Supports gigabit and 10-gigabit optical modules

Overview

The Cisco® 10GBASE SFP+ modules (Figure 1) give you a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport applications.

Key Takeaways

Yes, both gigabit (1 Gbps) and 10-gigabit (10 Gbps) optical modules exist, each designed for different network speeds and applications.

Gigabit Optical Modules

Gigabit optical modules operate at a transmission rate of 1 Gbps (1000 Mbps) and are widely used in enterprise networks, data centers, and video transmission due to their balance of bandwidth and cost. Common types include: SFP (Small Form-factor Pluggable)GBIC (Gigabit Interface Converter) These modules support various transmission distances, ranging from 80 meters to over 120 kilometers, depending on fiber type and module specifications. They are compatible with Gigabit Ethernet, SONET/SDH networks, and can include specialized variants like BIDI, CWDM, and DWDM SFPs for different wavelength and multiplexing requirements.

10-Gigabit Optical Modules10-Gigabit optical modules provide 10 Gbps transmission speed, suitable for high-bandwidth applications such as cloud computing, big data, high-definition video, and high-performance computing. Common form factors include: SFP+XFPX2 These modules are standardized under IEEE 802. 3ae, 802.

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3ak, and 802. 3an, and can support transmission distances from hundreds of meters on multimode fiber to up to 80 kilometers on single-mode fiber. They are used in 10G Ethernet, SONET with STM-64/OC-192 rates, and 10G Fibre Channel.

10G modules often require higher-level equipment and have higher costs compared to gigabit modules. Key DifferencesFeatureGigabit Module10-Gigabit ModuleTransmission Rate1 Gbps10 GbpsCommon Form FactorsSFP, GBICSFP+, XFP, X2Typical ApplicationsEnterprise networks, standard data centersHigh-performance computing, cloud, large data centersTransmission DistanceUp to 120 km (single-mode)Up to 80 km (single-mode)Cost & EquipmentLower cost, widely compatibleHigher cost, requires advanced equipmentPractical ConsiderationsGigabit modules are ideal for small to medium-sized enterprises or scenarios where long-distance transmission is needed without extremely high bandwidth.

10-Gigabit modules are preferred for environments demanding high-speed, low-latency, and high-capacity data transfer, such as modern data centers and cloud infrastructure. Identification of modules can be done via module labeling, e.g., 1. 25G for gigabit SFP and 10G for SFP+ modules, along with wavelength and distance specifications.

In summary, both gigabit and 10-gigabit optical modules are widely available, with the choice depending on network speed requirements, distance, and budget considerations.

Article Content

Cisco 10GBASE SFP+ Modules Data Sheet

The Cisco® 10GBASE SFP+ modules (Figure 1) give you a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport applications.

10G SFP+ Optical Transceivers | Transceiver Module

FS 10GbE SFP+ module solutions provide a wide variety of 10 Gigabit Ethernet connectivity options for data centers, enterprise wiring closets, Internet Service

Differentiating the 1 gigabit SFP and 10 gigabit SFP+ optic modules

Topic F5 manufactures and ships two different SFP optics that look identical in size and shape: the one gigabit SFP and 10 gigabit SFP+ modules. You can identify the modules by

10 Gigabit SFP+ Fiber Optic Transceivers | High-Speed & Reliable

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Our 10 Gigabit SFP+ transceivers are designed to provide high-speed fiber optic connectivity for network switches and media converters equipped with standard SFP ports. These transceivers offer speeds

Arista Optics Modules and Cables

Arista''s Optical Modules and Cable portfolio offer a wide variety of high-density and low-power 800G (dual 400G), 400G, 200G, 100G, 50G, 40G, 25G, 10G, 1G, and 100M Ethernet connectivity options

Introduction of 10G SFP+ Optical Modules

10G SFP+ Optical Module is a type of SFP+ transceiver that supports 10 Gigabit per second (10Gbps) data rates and is an enhanced version of the standard SFP (Small Form-factor

10G Transceivers for Gigabit Ethernet Networks | Carritech Optics

Supporting 10 Gigabit Ethernet and 10G Fibre Channel, these optical modules bridge the gap between gigabit infrastructure and higher-speed technologies, offering the ideal balance of

Is SFP Compatible With SFP+? Can 10G SFP+ Run at 1G SFP

SFP+ supports 8 Gbit/s Fibre Channel, 10 Gigabit Ethernet and Optical Transport Network standard OTU2. It is a popular industry format supported by many network component vendors.

Optic Modules Datasheet

datasheet is intended to guide the user through the various options available when choosing an optic module for a given platform depending on the architecture. The following table lists the different

Optic Modules Datasheet

These platforms support multiple interface types and technologies such as Ethernet, ATM, and SONET. Depending on the deployment scenario, they support different pluggable optic modules that can be

100GBASE QSFP-100G Modules Data Sheet

QSFP-100G Optical modules Features and benefits of Cisco QSFP modules Hot-swappable input/output device that plugs into a 100G Gigabit

Optical Modules Market Research Report 2034

Optical Modules Market Outlook 2025-2034 The global optical modules market was valued at $14.8 billion in 2025 and is projected to reach $39.6 billion by 2034, advancing at a compound annual

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Gigabit Ethernet

Gigabit Ethernet was the next iteration, increasing the speed to 1000 Mbit/s. The initial standard for Gigabit Ethernet was produced by the IEEE in June 1998 as

An introduction to SFP ports on a Gigabit switch

SFP modules support single and multimode fiber optic cables and Cat5, Cat6, Cat6a and Cat7 twisted-pair copper. SFP modules designed for fiber support a variety of wavelengths and

Cisco 40 Gigabit Modules

Cisco''s Transceiver Module Group delivers industry-leading, standards-compliant 40 Gigabit pluggable transceiver modules.

Ubiquiti SFP+ Module UACC-OM-MM-10G-D-20

Ubiquiti SFP+ Module The 10 Gbps Multi-mode Optical Module is a duplex transceiver that delivers up to 10 Gbps speed over distances up to 300 meters. Optimize the network''s performance with 10 Gigabit

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