

10G Industrial-Grade Optical Module Specifications



AI Overview

Industrial-grade 10G SFP+ optical modules support 10 Gigabit Ethernet over single-mode or multimode fiber with extended temperature ranges (-40°C to 85°C), multi-kilometer link distances, and digital diagnostic monitoring for harsh environments.

Key Specifications

- Form Factor and Standards:** SFP+ (Small Form-factor Pluggable Plus) compliant with IEEE 802.3ae and SFP+ MSA standards. Hot-pluggable for easy installation and replacement without powering down equipment. Multi-vendor compatibility across 80+ network equipment brands.
- Operating Temperature:** Industrial-grade modules operate from -40°C to 85°C, suitable for outdoor, transportation, and industrial automation environments.
- Data Rates and Protocols:** Supports 10 Gbps Ethernet, with some modules offering multi-rate operation from 1.25 to 11.32 Gbps. Compatible with 10GBASE-LR, 10GBASE-ZR, 10GBASE-SR, and other 10G Ethernet standards.
- Optical Characteristics:**
 - Wavelengths:** 1310 nm for 10GBASE-LR (up to 10 km), 1550 nm for 10GBASE-ZR (up to 100 km) over single-mode fiber.
 - Link Budget:** Typically 6 dB for LR modules; ZR modules designed for long-haul 100 km links.
 - Fiber Type:** Single-mode fiber (SMF) for long distances; multimode fiber (MMF) for short-range connections (up to 400 m with OM4).
 - Connectors:** Duplex LC/UPC optical interface.
- Diagnostics and Monitoring:** Digital Diagnostic Monitoring (DDM/DOM) provides real-time monitoring of:
 - Transmitted and received optical power
 - Module temperature
 - Bias current
 - Supply voltage
- Environmental and Safety Compliance:** Class 1 laser safety per FDA/CDRH and IEC-825-1 regulations. Designed for harsh industrial environments including rail, marine, oil and gas, and mining applications.
- Power and Reliability:** Low power consumption, typically under 1 W for SFP+ modules. High reliability with ISO 9001:2015 certified manufacturing processes.

Article Content

SFP Module Buying Guide: How to Choose the Right

SFP modules (Small Form-factor Pluggable) are the standard interface for connecting fiber optic or copper cables to network switches, routers,

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.

MIKROTIK Industrial-grade 10G SFP+ modules kit, up to 10 km, single ...

S+2733LC10D is a pair of reliable, industrial-grade 10G SFP+ modules designed for single-mode links up to 10 km. By transmitting and receiving on different wavelengths over a single fiber strand, these

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 a link length of 10 kilometers on standard Single

Optcore-10G-SFP+

for: Mikrotik, Ubiquiti & Cisco In stock in canada Optcore's OSP10G-312DxR is a high performance and cost-effective 10GBASE-LR lite SFP+ transceiver module

Cisco SFP Modules for Gigabit Ethernet Applications

The SFP-1G-SX module operates in 10G, 10/25G dual rate and 10/25/50G tri-rate ports of Cisco switches and routers but provides 1G connectivity. The SFP-1G-SX interoperates with 1000BASE-SX

10G SFP+ Industrial Active Optical Cables Datasheet| FS

The module is a Single-Channel, Pluggable, Fiber-Optic SFP+ for 10 Gigabit Ethernet and Infiniband EDR Applications. These modules are designed to operate over multimode fiber systems using a

2.5G series L3 managed industrial Ethernet switch

The 2.5G series industrial Ethernet switches are 10G uplink L3 managed Ethernet switch independently developed by ONV. They include various port specifications such as 4+2, 8+2, and 8+4, designed to

10G SFP+ Cable and Transceiver Modules Data Sheet

Product overview The FS® 10GBASE Quad Small Form-Factor Pluggable (SFP+) portfolio offers customers a wide variety of high-density and low-power 10 Gigabit Ethernet connectivity options for

SFP-10G SERIES INDUSTRIAL 10GB ETHERNET SFP+ MODULES

The AMG SFP-10G series are industrial high speed 10Gb Ethernet SFP's offering support for multiple cable types including copper (Cat6A or higher) as well as Multimode or Singlemode optical fiber.

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

10G SFP+ Fiber – SFP+ Single Mode LC Module

TRENDnet's SFP+ Single Mode LC Modules are compatible with standard SFP+ slots found on network switches and fiber converters. Each single mode 10G

Cisco 10GBASE SFP+ Modules Data Sheet

This data sheet describes the benefits, specifications, and ordering information for the Cisco 10GBASE SFP+ Modules Data Sheet.

SFP-AOC-10G SERIES INDUSTRIAL 1/10GB ETHERNET AOC

The AMG SFP-AOC-10G series are industrial high speed Active Optical Cables (AOC) offering transmission of 1Gb or 10Gb Ethernet data using active OM4 fiber optic cable technology over

Cisco 10GBASE SFP Modules Data Sheet

Cisco SFP-10G-LRM Module The Cisco 10GBASE-LRM Module supports link lengths of 220m on standard Fiber Distributed Data Interface (FDDI) grade multimode fiber (MMF). To make sure that

GIANTECH SFP+ Fiber Optical Module BIDI Simplex 10G LC 3.3V

This is the industry standard, not our definition. Q4 What is the difference between commercial grade and industrial grade? A: The working temperature of commercial grade is 0-70°C, and the working

Compatible 10G SFP+ Transceivers

EdgeOptic offers 40 different 10G SFP+ transceivers, covering SR, LR, ER, ZR+, BiDi, CWDM, DWDM, and Copper. Distances range from short multimode links

What is SFP+ Module? An Ultimate Guide (2024)

What is an SFP+ module? Simply speaking, SFP+ is an enhanced SFP form factor supporting a higher speed of 8G/10G/16G. An SFP+ module is

Qatar Overseas Warehouse 1.6T Optical Module 2.5G

Sell Qatar Overseas Warehouse 1.6T Optical Module 2.5G in bulk to verified buyers and importers. Connect with businesses actively looking to buy wholesale Qatar Overseas Warehouse 1.6T Optical

SFP+ SFP 10G Module BiDi 40km Simplex LC SMF 1270nm

SFP+ SFP 10G Module BiDi 40km Simplex LC SMF 1270nm-TX/1330nm-RX Industrial Grade Fiber Optic Transceiver with CE FCC ROHS REACH

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.shangases.co.za>

Email: ekomedsolar@gmail.com

Phone: +86 13816583346

Address: No. 26 Heshun Middle Road, Economic Development Zone, Hai'an City, Jiangsu Province, China

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