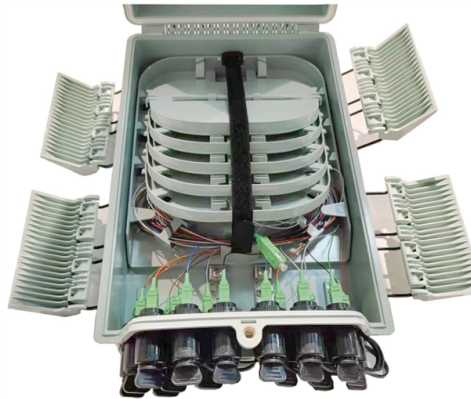


Optical modules for long-range and short-range use



AI Overview

Long-range (LR) optical modules can technically be used for short-range links, but they are generally not recommended due to cost, fiber compatibility, and potential performance issues.

Technical Feasibility

LR modules are designed for long-distance transmission, typically up to 10 kilometers, using single-mode fiber (SMF) and a 1310nm wavelength laser. Short-range (SR) modules, in contrast, operate over multimode fiber (MMF) with an 850nm wavelength and are optimized for distances of a few meters up to several hundred meters. While LR modules can transmit over short distances, their laser power and receiver sensitivity are tuned for long links, which may lead to overpowered signals or signal degradation if used on very short links without proper attenuation.

Practical Considerations

- **Cost:** LR modules are more expensive than SR modules due to their advanced optics and laser technology. Using them for short-range connections can be an unnecessary expense.
- **Fiber Type Compatibility:** LR modules require single-mode fiber. If your short-range network uses multimode fiber, LR modules are not compatible without additional adapters or mode-conditioning cables.
- **Performance:** Over short distances, LR modules may operate reliably, but the mismatch between the module's design and the link length can sometimes cause re...

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LR (Long Range) and SR (Short Range) are terms commonly associated with optical transceiver modules, particularly

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

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For example, short-range transmission uses wavelengths between 850nm and 1300nm, while

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SFP module LR is designed for long-range optical communication and can transmit data over distances of up to 10 kilometers (6.2

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Diverse Transmission Distance Options: These 10G optical modules are suitable for short-range (SR), long-range

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10G optical networks have expanded beyond data centers into enterprise campuses, security monitoring systems,

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Comprehensive Knowledge Of Long-distance Optical Modules-ETU

Attention for using long-distance optical modules Due to the strict requirements for the receiving power range of long

Contact Us

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