

Do optical modules B and C have the same transmission distance

Article Overview

Optical modules B and C do not have the same transmission distance; Module B typically supports up to 20 km, while Module C can reach longer distances depending on its power class.

Transmission Distance by Module Class

- o Module B (Class B+): Has an optical budget of 28 dB, which typically allows a transmission distance of up to 20 km over a single optical fiber .
- o Module C (Class C+): Features a higher optical budget of 32 dB, enabling longer transmission distances or support for higher split ratios in GPON networks . Class C++ modules can go even further with a 35 dB budget, suitable for dense or extended networks .

Factors Affecting Transmission Distance

- o Wavelength: Longer wavelengths (e.g., 1310 nm or 1550 nm) experience lower attenuation and can travel farther than shorter wavelengths like 850 nm .
- o Fiber Type: Single-mode fibers (SMF) support longer distances than multi-mode fibers (MMF) due to lower signal loss .
- o Dispersion and Signal Loss: Chromatic dispersion and attenuation reduce effective transmission distance, which is why higher-power modules like Class C+ are used for extended reach .
- o Network Design: Split ratios, connectors, and environmental factors can also influence the maximum achievable distance .

Summary

While both modules are designed for GPON networks, Module B (Class B+) is limited to around 20 km, whereas Module C (Class C+) can support longer distances, making them not equivalent in transmission reach. When selecting modules, it is important to consider the optical budget, wavelength, fiber type, and network topology to ensure reliable performance.

In practice, additional losses occur during transmission, such as bending loss and connector loss. Therefore, the

The price of the optical sources and signal converters that are paired with 850nm optical transceiver modules is far lower than the

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Hier sollte eine Beschreibung angezeigt werden, diese Seite lässt dies jedoch nicht zu.

This document is a quick reference to some of the formulas and important information related to optical technologies.

Understand the key parameters of optical modules, including transmission rate, distance, wavelength, and fiber

Generally, short-range modules can reach up to 2 km, medium-range modules range from 10 km to 20 km, and long-range modules

According to the different transmission distances of optical modules, they can be divided into three types: short

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics

The standards define the rate, wavelength, and transmission distance of optical modules, but not their encapsulation modes (two

1, light source The quality of the optical module's conversion of optical and electrical signals depends greatly on its

In this blog post, we'll provide an introduction to GPON optical modules and explore the

Whether you're selecting an optical transceiver module for short-range multimode applications or long-haul coherent

Similar to G.655.B, but this standard allows for transmission applications at high bit rates for STM-64/OC-192 (10 Gb/s) over longer

At 1550 wavelength, the maximum transmission distance of 100M and 1G optical modules can reach 160km, and the

In an optical communication system, different optical signals can be transmitted simultaneously in the same optical

As a photoelectric conversion device, in the optical communication network, the optical module is the most common

Web: <https://bssoda.pl>

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