Cost of Optical Communication Modules

Article Overview

Optical communication module prices vary widely by type and speed, ranging from a few hundred dollars for 100G modules to several thousand dollars for 400G-800G high-speed modules.

Current Market Pricing

o 100G Modules: Typically priced in the range of $300-$800 per unit, depending on vendor, form factor, and technology (SFP+, QSFP28) .
o 200G-400G Modules: Prices generally range from $1,000 to $3,000 per unit, influenced by silicon photonics integration, coherent optics, and supply constraints .
o 800G Modules: High-speed modules for AI data centers and hyperscale deployments can cost $5,000-$10,000 per unit, reflecting advanced technology, limited supply, and high demand from cloud providers .
o 1.6T Modules: Emerging ultra-high-speed modules are priced even higher, often exceeding $10,000 per unit, though commercial adoption is still limited and constrained by GPU and power infrastructure .

Factors Affecting Prices
o Technology Type: Silicon photonics and co-packaged optics (CPO) increase unit costs due to integration complexity, while traditional SFP+ and QSFP modules remain more affordable .
o Supply Constraints: EML chip shortages and limited 8-channel module capacity have created bottlenecks, driving prices upward .
o Regional Dynamics: North America dominates high-speed module demand, while Asia-Pacific sees rapid growth in 400G modules, affecting regional pricing .
o Market Demand: AI data centers, 5G rollouts, and hyperscale cloud infrastructure are major drivers of high-speed module demand, pushing prices higher for 400G-1.6T modules .
o Tariffs and Geopolitics: U.S. tariffs and factory relocations to Southeast Asia can influence module costs and availability .

Market Outlook

The global optical module market was valued at $14.8 billion in 2025 and is projected to grow to $39.6 billion by 2034, with a CAGR of 11.5% . High-speed modules (400G, 800G, 1.6T) are expected to dominate future growth, particularly in AI and hyperscale data center applications . Prices may gradually decrease as silicon photonics and integration technologies mature, but supply-demand imbalances could maintain high costs in the near term . In summary, module prices are highly dependent on speed, technology, and market demand, with 100G modules being relatively affordable and 800G-1.6T modules commanding premium prices due to advanced technology and limited supply.

Cost of Optical Communication Modules

We deliver optical connectivity solutions for every segment of the network, including carriers, data centers, in-building networks, and

The ultimate goal for all-optical connectivity with an ultra-high F5G bandwidth is to increase transmission rates. Optical modules --

The rapid development of AIGC has promoted the demand for 800G optical modules, and the entire industrial chain

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Communications - Optical Modules Optical modules are the small interfaces that connect the fiber to the traditional copper network,

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The development direction of optical modules At present, the transmission capacity of the expansion rate

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The Optical Transceiver Market worth USD 15.42 billion in 2026 is growing at a CAGR of 13.67% to reach USD 29.26

In low-speed optical modules, their cost share is relatively low. However, in 400G, 800G, and future 1.6T optical

The market is projected to reach USD 15.4 billion in 2026, driven by increasing deployment of 400G and 800G optical modules, rapid

Central to any effective TEA is a reliable and detailed model of capital and operational costs. This paper reports the

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

Cost of Optical Communication Modules

Understanding the cost structure of optical module chips is essential for developers, investors, and network operators,

The industry is moving towards using 1.6T modules primarily for model training, while 800G modules, which are

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