

Article Overview

In optical modules, LX stands for "Long Wavelength," referring to a 1310 nm Gigabit Ethernet transceiver designed for medium- to long-distance single-mode fiber links.

Definition and Standard

LX is part of the IEEE 802.3z standard for 1000BASE-LX Gigabit Ethernet, where "LX" specifically denotes Long Wavelength operation at approximately 1310 nm. This wavelength allows signals to travel longer distances with reduced attenuation and dispersion compared to shorter wavelengths like 850 nm used in SX modules . LX modules are primarily intended for single-mode fiber (SMF) but can also operate over multimode fiber (MMF) for shorter distances, typically up to 550 meters, often requiring a mode-conditioning patch cable to maintain signal integrity .

Distance and Deployment

A standard 1000BASE-LX SFP module supports transmission distances of up to 10 kilometers over single-mode fiber, making it suitable for campus networks, inter-building links, and enterprise backbones . When used with multimode fiber, the effective distance is reduced, and careful deployment is needed to avoid differential mode delay (DMD) issues .

Comparison with Other Modules

- o SX (Short Wavelength): Operates at 850 nm, optimized for short-range multimode fiber links (up to 550 meters).
- o LR (Long Reach): Typically used for 10 km single-mode fiber, similar to LX but sometimes vendor-specific.
- o LH (Long Haul): Vendor-specific term, often functionally identical to LX for 1G SFPs, mainly used by Cisco to indicate compatibility or slightly extended reach .

Key Takeaways

- o LX modules are IEEE-standardized, ensuring interoperability across vendors.
- o They provide a cost-effective solution for medium- to long-distance fiber links.
- o LX modules are versatile, supporting both single-mode and multimode fiber with proper configuration.
- o The term "LX" focuses on wavelength and standard compliance, not just distance, distinguishing it from vendor-specific labels like LH . In summary, LX optical modules are long-wavelength, 1310 nm transceivers designed for reliable medium- to long-distance fiber connections, widely used in enterprise and campus networks for their balance of distance, compatibility, and cost-efficiency.

These compact optical transceivers offer a. access and ring network, storage network, and long-haul network.

Learn what LX SFP (1000BASE-LX) modules are, how they differ from LR/LH/SX, and practical tips for compatibility,

Guide to Optical Transceiver Standards - What do SR, LR, FX, LX, etc. stand for? Transceiver part codes are typically made up of a

1000BASE-LX SFP is a gigabit Ethernet standard over fiber optics for long reach. It operates on single-mode fiber

1000base LX vs 1000base SX SFP Transceiver Module, What's the Difference? The following table clearly shows the

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

Use SX SFP Module with Aqua (OM3) cable. Connecting distant buildings? Use LX SFP Module with Yellow (OS2) cable. Upgrading

Discover how these small but powerful fiber optic transceivers work and gain insights into choosing between

One of the most common questions we get from network engineers and procurement

At Sate Optics, we often get asked what those abbreviations like SX, LX, SR, LR4 actually mean when it comes to

Conclusion In conclusion, understanding the functionality of the 1G SFP optical module and the differences between

Discover the differences between 1000BASE-SX and 1000BASE-LX SFP transceivers. Learn which one suits your

The 1000BASE-LX/LH SFP, compatible with the IEEE 802.3z 1000BASE-LX standard,

Selecting the wrong optical module can lead to compatibility headaches, unnecessary expenses, or failed links. This



LX optical module

Fiber optic networks rely heavily on transceiver modules to transmit data efficiently across different distances and

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