigabit Optical Modules

Gigabit optical modules are mainly used in Gigabit switches, Gigabit routers, servers, firewalls and other devices. Of course, they can also be used in storage devices, because gigabit

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right module for your fiber network.

Comprehensive Guide to Optical Transceiver

Introduction Optical modules are critical components in fiber optic communications, enabling the conversion between electrical and optical signals.

What Is an SFP Module? — Complete Guide to SFP, SFP+ & SFP28

Learn what an SFP module is, how it works, its types, specifications, compatibility, and use cases in modern networks, including updated standards and trends for 2026.

HMS Networks

HMS creates products that enable industrial equipment to communicate and share information with software and systems. In short: Hardware Meets Software™.

Fiber Types in Gigabit Optical Communications

Fiber optic cables are the medium of choice in telecommunications infrastructure, enabling the transmission of high-speed voice, video, and data traffic in enterprise and service provider networks.

What Are The Types Of Gigabit Optical Modules

The single fiber optical module is very suitable for long-distance backbone and man applications, and its wiring cost will be relatively low. Gigabit optical modules are mainly used in

What are the current types of gigabit optical modules?

For the switch, the optical port of the frame switch can generally support the use of gigabit optical module for the 10-gigabit optical port, and the use of 100-gigabit optical module for the

Understanding the Differences Between OM4 and OM5

Multimode fiber is a staple of fiber-optic cable infrastructure in data centers and campus networks. The ISO/IEC 11801 standard defines five classes

Cisco 40GBASE QSFP Modules Data Sheet

The Cisco® 40GBASE QSFP (Quad Small Form-Factor Pluggable) portfolio offers customers a wide variety of high-density and low-power 40

Introduction to GPON Optical Modules and Their Classification

In this blog post, we'll provide an introduction to GPON optical modules and explore the key classification standards that define their performance and compatibility.

ITPro Today, Network Computing, IoT World Today combine

ITPro Today, Network Computing and IoT World Today have combined with TechTarget . The page you are looking for may no longer exist.

What are the current types of gigabit optical modules?

It can be divided into SPF gigabit electrical port optical module, BIDI SFP gigabit optical module, CWDM SFP gigabit optical module, DWDM SFP gigabit optical module.

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.sphplantsales.co.za>

Email: info@sphplantsales.co.za

Phone: +27 64 827 3915

Address: Unit 9, Highveld Technopark, 43 Atlas Road, Johannesburg, 2196,
South Africa

This document is for informational purposes only. Specifications subject to
change without notice.

