

Optical modules with a range greater than 30 kilometers have



Overview

Long distance transmission refers to distances greater than or equal to 30km. The commonly used wavelengths in optical fibers are 850nm, 1310nm, and 1550nm, which have longer waveforms and therefore have relatively less attenuation. This is why two modules with the same form factor can have dramatically different ranges—some limited. SFP (Small Form-factor Pluggable) modules are standardized network transceivers that support a range of data rates (1G, 10G, 25G) and fiber types. Understanding the basic differences between each module is important to prevent an expensive misconfiguration and provide you with the best network design. SFP modules support a variety of data rates, and the distance capabilities can vary based on the module's design and the type of optical. Long-distance optical modules refer to optical modules with a transmission distance of more than 30km, which can meet network data transmission requirement In the actual use of long-distance optical modules, in many cases the maximum transmission distance of the module cannot be reached.



Article Content

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The relationship between wavelength and transmission

The commonly used wavelengths in optical fibers are 850nm, 1310nm, and 1550nm, which have longer waveforms and therefore have relatively less attenuation.

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Optical Module Classification and Common After-Sales

Explore the classification of optical modules based on transmission rate, package type, mode, central wavelength, and color. Learn about common causes of

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SFP Distance Explained: Real-World Range, Limits, and Optics

Understand SFP distance, fiber optic range, and real-world limits of SR/LR modules. Learn how wavelength, fiber type, and optics affect performance.

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Parallel Optics and WDM Optics Subassemblies for High-speed

Both AWG and Z-block are optical components widely used in high-speed optical modules. The comparison shows that Z-block technology has the advantages of low loss and good

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Fiber Optic Cable Distance: A Comprehensive Guide

Single-mode fiber optic cables are more suitable for long-distance, high-speed transmission than multimode fiber optics. For most applications, the

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SFP Optical Transceiver Modules for Long Distance: A

Discover everything you need to know about SFP optical transceiver modules for long-distance fiber transmission. Compare LX, EX, ZX models and

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Lower loss: Optical fiber has lower attenuation than copper conductors, allowing longer cable runs and fewer repeaters. Increased bandwidth: The high signal bandwidth of optical fiber provides a

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Introduction to 100G Optical Modules

100G optical modules have revolutionized modern networking by enabling faster data transmission, higher bandwidth, and more efficient network

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The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right module for your fiber network.

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What Are the Key Parameters of Optical Modules

Understand the key parameters of optical modules, including transmission rate, distance, wavelength, and fiber compatibility, for better network

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Comprehensive Knowledge Of Long-distance Optical

Due to the strict requirements for the receiving power range of long-distance optical modules, exceeding the receiving sensitivity can easily lead to

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What are the detailed parameters of the optical module

Transmission distance: Transmission distance refers to the distance that optical signals can be directly transmitted without relay amplification, and the unit is kilometers (also called

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The Application of Optical Modules in AI Technology

Optical modules boost AI technology by enabling high-speed data transfer, reducing latency, and improving energy efficiency in modern AI systems.

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Everything You Need to Know About Optical Modules

Optical transceivers are the primary components of optical modules responsible for transmitting and receiving optical signals over fiber optic cables.

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The relationship between wavelength and transmission

At 1310nm wavelength, 100Mbps, 10G, 40G, and 100G optical modules can transmit up to 40km, and 400G can transmit up to 500m. 3. 1550nm: The attenuation of

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SFP+ SR, LR, and ER Modules: Your Definitive Guide to

High-speed data transmission in enterprise and data center networks is driven by 10G optical modules. Choosing the proper SFP+ module, whether it

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Long Distance Optical Module Characteristics and Application

Long-distance optical modules refer to optical modules with a transmission distance of more than 30km, which can meet network data transmission requirement. In the actual use of long-distance optical

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Boost your 80km links to 100G with QSFP-100G-ZR4-S

With an advanced design incorporating an integrated semiconductor optical amplifier (SOA), Cisco's QSFP-100G-ZR4-S modules provide a simple

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Wavelength and Transmission Distance of Optical

Transmission distances greater than or equal to 30km are considered long-distance transmissions. The three most commonly used wavelengths of light in fiber optics

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What is the maximum distance for SFP?

The maximum distance for an SFP (Small Form-Factor Pluggable) transceiver depends on the type of SFP module, the optical fiber used, and the specific application. SFP modules support a

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100G QSFP ZR4 S Optical Module Overview

This product family includes QSFP28 modules covering transmission distances of 100 m, 500 m, 2 km, 10 km, 25 km, and 40 km. Now, with the QSFP-100G-ZR4-S, customers can get full

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Fiber Optic Cable Range: Comprehensive Guide

How Does Fiber Optic Cable Range Work? Fiber optic cable transmission distance is determined by two primary physical factors that affect

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Exploring the Correlation Between Optical Module Wavelength and ...

This article delves into the correlation between optical module wavelength and transmission distance, shedding light on the complexities that impact the efficiency of data transmission.

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What is the maximum distance for SFP□

For higher data rates, such as 10 Gbps, 25 Gbps, or 40 Gbps, there are corresponding SFP+ (SFP Plus), SFP28, and QSFP (Quad Small Form-Factor Pluggable) modules that support

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What Is the Maximum Distance for A Fiber Optic Cable?

Signal Loss (Attenuation): Fiber optic cables have a certain amount of signal loss per kilometer, measured in dB/km. This loss increases with distance, and higher bandwidths often result in greater

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