

A 10G optical module



AI Overview

A 10G optical module is a transceiver that enables 10 Gigabit per second (10Gbps) data transmission over fiber or copper connections, commonly used to link switches, routers, and servers.

Overview A 10G optical module is a type of SFP+ (Small Form-factor Pluggable Plus) transceiver designed to support 10Gbps data rates. It functions as both a transmitter and receiver, converting electrical signals from networking devices into optical signals for fiber or electrical signals for copper cabling, and vice versa. These modules are widely used in data centers, enterprise networks, and telecom environments to provide high-speed connectivity between switches, routers, and servers.

Types of 10G Optical Modules 10G optical modules are categorized based on transmission distance, fiber type, and wavelength:

- SR (Short Reach):** Operates at 850nm over multimode fiber (MMF), supporting distances up to 300–400 meters. Ideal for intra-building or data center connections.
- LR (Long Reach):** Operates at 1310nm over single-mode fiber (SMF), supporting distances up to 10 km. Suitable for campus networks or inter-building links.
- ER (Extended Reach):** Operates at 1550nm over single-mode fiber, supporting distances beyond 40 km, used for long-haul or metropolitan area networks.
- LRM (Long Reach Multimode):** Uses 1310nm over multimode fiber for distances up to 220 meters, bridging the gap between SR and LR.

Key Features

- Form Factor:** SFP+ modules are compact and backward-compatible with SFP slots but optimized for 10G speeds.
- Connector Types:** Typically LC duplex for fiber or Direct Attach Copper (DAC) for short-range copper connections.
- Power Efficiency:** Usually consumes 1W or less, making it more efficient than older XFP modules.
- Flexibility:** Can be swapped to upgrade network speed without replacing the entire device.

Applications 10G optical modules are used to:

- Connect switches, routers, and servers in high-speed networks.
- Build data center interconnects and enterprise backbones.
- Support Fibre Channel, 10G Ethernet, and telecom networks.

In summa...

Article Content

10G Optical Modules: Short-Range vs. Long-Range

Understand short-range and long-range 10G optical modules in terms of distance, budget, energy use, and scalability to make the right choice.

10G BiDi SFP+ TX1550nm/RX1490nm 70KM LC Optical Transceiver

Get 10G BiDi SFP+ TX1550nm/RX1490nm 70KM LC Optical Transceiver from ETU-Link Technology CO., LTD, we supply excellent SFP+ 10G BiDi 70KM SFP Module. Long using life, high

HTF DWDM equipment, OTN Solution, QSFP28 OSFP

HTFuture offers industry-leading fiber optic products and WDM system solutions with global recognition for excellence and innovation.

10G Multi-Mode Optical Module

SFP+ transceiver that supports 10G connections up to 400 m using multi-mode fiber with a duplex LC UPC connector.

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

SFP Optical Transceiver Modules for Long Distance: A Complete

Discover everything you need to know about SFP optical transceiver modules for long-distance fiber transmission. Compare LX, EX, ZX models and choose the right module for your

H3CSFP-XG-LX-SM1310-S 10G SFP+ Multi-mode Optical Module

High quality H3CSFP-XG-LX-SM1310-S 10G SFP+ Multi-mode Optical Module from China, China's leading product market Fibre Channel Switch product market, With strict quality control Fibre

400G Optical Modules Explained: SR4 Vs. DR4 Vs. FR4 Vs. LR4

Key differences between SR4, DR4, FR4, and LR4 400G optical modules. Expert advice from Asterfusion engineers to optimize your data center network.

Ubiquiti 10G CWDM Single-Mode Optical Module • SFP+ • 10/1GbE •

Product information "Ubiquiti 10G CWDM Single-Mode Optical Module • SFP+ • 10/1GbE • 1270nm • Single Pack • UACC-OM-SFP10-1270" SFP+-Transceiver für CWDM, der 10G-Verbindungen bis zu

Ubiquiti 10 Gbps Bidirectional Single-Mode Optical Module

Ubiquiti 10 Gbps Bidirectional Single-Mode Optical Module Single-mode, simplex, fiber transceiver module. The 10 Gbps Bidirectional Single-mode Optical Module is a simplex transceiver that delivers

Differences Between Optical Modules SFP, SFP+, CFP, XFP, QSFP?

At present, 40G optical module and 100G optical module price is too high, power consumption is too large, and 10G optical module rate can not meet the network demand, so 25G

Optical Transceiver: SFP vs SFP+ vs QSFP28 vs QSFP-DD

This article provides a comprehensive comparison of mainstream optical transceivers, including SFP, SFP+, QSFP+, QSFP28, and QSFP-DD. It explains their technical differences,

10G BiDi SFP+ 20km Tx1270/Rx1330

10GBASE-BX20 10G BiDi SFP+, 20km single fiber, Tx1270/Rx1330nm, 9dB budget, DOM. Matched-pair module. EU stock + lifetime warranty. €16.33.

SFP Optical Transceiver | SFP Optical Module | Perle

For example, by simply replacing the pluggable optical transceiver, a media converter that was originally used in a multimode network can be re-configured to operate over a CWDM network. Perle SFP

10G Optical Module Guide: Compare LRM, SR, LR, ER, ZR for the

What Is a 10G Optical Module? A 10G optical module (also called 10G transceiver or SFP+ module) converts electrical signals into optical signals for high-speed data transmission over

Optical Transceiver Pricing: Cost Ranges by Speed and Type

See practical price ranges for 1G–100G optical transceivers, DAC/AOC options, and why cost varies by speed, reach and technology — buying tips included.

Cisco 10GBASE SFP+ Modules Data Sheet

The Cisco SFP-10G-LR-X is a multirate 10GBASE-LR, 10GBASE-LW, and OTU2/OTU2e module for extended operating temperature range. It supports

10G Transceivers: Types, Distances & Buying Guide

Choosing the right 10G module affects reach, cost, power, and compatibility. This guide summarizes the common 10G transceiver types, clarifies practical distance

10GE SFP+ Optical Modules

Single-fiber bidirectional (BIDI) optical modules must be used in pairs. For example, SFP-10G-BXU1 must be used with SFP-10G-BXD1.

10GB SFP Module Guide: Types, Specs, and How to Choose

Learn everything about 10GB SFP modules, including types, specifications, compatibility, and how to choose the right 10G SFP+ transceiver for your network.

10G Bidirectional Single-Mode Optical Module

SFP+ transceiver that supports 10G connections up to 10 km using single-mode fiber with a simplex LC UPC connector.

Ubiquiti 10G Single-Mode Optical Module UACC-OM-SM-10G-D-2

Ubiquiti 10G Single-Mode Optical Module SFP+ transceiver that supports 10G connections up to 10 km using single-mode fiber with a duplex LC UPC connector.
Max data rate: 10 Gbps Compatible with

40G QSFP+ Optical Transceivers Complete Guide | Fibrecross

A 40G QSFP+ optical transceiver is a compact, hot-pluggable module that combines four 10G lanes into one 40Gbps Ethernet interface. It works by transmitting and receiving high-speed optical signals

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

What is SFP Port? Everything You Need to Know

What is an SFP port? The SFP port also refers to a Small Form-factor Pluggable port. It is a compact mechanical slot that accepts an SFP module insert for high-speed data transmission

Contact Us

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