

The 1310 optical module corresponds to



Overview

Everything You Need to Know About 1310nm Optical ModulesA 1310nm optical module lets you move data efficiently through fiber optic communication networks.

Key Takeaways

1310 nm optical modules are widely available in SFP+, SFP28, and QSFP28 form factors, supporting data rates from 1G to 100G over single-mode fiber for medium-distance links.

1310 nm optical modules operate in the O-band (1260–1360 nm), offering low dispersion, stable performance, and cost efficiency, making them ideal for data centers, enterprise backbones, campus networks, and metro access networks . They are typically used with single-mode fiber (SMF) to achieve longer transmission distances with minimal signal loss and distortion .

Common Types and Data Rates

- SFP+ 10G Modules: Support 10 Gbps data rates, often with a reach of up to 10 km over SMF. Example: XG-SFP-LR-SM1310, compliant with IEEE 10GBASE-LR standards .
- SFP28 25G Modules: Designed for high-speed campus and data center links, supporting 25 Gbps over medium distances .
- QSFP28 100G Modules: Suitable for large-scale data center interconnects, providing 100 Gbps over single-mode fiber .



- **1G Modules:** Available for legacy or lower-speed networks, typically supporting distances up to 10 km.

Key Features

- **Form Factors:** SFP+, SFP28, QSFP28, compatible with switches, routers, and servers from vendors like Cisco, Juniper, Arista, and Huawei .
- **Transmission Distance:** Medium-range links, generally 10 km for standard modules; industrial-grade modules may support extended distances and wider temperature ranges (-40°C to 85°C), .
- **Industrial-Grade Options:** Designed for harsh environments with high EMI resistance and robust construction .
- **Standards Compliance:** IEEE 802.3ae, SFF-8431, SFP+ MSA, RoHS, ensuring interoperability and reliability .
- **Applications:** Campus networks, data center interconnects, metropolitan area networks, and enterprise backbones .

Considerations When Choosing a Module

- **Compatibility:** Ensure the module matches your existing network equipment.
- **Data Rate and Reach:** Select based on required speed and distance.
- **Environmental Requirements:** For outdoor or industrial deployments, choose modules with extended temperature and EMI tolerance.
- **Optical Performance:** Check insertion loss, receiver sensitivity, and optical power margin for reliable operation . 1310 nm optical modules provide a flexible and reliable solution for medium-distance fiber optic communication, supporting a wide range of network speeds and applications while maintaining stable performance and cost efficiency.

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The Optilab SOA-1310-B is a semiconductor optical amplifier with high fiber-to- fiber gain, designed to be used in general

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Insertion Loss Troubleshooting Tip: Singlemode 1310 vs. 1550

In Singlemode cable assembly, the 2 wavelengths used for Insertion Loss testing are 1310nm & 1550nm. Read the

1310nm Single Mode Fiber Optical Transceivers Explained

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Things You Need to Know About Optical Modules and Wavelengths

Generally, multi-mode optical modules work at 850 nm wavelength, whereas single-mode optical modules work at 1310

Can 1310nm be used for multimode?

Yes, 1310nm can be used for multim optical communication. This wavelength is commonly used for both single-mode

How to Identify Optical Transceiver Wavelengths by Pull-Tab Color:

Why Pull-Tab Colors Matter for Optical Modules Optical transceivers operate at various wavelengths—such as 850nm,

Fundamental mode transmission around 1310-nm over OM1

A narrow linewidth CW laser source with wavelength at 1310 nm is used. The MMF under test is sandwiched between

Optical Transceivers Introduction

According to the wavelength, there are 850nm / 1310nm / 1550nm / 1490nm / 1530nm / 1610nm. 850nm wavelength is

What is the difference between 1310nm and 1550nm fiber?

Wavelength: Different optical wavelengths used for transmitting signals. The main difference between 1310nm and 1550nm fiber lies

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics

SFP-10G-LR, Huawei SFP+ Optical Transceiver, 10G, 1310nm, 10km

Huawei SFP-10G-LR is a carrier-grade SFP+ optical transceiver designed for 10G single-mode links up to 10 km. Operating at a 1310

Choice of Wavelength for RF over Fiber – 1310nm vs 1550nm

Since RF over fiber is inherently mono-directional, using a single fiber for a bi-directional link requires the use of more than one

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

A practical, engineer-grade guide to 10GBASE-LR: what it is, 1310nm single-mode SFP+ specs, optical budget examples,

XG-SFP-LR-SM1310 10GBASE-LR SFP+ 1310-nm 10-km DOM

The XG-SFP-LR-SM1310 is aligned to IEEE 10GBASE-LR optical specifications and supports a link length of up to 10 kilometers

Key Differences Between Single-Mode and Multimode Optical Modules

Compare single-mode and multimode optical modules by core size, distance, speed, and cost. Choose the right

1300nm and 1310nm wavelengths in Fiber Optic Communications

I would like to know if there is any differences between Optical interfaces using 1310nm or 1300nm. Can a 1310nm

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Huawei Optical Transceiver eSFP GE Single-Mode Module

The Huawei eSFP GE Single-Mode Module 1310 nm 10 km LC delivers reliable 1 Gbps fiber connectivity for long-distance networks.

What is the difference between SFP 1310nm and 850nm?

The main difference between SFP modules operating at 1310nm and 850nm is the wavelength at which they transmit optical signals.

Huawei SFP-GE-LX-SM1310 1GE 1310nm 10km SFP Optical

The Huawei SFP-GE-LX-SM1310 is a carrier-grade optical transceiver designed for Gigabit Ethernet over single-mode fiber.

SFP+10G 1310nm 10Km LC Optical Module Guide

The SFP+10G 1310nm 10Km LC optical module is a powerful and versatile solution for high-speed, long-distance data transmission.

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