

Article Overview

10G optical modules (SFP+) support 10 Gigabit Ethernet with varying wavelengths, distances, and connector types, suitable for data centers, enterprise, and telecom applications.

Key Specifications

Data Rate: All 10G SFP+ modules support 10 Gbps Ethernet links, with some modules also supporting lower rates such as 1 Gbps or 100 Mbps for backward compatibility (Cisco 10GBASE-T) . **Form Factor:** Modules use the SFP+ (Enhanced Small Form-factor Pluggable) standard, which is smaller than XFP or X2, allowing higher port density and lower power consumption . **Wavelengths and Fiber Types:**

- o 850 nm for short-range multimode fiber (SR)
- o 1310 nm for long-range single-mode fiber (LR)
- o 1550 nm for extended long-range single-mode fiber (ER)
- o Multi-mode fiber modules typically use duplex LC UPC connectors . **Transmission Distances:**
- o Multimode fiber (OM3/OM4): 300-400 meters (UniFi, Cisco SFP-10G-SR)
- o Standard FDDI-grade MMF: 26-220 meters depending on module type
- o Single-mode fiber: 0.5 km up to 80 km depending on wavelength and module type . **Temperature Ranges:**
- o Standard modules: commercial operating range
- o Industrial modules: extended temperature range for harsh environments (Cisco SFP-10G-SR-I) . **Compliance and Standards:**
- o 10G Ethernet (10GBASE-SR, LR, LRM, etc.)
- o CPRI for telecom applications
- o SFP+ MSA, SFF-8431, SFF-8472 for interoperability
- o RoHS compliant . **Power Consumption:** Varies by module type; typically low for SFP+ modules, enabling high-density deployment . **Additional Features:**
- o Hot-swappable: Modules can be inserted or removed without powering down the system .
- o Bi-directional WDM support: Some modules allow simultaneous bidirectional data transmission over a single fiber, reducing cabling costs .
- o Support for FCoE: Some modules support Fibre Channel over Ethernet, though not all (e.g., Cisco SFP-10G-SR-S does not) . **Connector Types:** Most 10G SFP+ modules use LC duplex connectors, while 10GBASE-T modules use RJ-45 for copper cabling .

Summary

10G optical modules provide flexible, high-speed connectivity for data centers, enterprise networks, and telecom infrastructure. Selection depends on fiber type, distance, wavelength, temperature range, and



10G Optical Transceiver Module Technical Specifications

compliance requirements. Modules are generally hot-swappable, support standard SFP+ interfaces, and are compatible with multiple vendors, ensuring interoperability and scalability.

10G SFP + optical fiber transceiver module,supports 10Gb/s and supports 100 km transmission,including: SFP + SR,SFP + LR,SFP

Explore the technical specifications, market dynamics, deployment scenarios, and market dynamics of 10GBASE-T

Features and Benefits The following table lists the different pluggable optic modules and supported platforms, along with the

Arista's transceivers and cables offer customers a wide variety of connectivity options over copper or fiber for data center and HPC

Delve into the world of 10G SFP+ transceiver modules, exploring their diverse types, specifications, and applications,

FS offers a growing portfolio of optical transceivers, with speed range from 100M, 1G, 10G, 25G, 40G, 50G, 100G, 200G, 400G to

The SFP-10G-ZR-I has a cold start at -400C; the transceiver will be operational except optical traffic is not supported from -400 to

Cisco SFP-10G-LRM The Cisco 10GBASE-LRM Module supports link lengths of 220m on standard Fiber Distributed Data Interface

Learn how to read an optical transceiver datasheet, understand SFP specifications, compare 1G/10G modules, and choose

Overview ModuleTek's SFP-10G-LR-10KM-x-H15 SFP+ optical transceivers are based on 10G Ethernet IEEE 802.3ae standard and

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

10Gtek® 10G SFP+ transceivers include -T, SR, LR, LRM, ER, ZR, and C/DWDM, BiDi series . 10G SFP+ transceivers are

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Overview Cisco SFP-10G-LR module is the single-mode 10G fiber optical transceiver, the Cisco 10G Base-LR Module supports a link

When it comes to cost-effective 10 Gigabit Ethernet over short to medium distances, the SFP-10G-SR optical

These 10G SFP+ optical transceiver modules provide a cost-effective and high-performance solution for 10G Ethernet

The transceiver is a "limiting module", i.e., it employs a limiting receiver. Host board designers using an EDC PHY IC should follow

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