

Transmission speed of single-fiber optical modules



Overview

The transmission rate range of a single-fiber unidirectional optical module is 125 Mbit/s to 5 Gbit/s, and that of a single-fiber bidirectional optical module is 125 Mbit/s to 2. 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. Think of it as the “translator” for your network equipment, converting electrical signals into optical signals. This document outlines the specifications for a single-mode optical fiber and cable designed for use around the 1310 nm zero-dispersion wavelength, suitable for both the 1310 nm and 1550 nm regions, and compatible with analogue and digital transmission. Although both carry data through light signals, they differ significantly in transmission mechanism, bandwidth-distance capability, deployment cost, and typical.



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Single-Mode Fibers for High Speed and Long-Haul Transmission

The design and manufacture of optical fibers have evolved over time as optical system technologies and data rates

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