

Optical module Lr distance



Article Overview

LR (Long Reach) optical modules typically support transmission distances of 2 km to 10 km over single-mode fiber.

Overview of LR Modules

LR modules are designed for longer-distance connections compared to SR (Short Reach) modules. They generally operate at a wavelength of 1310 nm and are optimized for single-mode fiber (SMF), which allows for lower signal attenuation over longer distances. LR modules are commonly used in backbone links, enterprise networks, and data center interconnects where distances exceed the reach of multimode fiber SR modules.

Typical Distance Ranges

- Gigabit Ethernet (1000BASE-LR): Up to 10 km over single-mode fiber.
- 10 Gigabit Ethernet (10GBASE-LR): Also supports up to 10 km over single-mode fiber.
- 100 Gigabit Ethernet (100GBASE-LR4): Can reach 10 km using OS2 duplex single-mode fiber. For distances shorter than 300 meters, SR modules are more cost-effective, while LR modules are preferred for medium to long distances between 2 km and 10 km.

Key Considerations

- Fiber Type: LR modules require single-mode fiber (G.652 or G.657) for optimal per...

Article Content

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Guide to Optical Transceiver Standards

LR – Long Range Transceivers – are optimized for longer distances from 10 km to 40 km over singlemode fiber using the 1310 nm

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

SFP+ SR, LR, and ER Modules explained: key differences, fiber compatibility, distances, case study, and tips for

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10G SR vs LR vs ER vs ZR – Optical Transceiver Distance

Compare 10GBASE-SR, LR, ER, and ZR optical transceivers by distance, fiber type, and application. Find the right

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10G Optical Module Selection Guide: LRM,SR,LR,ER,ZR

The selection of 10G SFP+ dual-fiber optical modules is a systematic project that requires comprehensive

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Meaning of SR, LR, LRM, ER, and ZR in Transceiver Modules

What are the similarity and differences? Now let us make a comparison of the similarity and difference, it will help you

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Choosing the Right 10GBASE-LR Optical Module

When selecting a 10GBASE-LR optical module, the most important consideration is the distance your network needs

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400G Optical Modules Explained: SR4 Vs. DR4 Vs. FR4 Vs. LR4

DR (Distance Range): Up to 500 meters, using single-mode fiber for inter-data center links. FR (Long Range): Up to 2

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Solved: SFP-10G-LR minimum distance

Solved: Hi, is there any minimum distance required when using cisco's SFP-10G-LR (smf) to prevent any damage on

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“Understanding Transmission Distance: Short-Range vs Long-Range

SR (Short Reach): Typically up to 300m on MMF (Multi-Mode Fiber) LR (Long Reach): Up to 10km on SMF (Single

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Exploring the Differences Between SFP 10G SR, LR, ER, and ZR

Among the many SFP module types available, SFP 10G SR, LR, ER, and ZR stand out as some of the most commonly used.

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Guide to Optical Transceiver Standards

Guide to Optical Transceiver Standards – What do SR, LR, FX, LX, etc. stand for? Transceiver part codes are typically made up of a

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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

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Reach Further, Faster: Your Ultimate Guide to Long-Range 10G Optical ...

Long-range 10G optical modules enable high-speed data over distances up to 80km. Learn about types, specs,

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SR vs LR vs ER vs ZR: The Ultimate Guide to Optical Module Distance ...

HCH is a professional optical module manufacturer in China supplying SR, LR, ER, ZR compatible optical modules. We provide a

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What Does SR/LRM/LR/ER/ZR Mean for Transceiver Modules

In fiber optical communication, SR LR LRM ER and ZR mean different transmission distance for 10g SFP+ transceiver

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Decoding the Difference: SR vs LR SFP Modules for 10G Networks

The selection of SFP 10G SR versus LR modules will depend upon the purpose of use and, in optical transport

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The meanings of SR, LRM, LR, ER and ZR

Comparison: SFP-10G-SR vs SFP-10G-LR vs SFP-10G-LRM vs SFP-10G-ER vs SFP-10G-ZR, What is the similarity and

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Meaning of SR, LR, LRM, ER, and ZR in Transceiver Modules

LR means Long Reach, these transceivers support distance up to 10km over single-mode fiber and use 1310nm

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How to Estimate an Optical Module's Transmission Distance | FiberMall

Optical modules distinct from one another in their transmission distance, a feature that should be taken into account in

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Cisco SFP-10G-LR Module: 10km Range & Specifications

Complete guide to Cisco SFP-10G-LR module specs, 10GBASE-LR standard compliance, 1310nm laser operation,

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SFP+ 10G SR vs. LR Modules | How to Make the Right Choice

SFP+ 10G SR vs. LR Modules and how to choose what's best for your needs. Learn about key differences & factors

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Understanding Transmission Distance: Short-Range vs Long-Range ...

Understanding Transmission Distance: Short-Range vs Long-Range Optical Modules! Do you really need a 10km

Jul 26, 2026

Complete Optical Reach Classifications - MapYourTech

This comprehensive guide covers all six major reach classifications currently deployed in modern optical networks:

Contact Us

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