

RIVO MULTITRADE OPTICAL SYSTEMS

Optical Modules 1310 and 1550



Overview

Fiber Optic Wavelengths Explained: 1310nm vs 1550nm Fiber wavelengths at 1310nm and 1550nm minimize signal loss and dispersion, enabling efficient long-dist.

Key Takeaways

1310 nm and 1550 nm optical modules are both used for single-mode fiber, with 1310 nm suited for medium distances and 1550 nm optimized for long-haul transmission due to lower attenuation. Wavelength and Fiber Compatibility

Both 1310 nm and 1550 nm modules are designed for single-mode fiber (SMF), unlike 850 nm modules which are for multimode fiber (MMF) (). The wavelength determines how light propagates through the fiber, affecting signal loss and dispersion.

Attenuation Characteristics

- 1310 nm: Typical link loss is around 0.35 dB/km, making it suitable for medium-range transmission up to approximately 40 km ().
- 1550 nm: Lower attenuation of about 0.20–0.28 dB/km allows for longer distances, often exceeding 40 km and up to 120 km without repeaters (). Lower attenuation at 1550 nm also makes it compatible with Erbium-Doped Fiber Amplifiers (EDFAs) for extended reach ().

Dispersion Characteristics

- 1310 nm: Experiences moderate dispersion, which is generally manageable for medium-distance links.

- 1550 nm: Has higher chromatic dispersion, which can limit very high-speed transmission unless dispersion compensation is applied ().

Typical Applications

- 1310 nm modules: Ideal for campus networks, metro backbones, and medium-distance links where moderate loss and dispersion are acceptable ().

- 1550 nm modules: Preferred for long-haul, metropolitan, and intercity networks, especially when combined with optical amplification to cover extended distances ().

Practical Considerations

- Both wavelengths can use the same single-mode fiber, so fiber selection is generally independent of wavelength ().
- Choosing the correct module depends on link distance, required optical budget, and network design. Using the wrong wavelength can lead to insufficient optical margin or unstable performance (). In summary, 1310 nm modules are optimized for medium-range SMF links with moderate loss and dispersion, while 1550 nm modules are optimized for long-distance SMF links with lower attenuation and compatibility with optical amplification, making them suitable for high-capacity, long-haul networks.

Article Content

Fiber Optic Wavelengths Explained: 1310nm vs 1550nm

Fiber wavelengths at 1310nm and 1550nm minimize signal loss and dispersion, enabling efficient long-distance data

Technical Characteristics Of 10G Optical Modules With 1310nm And

There are three wavelength windows for 10G optical module communication applications, namely the 850nm window,

What is difference between 1310nm and 1550nm?

In standard Singlemode cable assembly, the two wavelengths used for Insertion Loss testing are 1310nm and 1550nm. All

Fiber 101: 1310 nm vs. 1550 nm Transmitters

Choosing 1310 nm vs 1550 nm is one of the first decisions in any fiber link, and it shapes how far the signal travels,

Everything You Need to Know About 1310nm Optical Modules

1310 nm modules are more cost-effective, making them the standard for short-to-medium transmission in data centers,

What is the difference between 1310nm and 1550nm SFP□

The difference between 1310nm and 1550nm SFP (Small Form-factor Pluggable) transceivers lies in the wavelength at

1310/1550+1590 nm Filter Wavelength Division Multiplexers

Lumentum 1310/1550+1590 nm filter wavelength division multiplexers (WDMs) use interference filter technology to separate or

What is the difference between 1310 and 1550 SFP□

The numbers 1310 and 1550 refer to the wavelength of light used in the optical transmitters of SFP (Small Form-factor Pluggable)

OEM|ODM Optical Transceiver|SFP Module |Single Mode SFP

The Cisco-compatible SFP module transceivers provide up to 10GB of throughput over single mode sfp fiber (SMF) for up to 10

Singlemode Wavelength Division Multiplexer (1310/1550,

Description The Singlemode Wavelength Division Multiplexer combine or separate light at different wavelengths. They offer very low

SFP 1.25G Tx1310/Rx1550 10Km LC Transceiver

The module data link extends up to 10km in 9/125um single-mode fiber. This transceiver conforms to the industry-standard Small

Exploring the Correlation Between Optical Module Wavelength and ...

Conversely, longer wavelengths, typically in the range of 1310 nm and 1550 nm for gray optical modules and specific

Filter WDM Series 1310/1550nm Filter WDM Key Features

The 1310/1550nm Filter Wavelength Division Multiplexer is based on environmentally stable thin-film filter technology. The devices

Accessories MINI-GBIC-LX-SM1310 1000BASE-SX SFP 1310-nm 10

MINI-GBIC-LX-SM1310 Module The MINI-GBIC-LX-SM1310 is aligned to IEEE 1000BASE-LX optical specifications and supports a

Optical multiplexer module (WDM) 1310/1490

Optical multiplexer module (WDM) 1310/1490 - 1550nm Passive device designed to multiplex/demultiplex two optical signals: one at

1310/1550nm Fused WDM Coupler (Ultra-high Isolation)

Lfiber''s classical 1310/1550nm fused WDM coupler is a wavelength selective coupler. It combines/separates 1310/1550nm signals.

Jonard Professional Singlemode Multi-Function OTDR, 1310/1550 nm

Singlemode wavelengths: 1310nm/1550nm Includes 5 different functions for testing: 1310/1550 nm OTDR module, 1310/1550 nm

Datasheet

The Agiltron LDCM series laser source module is designed for OEM applications and features all-in-one high reliability and highly

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