

That type of optical module is expensive



Article Overview

High-speed optical modules such as 400G and 800G transceivers are among the most expensive due to advanced DSP chips and complex electronic components.

Key Factors Driving Cost

High-speed modules (400G, 800G, and beyond) are significantly more expensive than lower-speed modules (10G, 25G) because they require advanced electronic chips, including DSPs, driver ICs, and TIAs, which handle high-speed signal processing, modulation, and photodetection. DSP chips alone can account for 25% or more of the total module cost in 800G modules, reflecting their complexity and the use of advanced manufacturing processes like 7nm or 5nm nodes. Limited competition among top vendors such as Marvell, Broadcom, and MaxLinear also keeps prices high.

Price Ranges by Module Type

- 1G SFPs: \$5-\$120, with OEM-branded or industrial-grade modules at the high end.
- 10G SFP+: \$20-\$300, with long-reach or vendor-guaranteed modules costing hundreds of dollars.
- 25G SFP28: Low-cost compatible modules under \$30, while branded single-mode or specialized parts can reach several hundred dollars.
- 400G and 800G modules: Prices are substantially higher due to DSP and high-speed optical components, often used in hyperscale data centers and AI workloads. These modules also integrate coherent optics and advanced photonic components, further increasing cost

Article Content

Why Do SFP+ Module Prices Vary So Much?

The core components of an optical module are the optical chip and the electrical chip. Optical chips account for approximately

Optical Transceiver Market Size, Share, Analysis 2030

The global Optical Transceiver Market size in terms of revenue was estimated to be worth \$13.6 billion in 2024 and is poised to reach

Optical Module Chip Market 2025

The Global Optical Module Chip market was valued at US\$ 823 million in 2024 and is projected to reach US\$ 1.52 billion by 2032.

Analyze The Cost Structure Of Optical Transceivers: Understand The ...

Summary: This article analyzes the cost components of optical transceivers, including material costs, manufacturing costs, R&D

Multi-mode optical fiber

Multi-mode optical fiber is a type of optical fiber mostly used for communication over short distances, such as within a building or on a

What is Optical Link Module?

Explore the world of optical link modules, essential components in optical fiber communication. Learn about the different types of

Optics and Transceivers | Fiber Optical Transceivers

FS offers a growing portfolio of optical transceivers, with speed range from 100M, 1G, 10G, 25G, 40G, 50G, 100G, 200G, 400G to

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics & how to choose the right

Types of Optical Modules

Optical modules are available in various types to meet diversified requirements. Classified by transmission rates Depending on

What factors influence 400G optical transceiver modules price?

Key takeaway: Match the 400g optical transceiver module form factor to your switch/router ecosystem early in the design cycle to

Optical Transceiver Pricing: Cost Ranges by Speed and Type

This article compares typical cost ranges across speeds and transceiver types, explains why prices vary, and gives practical

Why are original modules so expensive?

Some third party optical modules have good compatibility, and their performance is comparable to that of original optical module. And

Designing a Module for High-Speed Optical Communication

This article explores MPS optical module solutions to meet the design requirements of high-speed optical communication as well as

Understanding Optical Modules: Types and Troubleshooting Guide

Optical modules come in various types, and their external structures are not exactly the same. However, their basic compositional

Optical Modules Market Research Report 2034

Key Takeaways: Optical Modules Market Global optical modules market valued at \$14.8 billion in 2025 Expected to reach \$39.6

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