

10 Gigabit High-Power Optical Module



Overview

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

Key Takeaways

10G SFP+ optical modules typically operate with transmit powers ranging from approximately -5 dBm to +3 dBm and receive sensitivities from around -14 dBm to -8 dBm, depending on the module type and distance. Overview of 10G SFP+ Modules

10 Gigabit SFP+ modules are designed for high-speed Ethernet connections and come in several types based on fiber type and reach:

- 10GBASE-SR (Short Range): Uses multimode fiber (MMF) at 850 nm, supporting distances up to 300 meters on OM3 and 400 meters on OM4 fiber. These modules are commonly used in data centers for short interconnects .
- 10GBASE-LR (Long Range): Operates at 1310 nm over single-mode fiber (SMF), supporting distances up to 10 km. Typical modules use LC duplex connectors and may include Digital Diagnostic Monitoring (DDM) for real-time optical power monitoring .
- 10GBASE-ER (Extended Range): Also operates at 1310 nm over SMF, supporting distances up to 40 km, suitable for long-haul or metro networks .

Optical Power Specifications

While exact values vary by manufacturer, standard optical power ranges for 10G SFP+ modules are:

- Transmit Power (Tx):
 - 10GBASE-SR: ~ -7 dBm to -1 dBm
 - 10GBASE-LR: ~ -8 dBm to +0.5 dBm
 - 10GBASE-ER: ~ 0 dBm to +3 dBm
 - Receive Sensitivity (Rx):
 - 10GBASE-SR: ~ -11 dBm to -3 dBm
 - 10GBASE-LR: ~ -14 dBm to -8 dBm
 - 10GBASE-ER: ~ -18 dBm to -8 dBm
- These ranges ensure sufficient optical budget to accommodate fiber loss, connector loss, and other link impairments. Modules with DDM/DOM support allow monitoring of Tx and Rx power in real time, which is critical for maintaining link reliability .

Practical Considerations

- Fiber Type: Ensure the module matches the fiber type (MMF for SR, SMF for LR/ER) to avoid excessive loss.
- Distance: Optical power must be sufficient to cover the intended link distance while maintaining a safety margin.
- Compatibility: Modules following IEEE 802.3ae standards and SFP+ MSA agreements are broadly interoperable across switches, routers, and NICs .
- Power Consumption: Most 10G SFP+ modules consume around 1–1.5 W, making them energy-efficient for high-density deployments . In summary, the optical power of a 10G SFP+ module depends on the type and reach, with typical transmit powers from -5 dBm to +3 dBm and receive sensitivities from -14 dBm to -8 dBm, ensuring reliable 10 Gigabit Ethernet connectivity over the specified fiber distances.

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

Genuine Amphenol 10GBASE-SR SFP+ Optical Transceiver Modules provide a high-density, high

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Designed for high-density and cost-sensitive environments, 10GBASE-SR offers

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10G SFP+ Optical Module is a type of SFP+ transceiver that supports 10 Gigabit per

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Code: SF-10GSFPPLCL-000 Genuine Amphenol 10GBASE-SR SFP+ Optical Transceiver Modules

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The Complete Guide to the Best Choice of 10G SFP+ Optical Modules

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Optical transceivers have revolutionized data transmission, providing high-speed, long-distance, and secure data transmission

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10 Gigabit Fiber SFP+ Optical Transceiver Module

10 Gigabit Connectivity Whether you need a fast connection to your 10 GbE equipped server or NAS

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The D-Link DEM-431XT optical transceiver plugs into Ethernet switches via GBIC slots allowing for high-speed connections over

10 Gigabit Fiber SFP+ Optical Transceiver Module

10GBase-LR Gigabit Fiber SFP+ Optical Transceiver Module The line of Intellinet Network Solutions Enhanced Small Form Factor

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The Cisco® CWDM SFP 10 Gigabit Ethernet solution allows enterprise companies and service providers to provide

Intel® Ethernet SFP+ SR Optics and LR Optics

For instance, customers can remove the optical modules that come installed on the adapter and replace them with an Intel® Ethernet

SFP+ Single Mode LC Module (10km)

Duplex LC optical interface Supports data rates of up to 10.31Gbps Supports 1310nm single mode network transmissions Low

10 Gigabit Fiber SFP+ Optical Transceiver Module

This 10 Gigabit Fiber SFP+ Optical Transceiver Module supports standard digital diagnostics monitoring (DDM) functions, also

10G SFP+ Optical Transceiver Modules | AscentOptics

10G SFP+ Product Descriptions AscentOptics" 10G SFP+ modules offer customers a wide variety of 10 Gigabit Ethernet connectivity

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The Intellinet Network Solutions 10 Gigabit Fiber SFP+ Optical Transceiver

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

10Gtek 10GBase-SR SFP+ LC Transceiver, 10G 850nm

Widely used in network switch, server, or NIC with SFP+ to a 10 Gigabit fiber channel network with

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

SFP+ Transceiver | 10G SFP+ Modules | Fiber-Mart

Fibermart SFP+ transceiver module is an enhanced, hot-pluggable optical interface designed for high-speed data communication,

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

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