

10 Gigabit Ethernet Optical Interface Module



AI Overview

10 Gigabit Ethernet (10GbE) optical connections use SFP+ transceivers paired with fiber cables, supporting distances from 30 meters to 40 kilometers depending on the module type.

Types of 10G SFP+ Optical Modules

- Short-Range (SR) Modules**: Operate at 850nm wavelength over multimode fiber (MMF). Typical reach: up to 300 meters using OM3/OM4 fiber. Connectors: Duplex LC. Example: 10Gtek 10GBASE-SR SFP+ supports OM1/OM2/OM3/OM4 multimode fiber and is compatible with Cisco, Meraki, Ubiquiti, and other switches.
- Long-Range (LR) Modules**: Operate at 1310nm wavelength over single-mode fiber (SMF). Typical reach: up to 10 kilometers. Connectors: Duplex LC. Suitable for LAN and MAN networks requiring longer distances.
- Extended-Range (ER) Modules**: Operate at 1550nm wavelength over single-mode fiber. Typical reach: up to 40 kilometers. Ideal for metro Ethernet, campus backbone, and data center interconnects. Example: SFP-10G-ER modules provide hot-pluggable, high-speed 10GbE links with real-time monitoring.

Fiber Cable Compatibility

- Multimode Fiber (MMF)**: OM1, OM2, OM3, OM4 for SR modules.
- Single-Mode Fiber (SMF)**: OS1/OS2 for LR and ER modules.

Connectors: Duplex LC is standard for most SFP+ modules.

Deployment Considerations

- Hot-swappable**: SFP+ modules can be installed without powering down devices.
- Digital Optical Monitoring (DOM)**: Many modules provide real-time diagnostics for signal quality.
- Compatibility**: Ensure the module is compatible with your switch, router, or NIC. Many modules are multi-vendor compatible, but checking firmware support is recommended.
- Direct-Attach Cables (DACs)**: For very short distances (up to 30 meters), 10GBASE-T SFP+ modules can use CAT6A/CAT7 copper cables as a cost-effective alternative.

Summary

For 10GbE optical connections, choose the SFP+ module based on distance and fiber type: SR...

Article Content

What Is 10GBASE-LR? SMF 1310nm 10km SFP+ Explained

It is typically implemented using SFP+ transceivers and defined under IEEE 802.3 specifications. 10G-LR module has become one of the most widely deployed 10G optical standards in enterprise

10G SFP+ Transceivers | Optical Interconnect | Amphenol

Amphenol's 10G SFP+ optical modules include SFP+ AOC. They are compliant with SFP+ MSA, SFF-8431 and SFF-8472, and are mainly used in

Cisco Transceiver Modules

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

10G BiDi SFP+ 20km Tx1270/Rx1330

The BiDi-10G-SFP-20A (Tx1270/Rx1330) will pair with any SFP+ MSA-compliant Tx1330/Rx1270 BiDi module that meets the 9 dB budget and 20km reach class, which is common when one end of the

SFP+ Single Mode LC Module (10km)

Each single mode 10G SFP+ transceiver is equipped with a duplex LC fiber connection interface, and supports high-speed data rates up to 10.31Gbps. All

SFP+ Optical Transceiver Modules (10G-SR/LR)

Genuine Amphenol 10GBASE-SR SFP+ Optical Transceiver Modules provide a high-density, high-performance interface for 10-Gigabit Ethernet and Fibre

Ethernet Technology Overview: IEEE 802.3 Standards

☐☐ Ethernet Technology – Quick Notes from My Study Ethernet, standardized under IEEE 802.3 (1983), is the backbone of modern networking. Here's a crisp overview: ✂
Types of Ethernet 10 ...

Chelsio 40G short reach QSFP Optic Module SM40G-SR

Chelsio 40G short reach QSFP Optic Module Chelsio's SM40G-SR 40Gb/s 100m Multimode QSFP+ optical transceivers are designed and certified for use with Chelsio's 40-Gigabit Ethernet Unified Wire

SFP-10GERLC-T

10 Gigabit Ethernet SFP+ Modules Moxa's small form-factor pluggable transceiver (SFP) Ethernet fiber modules for 10 Gigabit provide coverage across a wide range of communication distances.

Juniper XFP-10G-L-OC192-SR1

Description XFP-10G-L-OC192-SR1 - 10-Gigabit Ethernet 10GBASE Optical Interface
The following 10-Gigabit Ethernet optical interface standards are supported on M Series routers, MX Series routers, T

The Ultimate Guide to ZTE SFP Module Distance and Wavelength

The host device's ability to support Digital Optical Monitoring (DOM) is crucial for real-time network management, allowing administrators to monitor key parameters like optical power and temperature

What Is 10GBASE-SR? Complete Guide to 10G SFP+ SR Optics

A 10GBASE-SR SFP module is a small form-factor pluggable plus SFP+ optical transceiver that implements the IEEE 802.3ae 10GBASE-SR standard, enabling 10 Gigabit Ethernet (10GbE)

Support Documents and Downloads

Search technical documentation and downloads including firmware and drivers.

Cisco SFP Modules for Gigabit Ethernet Applications

Cost-effective Small Form-Factor Pluggable (SFP) transceivers for Gigabit Ethernet applications Product overview The industry-standard Cisco

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

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

SFP+ optical module is a new generation of 10 Gigabit optical modules. Compliant with the ANSI T11 protocol, it supports 10 Gigabit Ethernet (10GbE) applications. The SFP+ module is approximately

SFP Optical Transceiver | SFP Optical Module | Perle

Perle SFP Optical Transceivers are designed for use with Perle SFP Media Converters, Industrial Ethernet Switches, IOLAN SCG Console Servers and third

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.

StarTech 10 Pack Cisco GLC-SX-MM Compatible SFP Module (10

StarTech 10 Pack Cisco GLC-SX-MM Compatible SFP Module (10 Pack) - 1000BASE-SX
- 1GbE Multimode Fiber MMF Optic Transceiver - 1GE Gigabit Ethernet SFP - LC 550m
- 850nm - DDM

10GbE SFP+ Transceiver Modules

FS 10G SFP+ transceiver module solutions provide a wide variety of reliable 10 Gigabit Ethernet connectivity options for data centre, enterprise, and service

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

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.

Optical Transceivers

The industry-standard Small Form-Factor Pluggable (SFP) Gigabit Interface Converter is a hot-swappable input/output device that plugs into a Gigabit Ethernet socket, linking the port with the

Contact Us

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