

# How far can an 1c optical module transmit data



## Overview

**Transmission Technology:** The module is designed for bidirectional data transmission over a single multimode fiber strand. It uses two optical lanes, each capable of 50Gbps, to transmit and receive data simultaneously.

**Transmission Distance:** Up to 500 meters using single-mode fiber. This guide explores the key factors affecting fiber optic transmission distance and provides practical selection guidelines for a stable and cost-effective network deployment. Long-distance variants, typically referred to as LX, EX, ZX, or ER/LR SFPs, are engineered with higher optical power budgets and longer wavelength. When designing fiber-optic networks, knowing how far a 1550nm transceiver can transmit is essential. This wavelength offers low attenuation, making it ideal for metro and long-haul links. It covers LC connectors, LC patch cables, uniboot designs, armored. Some are responsible for connections of a few meters between server racks, while others bear the heavy responsibility of spanning tens of kilometers across a city. From the perspective of physical layer.



## Article Content

Wavelength and Transmission Distance of Optical

1550nm: The attenuation of fiber for 1550nm is relatively small, about 0.19dB/km. Therefore, with the same power, 1550nm wavelength can transmit farther than

LC Fiber Optic Cable: A Practical Guide for Network

Master LC fiber optics with this complete 2025 guide. Learn LC fiber optic cable types, best practices, and pro tips to optimize your network

Fiber Optic Cable Distance: A Comprehensive Guide

Dispersion of an optical fiber directly affects the bandwidth and distance capability of the fiber optic link and reduces its efficiency. The higher

How Far Can 1550nm Transceivers Transmit Over Single-Mode Fiber?

For 1550 nm transceivers over single-mode fiber, typical reach spans from 80km to 120km, with specialized modules capable of 160km under optimal conditions. Factors like fiber

Fiber Optics Part 2: Single-Mode Fiber vs. Multi-Mode

Duplex LC multi-mode fiber optic patch cord (Courtesy of Corning Optical Communications). Contrary to what you might think, the larger core size

Demystifying Optical Transceivers: The Gateway to High-Speed Data ...

Distance Range: How Far Can Your Data Travel? The transmission distance of a transceiver is the maximum range over which it can reliably send an optical signal. This can vary from just 30 meters to

How Far Can 1550nm Transceivers Transmit Over Single-Mode Fiber?

Introduction When designing fiber-optic networks, knowing how far a 1550nm transceiver can transmit is essential. This wavelength offers low attenuation, making it ideal for metro and long

How Do Optical Transceivers Transmit Data?

Optical transceivers convert electrical signals into light, transmitting data through fiber optic cables with high speed, reliability, and minimal loss.

How Far Can Multimode Fiber Optic Cables Transmit?

Mismatched components can lead to suboptimal performance, increased errors, and reduced transmission distances. Conclusion Multimode

Understanding Single Mode LC Connector: A

This guide will explain their functions, discuss the role of single-mode LC connectors in modern fiber optic systems, and present the logic for their

Transforming Data into Light: The Ultimate Guide to

These transceivers are able to use the same wavelength for sending and receiving data so that they can double up fiber optic cables without laying

LC Fiber Optics: Complete Guide 2026 to Patch

This guide provides a fully updated and industry-ready overview of LC fiber optics, explaining the origin and design of LC connectors, their key

What are the differences between long-range and short-range optical ...

In a corner of the data center server room, rows of optical modules are working silently. They look almost identical, but their internal structures are vastly different.

Fiber Optic Cable Distance: A Comprehensive Guide

Fiber optic cables are the backbone of modern communications, enabling high-speed data transfer over vast distances. Unlike traditional copper

LC Fiber Optics: A Comprehensive Guide -

LC fiber optics is more than just a cable with connectors; it's a smart choice for fast, clean, and secure data transmission. Whether you're setting up a

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

The FOA Reference For Fiber Optics

Just as with copper wire or radio transmission, the performance of the fiber optic data link can be determined by how well the reconverted electrical signal out of

LC-SFPMM-2 1.25Gbps LC Multimode SFP Module 2km

Description The LC-SFPMM-2 multimode SFP module uses duplex LC type connectors and is designed to be used in the LC-MCGSFP Gigabit media converter. It has a maximum transmit distance of 2km

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

100G Optical Module: How to Choose Between SR4,

Transmission Distance: Maximum of 150 meters (75 meters for OM3, 100 meters for OM4, and 150 meters for OM5). Interface Type: Typically

## LC Connector: The Ultimate Guide to High-Performance Fiber Optic ...

In the world of fiber optic communication, compactness, precision, and reliability define performance. Among all connector types that drive today's high-speed networks, the LC connector

## The Ultimate Guide to 1G SFP Modules

Introduction The demand for high-speed data transmission is ever-increasing in the fast-paced networking world. One technology that has played a

## Understanding LC Fiber: Exploring the World of Fiber

Discover a wide range of LC fiber connectors and cables, perfect for data centers and telecom applications. Explore LC fiber patch cables and more

## Role of LC cables in fiber optic communication systems

High-Performance Transmission High-Speed Data Transmission: LC cables support high-speed data transmission rates, catering to the increasing bandwidth and speed demands of

## 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

## LC Fiber Optics: A Comprehensive Guide

LC fiber connector products are robust optical solutions designed for telecom applications, encompassing LC fiber connectors, patch cords, adapters,

## Dell networking transceivers and cables

Dell Technologies provides optical and cabling options for each Ethernet speed. Long- and short-range optical connectivity options are suited to a wide range of data center and campus applications. For

## Fiber Optic Transmission Distance: Single Mode vs.

Learn how fiber optic transmission distance varies between single mode vs. multimode fiber. Discover key factors affecting fiber distance, bandwidth, and

## LC SFP Modules: Essential for Networking Success

In the world of networking, LC SFP modules play a crucial role. These small form-factor pluggable transceivers are essential for high-speed data

## LC-LC Fiber Optic Connectors: A Complete Guide with

The LC-LC fiber optic connector is the cornerstone of today's high-performance fiber networks, particularly in data centers and

## Contact Us

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

Website: <https://kwsaevents.co.za>

Email: [sales@kwsaevents.co.za](mailto:sales@kwsaevents.co.za)

Phone: +27 21 852 4719

Address: 25 Riebeeck Street, Cape Town, 8001, South Africa

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