

How to differentiate between 100Mbps and 1Gbps optical modules in SFP



Overview

The most common encapsulations for 100Mbps and 1Gbps optical modules are SFP. For 10Gbps modules, the encapsulation is usually SFP+, while for 25Gbps/40Gbps/100Gbps/400Gbps, the encapsulations are SFP28/QSFP/QSFP28/QSFP-DD respectively. For network engineers, system integrators, and IT buyers, understanding how to choose the right SFP module for compatibility, speed, and distance is essential to ensuring stable and scalable infrastructure. SFP (Small Form-factor Pluggable) modules are hot-swappable optical or copper transceivers. How many types of 1G SFP Transceivers do you know?

— A Classified Field Guide 1G SFPs aren't "all the same. " Media (fiber vs copper), wavelength, reach, connector, temperature grade, and even application domain (Ethernet, SONET/SDH, PON, Fibre Channel) all matter. They're inexpensive, easy to terminate, and play nicely with legacy switches and appliances. The optical fiber transceiver is fully compatible with IEEE802. As a critical Ethernet physical layer standard, they specify a set of 1000BASE-X standards, including 1000BASE-T, 1000BASE-CX (Copper), 1000BASE-KX, 1000BASE-SX, 1000BASE-LX, 1000BASE-EX. I deal mainly with smaller networks and slower internet speeds (usually 10Mb-100Mb), so my world mainly revolves around 100Mb and 1Gb Ethernet optics. I'm struggling to wrap my head around how there can be SX and LX modules at both 100Mb and 1Gb speeds. What do those designations ("SX" and "LX").

Article Content

1G SFP vs 10G SFP+: How to Tell the Difference

This article explains how to identify 1G vs 10G SFP modules step by step. It covers basic concepts, technical differences, and practical methods you can use in real network environments.

SX SFP Module Guide: Specs, Distance & 1000BASE-SX vs LX Deep ...

One of the most persistent sources of confusion in network engineering is the distinction between SX (Short Wavelength) and LX (Long Wavelength) modules. While both adhere to the SFP ...

SFP Types Explained: 1G Modules, Distances & Selection

1G SFPs aren't "all the same." Media (fiber vs copper), wavelength, reach, connector, temperature grade, and even application domain (Ethernet, SONET/SDH, PON, Fibre Channel) all matter. Use ...

What is an SFP Optical Module? The Complete Guide to Types, ...

Understand the core function, compare data rates (1G to 25G), learn critical compatibility rules, and follow our 5-step checklist for selecting the perfect SFP optical module for your network build.

Explanation of Optical Module Parameters

Considering that some newcomers to optical modules may not understand the letters on the optical module or the specific meanings of the parameters on the optical module, the following is ...

100M Optical Fiber Transceiver Vs. Gigabit Optical Fiber Transceiver ...

There are many types of Optical Fiber Transceiver. In this post, let's discuss the difference between 100M Optical Fiber Transceiver and Gigabit Optical Fiber Transceiver.

SFP Optics

I'm struggling to wrap my head around how there can be SX and LX modules at both 100Mb and 1Gb speeds. What do those designations ("SX" and "LX") really mean, and what's an ...

Optical Transceiver Speeds Guide: 1G, 10G, 25G, 40G, 100G, 200G

Each module from WOLON includes burn-in testing, clear optical budget labels, and a vendor compatibility matrix so you can buy with confidence and avoid surprise incompatibilities.

1000BASE-SX, 1000BASE-LX, 1000BASE-ZX& BX SFP: A Simple ...

This post will focus on several standards for transmission over fiber optic media, especially for SFP modules, including the most commonly 1000BASE-X terms. The details are as ...

How to Choose SFP Module for Compatibility, Speed, and Distance

Learn how to choose the right SFP module based on compatibility, speed, fiber type, wavelength, and distance. Practical guide for engineers and IT buyers.

Contact Us

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