SFP1550 optical module costs over 40 kilometers



Overview

Buy 1550nm SFP transceiver modules for long-distance fiber networks. Compare types, distances, compatibility, and pricing to choose the right SFP.

Key Takeaways

1550nm SFP modules for 40 km single-mode fiber typically cost more than standard short-range SFPs due to their long-distance performance and reliability requirements.

Overview1550nm SF

P transceivers are designed for long-distance, low-loss transmission, making them ideal for links of 40 km or more over single-mode fiber (SMF) networks. Compared to 850nm or 1310nm SFPs, 1550nm modules offer lower attenuation (~0. 2 dB/km), which allows signals to travel farther with fewer repeaters, ensuring stable and high-quality transmission.

These modules are commonly used in telecom backbones, metropolitan area networks (MANs), ISP aggregation links, and data center interconnects.

Types and Specifications

Data Rates: Modules are available for 1G, 4G, and 10G applications, supporting Gigabit Ethernet, Fibre Channel, and SONET/SDH protocols. Optical Link Budget: A typical 40 km SFP module has a 15 dB link budget, sufficient for metro and long-haul links. Connectors: Most modules use LC duplex connectors and comply with SFP MSA standards, often including digital diagnostic monitoring (DDM/DOM) for real-time performance monitoring.

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Laser Type: Modules employ DFB lasers with PIN photodiode receivers for reliable long-distance transmission.

Cost Considerations

The price of a 1550nm SFP module for 40 km depends on several factors: Data Rate: Higher-speed modules (10G SFP+) are more expensive than 1G SFPs. Brand and Warranty: Modules from established manufacturers with warranties and quality certifications (ISO 9001: 2015) tend to cost more. Features: Modules with DDM/DOM, extended temperature ranges, or enhanced link budgets are priced higher.

Market Pricing: While exact prices vary, factory or wholesale prices for 1G 1550nm 40 km SFPs typically range from $50 to $150, whereas 10G SFP+ modules for the same distance can range from $200 to $500 or more, depending on vendor and specifications.

Summary1550nm SF

P modules for 40 km are optimized for long-haul, high-stability fiber links. They are more expensive than short-range SFPs due to their lower attenuation, higher link budget, and reliability features. When planning purchases, consider data rate, module type, manufacturer, and additional features to balance performance and cost effectively.

Article Content

1550nm SFP Transceiver Module | Long Distance Fiber Optics

Buy 1550nm SFP transceiver modules for long-distance fiber networks. Compare types, distances, compatibility, and pricing to choose the right SFP.

4G Fibre Channel 1550nm 40km SFP Optical Transceiver

This 4G fibre channel SFP storage transceiver provides 40km transmission distance over 9/125µm single mode fiber at a nominal wavelength of 1550nm. The module features a highly reliable 1550nm

1000BASE EX SFP Transceiver | sfp 1550nm 40km DOM Single-Mode

The 1000BASE EX SFP 1550nm 40km Optical Transceiver Module is specifically designed for long-distance Gigabit Ethernet communication, utilizing a 1550nm wavelength to achieve stable and high

10G SFP+ ER Optical Transceiver | Wholesale Transceiver

The 10G SFP+ ER 1550 nm optical transceiver is engineered for reliable, long-reach Ethernet links up to 40 km over ITU-G.652 single-mode fiber. And are compatible with SFP Multi-Source Agreement and

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SFP-10G-ER Transceiver | Long-Range 10G ER Modules

Reliable, high-performance 10G multimode SFP modules for extended reach. The 10GBASE-ER SFP+ 1550nm 40km DOM Duplex LC/UPC SMF Optical Transceiver Module is designed for high-speed

1000BASE-EX SFP 1550nm 40km Transceiver Module

1000BASE-EX SFP SMF DOM Duplex LC/UPC transceiver module, supports link length up to 40km with a wavelength of 1550nm, supports 1G Gigabit Ethernet, compatible with Cisco, HP, Juniper, Arista,

10G SFP+ ER 1550nm Optical Transceiver Module | FiberMall

FiberMall SFP-10G55-ER Compatible 10G SFP+ ER transceiver module through up to 40km over single-mode fiber (SMF) using a wavelength of 1550nm via LC connector.

10GBASE-ER SFP+ 1550nm 40km LC SMF Optical Transceiver

The 10GBASE-ER SFP+ Optical Transceivers are designed for long-distance, high-speed optical communication over single-mode fiber. SFP+ ER uses a 1550nm wavelength to provide

SFP-GE-LH-SM1550 1.25G 1550nm 40Km Optical Transceiver

The original module is reliable but the price is too high, compatible module is cost-effective, comparable to the original module. Different users need to make specific choices according to the budget.

Small Form-factor Pluggable

Small Form-factor Pluggable Small Form-factor Pluggable connected to a pair of fiber-optic cables Small Form-factor Pluggable (SFP) is a compact, hot-pluggable network interface module format used for

Cisco 10GBASE SFP+ Modules Data Sheet

Cisco SFP+ Active Optical Cables (Figure 5) are direct-attach fiber assemblies with SFP+ connectors. They are suitable for very short distances and offer a cost-effective way to connect within racks and

BiDi SFP: The Complete Guide to Bidirectional SFP Transceivers and ...

BiDi SFP (Bidirectional Small Form-Factor Pluggable) transceivers have emerged as a powerful solution, enabling full-duplex communication over a single optical fiber. By using

Active Optical Module Market Research Report 2034

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Active Optical Module market valued at $10.7 billion in 2025, projected to reach $35.6 billion by 2034 at 14.2% CAGR, driven by data center expansion and 5G deployment.

Cisco SFP vs GBIC vs XFP vs SFP+: A Practical Comparison Guide

Wavelength: Defines the optical frequency (850 nm for short-range, 1310 nm for mid-range, 1550 nm for long-range). Connector Type: LC or SC, determining how the module interfaces

LevelOne SFP-2605 network transceiver module | AiO.lv

Buy LevelOne SFP-2605 network transceiver module with 2500 Mbit/s speed. Fast shipping in Riga Latvia and EU.

SFP+ transceiver BlueOptics SFPP-10G-ER-C-BO | AiO.lv

The BlueOptics SFPP-10G-ER-C-BO is an SFP+ fiber optic transceiver module engineered for 10 Gbit/s optical links over single-mode fiber. Operating at a 1550 nm wavelength with LC duplex connectivity,

The Ultimate Guide to ZTE SFP Module Distance and Wavelength

The SFP-SDB-GE-S10K uses 1490nm Tx/1310nm Rx, and its counterpart SFP-SDA-GE-S10K uses 1310nm Tx/1490nm Rx, allowing a single fiber to carry both signals over 10 km. 10 Gigabit Ethernet

10 Gigabit Ethernet

10 Gigabit Ethernet Router with two dozen 10 Gigabit Ethernet ports and three types of physical-layer module 10 Gigabit Ethernet (10GE, 10GbE, or 10 GigE) is a

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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