

Why do CFP optical modules use a 1310 wavelength



Overview

A 1310nm optical module lets you move data efficiently through fiber optic communication networks. As part of the O-band (1260–1360 nm), it balances low dispersion, stable performance, and cost efficiency. This makes it widely adopted in data centers, enterprise backbones, and metro access. When engineers search for “SFP wavelength,” they are typically trying to answer a practical deployment question: Which optical wavelength should I use—850 nm, 1310 nm, or 1550 nm—and why does it matter?

The answer directly affects fiber compatibility, transmission distance, link stability, and. Among the most commonly used fiber types are single-mode fiber (SMF) and multimode fiber (MMF), often paired with 1310nm SFP modules for high-speed data transmission. In this guide, we will explore the distinctions between 1300nm and 1310nm transceivers, examine the characteristics of SMF and MMF. You use 1310nm and 1550nm fiber wavelengths because these points in the optical spectrum offer the lowest signal loss, which means you can transmit data efficiently. Unlike standard RF engineering which uses frequency (Hertz), optical engineering uses physical wavelength.

Article Content

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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)

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Applications of 1310nm Optical Modules in Modern Networks

Discover how 1310 nm optical modules serve essential roles in data centers, metro networks, and enterprise links.

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What is the difference between SFP 1310nm and 850nm?

The main difference between SFP modules operating at 1310nm and 850nm is the wavelength at which they transmit optical signals.

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Why 1310nm precisely?

1310 nanometres is the wavelength of light first used in fibre-optic cables to transmit data between sites. AT&T used 1310nm lasers

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Fiber Facts—Yes, You Do Need to Read This

There are three main wavelengths used for fiber optics—850 nm and 1300 nm for multi-mode and 1550 nm for single

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What Do 850nm, 1310nm and 1550nm Actually Mean in Optical

Learn what 850nm, 1310nm, and 1550nm mean in optical transceivers. Discover the differences between SX, LX, and

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How Wavelength (850/1310/1550nm) Affects Optic Transceiver Reach

Choosing the right optical wavelength is one of the quickest ways to determine how far a Transceiver can reliably carry data.

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SFP Wavelength Guide: 850nm vs. 1310nm vs. 1550nm

In contrast, 1310 nm and 1550 nm SFP modules are designed for single-mode fiber (SMF), which supports

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Single-mode SFP vs Multimode SFP: Which One Do

According to the wavelength, there are 850nm / 1310nm / 1550nm / 1490nm / 1530nm /

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Can 1310nm be used for multimode?

Yes, 1310nm can be used for multimodal optical communication. This wavelength is commonly used for both single-mode

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What is 1310 nm? | Definition & Guide | RF Essentials

Learn why 1310 nm is the global standard for fiber-optic communications. Discover the physics of zero chromatic dispersion in single

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1310nm Single Mode Fiber Optical Transceivers Explained

A 1310nm single mode fiber optical transceiver is one of the most widely used optical transceivers in modern fiber-optic networks,

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Fiber Optic Wavelengths Explained: 850 vs 1310 vs 1550 nm

In fiber optics, wavelengths (especially 850, 1310, 1550 nm) are chosen to exploit the low-loss windows of silica glass

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Technical Characteristics Of 10G Optical Modules With 1310nm And

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

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How Wavelengths Drive Performance in Fiber Optics?

Why Wavelengths Matter in Fiber Optics Wavelength is a fundamental parameter in fiber optic communication, as it

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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

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Everything You Need to Know About 1310nm Optical Modules

1310nm optical modules are essential for efficient data transmission in fiber optic networks, especially for medium

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Fiber Optic Wavelengths Explained: 1310nm vs 1550nm

You use 1310nm and 1550nm fiber wavelengths because these points in the optical spectrum offer the lowest signal

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What Are The Wavelength Bands Of Optical Fiber?

Summary FAQ What are the 4 dominant wavelengths used in fiber optic systems? Why are wavelengths 1310 nm and

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Understanding Wavelength Bands in Fiber Optic Communication

Explore fiber optic wavelength bands, tech evolution, and trends. See how LINK-PP modules support key

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What is CFP and How to Use it?

What is CFP Transceiver? The CFP, short for C form-factor pluggable, is a multi-source agreement to define the form

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Choice of Wavelength for RF over Fiber – 1310nm vs 1550nm

Since RF over fiber is inherently mono-directional, using a single fiber for a bi-directional link requires the use of more than one

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Why do we use 1310 and 1550?

These technologies offer the potential to further optimize the performance of systems operating at 1310 nm and 1550 nm

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Single-Mode vs Multimode Fiber and 1300nm/1310nm SFP

The 1310nm wavelength is chosen for its low chromatic dispersion and low attenuation, making it ideal for medium-distance links.

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Understanding Wavelengths In Fiber Optics

The difference between 1300 nm and 1310 nm is simply a matter of convention, harking back to the days when AT& T dictated most

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What is difference between 1310nm and 1550nm?

Accordingly light sources at these three wavelengths have been commercialized. These are the wavelength of the, light source called

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What is CFP and How to Use it?

To achieve higher cabling density with CFP 100G optics, the architecture mixed a 16 channels dual fiber DWDM Mux Demux which

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Insertion Loss Troubleshooting Tip: Singlemode 1310 vs. 1550

In Singlemode cable assembly, the 2 wavelengths used for Insertion Loss testing are 1310nm & 1550nm. Read the

Contact Us

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

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

Email: sales@ntmmgroup.co.za

Phone: +27 82 471 2596

Address: Unit 7, Optic Park, 24 High-Tech Lane, Century City, Cape Town,
7441, South Africa

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