Optical module distance



Overview

Optical modules generally have the following specifications: multi-mode 550m, single-mode 15km, 40km, 80km and 120km and so on. Loss and dispersion: the two mainly affect the transmission distance of the optical module. An SFP (Small Form-factor Pluggable) module transmits data over fiber using specific wavelengths and power levels, which directly influence how far the signal can travel before degradation occurs. Let's take a look below! Optical module parameters Center wavelength: the unit of center wavelength is nanometer (nm), currently there are three main types: 1) 850nm (MM, multi-mode, low. Do you really need a 10km module for a 300m connection?

Many customers unknowingly overspend by not matching transceiver distance with real needs. Short-distance transmission usually refers to distances below 2km, medium distances range from 10-20km, and distances greater than or equal to 30km are considered long-distance. The operating wavelength of an optical module is a range measured in nanometers (nm).



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Article Content

Sep 07, 2025

SFP Optical Module 1.25G Single Optical Fiber 20km

This is a standard SFP optical module. It uses a single mode optical fiber and the speed rate can up to 1.25Gbps, transmission distance up to 20 km.

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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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“Understanding Transmission Distance: Short-Range vs

Do you really need a 10km module for a 300m connection? Many customers unknowingly overspend by not matching transceiver distance with real

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LR4 40G QSFP+ Transceiver 1310nm 10km SMF Fiber Transceiver Module

40G QSFP+ LR4 1310nm 10km SMF Fiber Transceiver Module Description This product is a transceiver module designed for 2m-10km optical communication applications. The design is compliant to

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Connection Schemes for Optical Module and Fiber Patch Cord

Optical modules come in various transmission rates and distances. Therefore, when selecting fiber patch cords for optical modules, it''s essential to choose the type that matches the

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Basic Knowledge Of Optical Module Transmission Distance

Optical module transmission distance refers to the distance that the optical signal travels from the transmitting end to the receiving end within a fiber optic system.

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SM 10G DWDM SFP+ 80km Optical Transceiver Module For Ethernet

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10G DWDM SFP+ 80km Optical Transceiver Optical Module For 10G Ethernet Network This transceivers include an APD diode and temperature stabilized DFB-EML transmitter. Digital

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1.25G 1310nm 40Km CWDM SFP Optical Transceiver Module Single

1.25G 1310nm 40Km CWDM SFP Optical Transceiver 1.25G Single Mode Product Description GEZHI compatible 1.25Gpbs CWDM SFP transceiver supports up to 40km, 80km, 120km or 160km link

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

Amphenol SFP Optical Modules • SFP+ Optical Modules from Cables on Demand are Now Available in both Short Range (SR) Multimode and Long Range (LR)

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Cisco 10GBASE SFP+ Modules Data Sheet

The Cisco 10GBASE SFP+ modules give you a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and

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DK-ST100-80E3 | Optical Data Transmission Module DK-ST100 Series

Dimensional Drawings/Wiring Diagrams Downloads ... Dimensions Input and Output Signal Connection Input signal connection Output signal connection KeyWords Optical Data Transmission module

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What are the detailed parameters of the optical module

Optical modules generally have the following specifications: multi-mode 550m, single-mode 15km, 40km, 80km and 120km and so on. Loss and dispersion: the two mainly affect the

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Long Distance UAV FPV Fiber Optic Module 3KM 5KM 10KM 20KM

Long Distance UAV FPV Fiber Optic Module 3KM 5KM 10KM 20KM Sky to Ground Optical Transmission

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10G Multi-Mode Optical Module

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SFP+ transceiver that supports 10G connections up to 300 m using multi-mode fiber with a duplex LC UPC connector.

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Wavelength and Transmission Distance of Optical

The transmission distance of optical transceiver modules is divided into short distance, medium distance, and long distance. Usually, short-distance

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Understanding the Transmission Distance of Optical

In the complex world of network design, understanding the reach of optical modules is crucial. From ensuring fast, local connections with SR to

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10G Single-Mode Optical Module

SFP+ transceiver that supports 10G connections up to 10 km using single-mode fiber with a duplex LC UPC connector.

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Optical Transceiver Market Size, Share, Trends

The global optical transceiver market size is projected to grow from $17.15 billion in 2026 to $46.12 billion by 2034, exhibiting a CAGR of 17.00%

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Fiber Optic Cable Distance: A Comprehensive Guide

Learn all about fiber optic cable distance and the key factors that affect it. Find out how to select the appropriate cables for your network and

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Explanation of Optical Module Parameters

When we receive an optical module, we can observe some basic parameters of the optical module from the label, such as the encapsulation form, rate, wavelength, and transmission

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5G Optical Transceiver Market Report 2026

Key opportunities in the 5G Optical Transceiver Market include supporting rapid 5G infrastructure expansion and high mobile data demands with advanced transceivers. Emphasis on

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Optical module transmission distance and related classification

According to the different transmission distances of optical modules, they can be divided into three types: short-distance optical module s, medium-distance optical modules, and long

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Dahua GSFP-1310T-20-SMF Gigabit Optical Module

Dahua GSFP-1310T-20-SMF Gigabit Optical Module The Dahua GSFP-1310T-20-SMF is a Gigabit single-mode SFP optical transceiver designed for long-distance fibre network connections. It is

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SFP Optical Transceiver | SFP Optical Module | Perle

Perle SFP Optical Transceivers are hot-swappable, compact media connectors that provide instant fiber connectivity for your networking gear. They are a cost

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Exploring the Correlation Between Optical Module Wavelength and ...

The transmission distance of optical modules refers to the distance over which optical signals can be transmitted without the need for relay amplification. It is divided into short, medium,

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What are electrical port optical modules?

Electrical port module is also known as optical port to electrical port module, photoelectric conversion optical module, it is a kind of module that supports hot-swappable, the package form is SFP, and the

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

SFP distance refers to the maximum effective range over which an SFP optical module can transmit data while maintaining signal integrity. It is typically measured in kilometers (km) for

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