

SFP optical module rate



Article Overview

Select an SFP module that matches your network port speed, typically 1G, 10G, 25G, 40G, or 100G, to ensure proper operation and compatibility.

Understanding SFP Data Rates

SFP (Small Form-factor Pluggable) modules are hot-swappable transceivers that convert electrical signals into optical signals for fiber or copper connections. Each module supports a specific data rate, which must match the speed of the network port on your switch, router, or server (). Common SFP data rates include:

- 1G (Gigabit Ethernet) – Standard SFP modules for basic network links.
- 10G (SFP+) – High-speed modules for data center uplinks or aggregation.
- 25G (SFP28) – Used in modern 100G aggregation and high-performance networks.
- 40G (QSFP+) – Typically used for multi-lane high-speed connections.
- 100G (QSFP28) – For backbone or high-capacity data center links. Using a module with a higher rate than the port supports (e.g., 10G SFP+ in a 1G-only port) will generally fail unless the device explicitly supports dual-rate operation ().

Key Considerations for Rate Selection

- Port Compatibility: Verify that the SFP module is supported by your network device. Vendor-specific coding or EEPROM settings may prevent recognition if the module is not compatible ().
- Distance Requirements: Higher-speed modules often have shorter maximum distances. Choose a module that meets your link length requirements, considering short-reach (up to 100m), medium-reach (up to 10km), or long-reach (40km+) optio...

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An SFP module is the building block of scalable and adaptable optical networking. Whether you're dealing with 1G

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SFP module specification and selection guide (EN)

SFP modules comply with the MSA Multi-Source Agreement standard. They are Class 1 laser and comply with the international

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Cisco Optics-to-Device Compatibility Matrix

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The Ultimate Guide to Optical Transceivers: SFP, QSFP-DD, OSFP,

Form Factor & Rate: SFP was originally defined for 1Gbps, while SFP+ is optimized for 10Gbps. They share the same

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At introduction, typical speeds were 1 Gbit/s for Ethernet SFPs and up to 4 Gbit/s for Fibre Channel SFP modules.

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This modular approach enhances deployment flexibility, increases port density, and simplifies maintenance compared with fixed,

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SFP Optical Module Specifications: Standards & Performance

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Cisco 10GBASE SFP+ Modules Data Sheet

The Cisco® 10GBASE SFP+ modules (Figure 1) give you a wide variety of 10 Gigabit Ethernet connectivity options for

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Small Form-factor Pluggable

Small Form-factor Pluggable Small Form-factor Pluggable connected to a pair of fiber-optic cables Small Form-factor Pluggable

Contact Us

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