

How much does a PCIe optical module cost



Article Overview

PCIe optical modules typically range from several hundred to over a thousand dollars per module, depending on speed, vendor, and technology generation.

Price Range and Factors

The cost of PCIe optical modules varies widely based on several factors:

- **Technology Generation and Speed:** Modules supporting higher PCIe generations (e.g., PCIe 3.0, 4.0, 5.0, or 7.0) and higher data rates (up to 128 GT/s for PCIe 7.0 demonstrations) are more expensive due to advanced photonics and precision manufacturing requirements .
- **Vendor and Brand:** OEM modules from companies like Cisco or Broadcom often carry a 20–40% premium over reliable aftermarket brands, reflecting longer warranties, enhanced support, and reduced downtime risk .
- **Module Type and Form Factor:** Embedded parallel optics (e.g., MiniPOD) or x8/x16 lane modules can cost more due to higher channel counts and complexity .
- **Raw Materials and Manufacturing:** Costs include lasers, silicon photonics chips, and cleanroom fabrication, which are significant contributors to the total price .
- **Supply Chain and Market Conditions:** Shortages of semiconductors or spikes in demand for data center upgrades can temporarily increase prices .

Typical Pricing Examples...

Article Content

Jan 29, 2026

PCI-SIG Exploring an Optical Interconnect to Enable Higher PCIe ...

PCI-SIG today announced the formation of a new workgroup to deliver PCI Express (PCIe) technology over optical

Nov 22, 2025

Optical Transceiver Pricing: Cost Ranges by Speed and Type

See practical price ranges for 1G-100G optical transceivers, DAC/AOC options, and why cost varies by speed, reach and technology

Dec 04, 2025

Optical Transceiver Market Price Trends 2026: TCO & Risks

An 800G-DR8 module might cost significantly more than two 400G-DR4 modules today, but the math changes when

Sep 10, 2025

PCIe Over Optics Explained: PCIe 7.0 & Beyond | Synopsys Blog

Learn how we're working with PCI-SIG to transition PCIe to optical interfaces and explore our demo of the PCIe 7.0

Sep 08, 2025

Transceivers, optical modules

SFP SFP+ XFP SFP28 QSFP+ QSFP28 optical modules with 100M, 1G, 10G, 25G, 40G, 100G bandwidths. Compatible with chosen

Dec 17, 2025

PCIe®-Over-Fiber, FireFly™ Optical Cable Assembly

PCUO-G3-04-015 PCIe®-Over-Fiber, FireFly™ Optical Cable Assembly Samtec's PCUO Series runs PCIe® 3.0 (8 GTps) and 4.0

Nov 26, 2025

PCI-SIG® Announces PCIe® Optical Interconnect Solution

The Optical Retimer ECN is now available for PCI-SIG members to download in the PCIe 6.4 and 7.0 specifications

Sep 14, 2025

Why PCIe 7.0 Over Optics

This performance was achieved using discrete electrical and optical components to build the PCIe over optics link.

Jul 01, 2026

BRKOPT-2699

High-Speed Interconnects: Backend network requires high speed 100G/200G or 800G optics to connect servers and network

Sep 10, 2025

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

May 19, 2026

PCIe OVER FIBER GUIDE

ACTIVE OPTICAL CABLE ASSEMBLIES Samtec PCIEO Series Active Optical Cable Assemblies use a patented optical engine

Apr 03, 2026

Cost structure of optical module chips | Weyland

The overall cost of an optical module chip depends on material choices, design complexity, manufacturing processes,

Dec 04, 2025

PCI Express over optical cabling: Performance, simplicity, efficiency

Optical solutions can be a key enabler for network architects who see value in using PCI Express (PCIe) as an I/O

Jan 10, 2026

Optical PCIe 7.0 connection hits a blazing 128 GT/s

During the event, Cadence demonstrated its 128 GT/s PCIe 7.0 IP's transmission and reception capabilities using a

Jun 15, 2026

Optical Transceiver Modules Prices & Specifications

What is Optical Transceiver Modules/SFP? Optical Transceiver Modules/SFP, also called fiber optic transceiver or optical

Jun 01, 2026

PCIe Over Optics Explained | Synopsys IP

Learn about the potential of PCI Express over Optics in addressing bandwidth demands and efficiency challenges in

May 18, 2026

Optical Module Procurement Guide

Purchasing an optical module means balancing the upfront price with whatever reliability exists should the module fail

Jan 13, 2026

PCIe Over Optics

There is more data to process in more places, more levels of data storage and access, and any delay can add latency

Feb 15, 2026

Faster, Farther and Going Optical: How PCIe Is Accelerating the AI ...

For two decades, PCIe was largely used at the board level. But through continued development and collaboration

May 10, 2026

PCIe Over Optics: Ushering In A New Era Of AI Interconnect And ...

In short, the emergence of "PCIe over optics" technology provides a new solution for data transmission within the

Sep 19, 2025

800G Optical Module Cost Analysis | TCO Optimization Guide

Complete guide to 800G optical module costs and TCO optimization for AI data centers. Includes pricing analysis,

Jun 22, 2026

What factors influence 400G optical transceiver modules price?

Discover the key factors that drive 400G optical transceiver pricing—from form-factor and component costs to market dynamics and

Aug 28, 2025

QSFP-DD Price Guide 2026: 400G/800G Costs & TCO Analysis

This guide delivers clear, accurate pricing data. It breaks down the current costs for 400G and 800G modules,

Apr 13, 2026

First successful PCIe 5.0 optical signal transmission test

Anritsu Corporation and KYOCERA Corporation have completed a successful PCI Express® 5.0 (PCIe® 5.0) optical

Jan 13, 2026

200G/400G/800G Optical Transceiver Modules | FiberMall

200G/400G/800G optical module features up to 40km transmission distances using QSFP56/QSFP-DD footprints for data center

Aug 05, 2025

SFP Module Price: Strategic Cost Analysis and TCO Factors

Compare SFP module prices, OEM vs third-party costs, and total cost of ownership (TCO). Learn what drives SFP pricing and how

Jan 10, 2026

100G QSFP28 Transceiver Modules | Optical Transceivers

The 100G QSFP28 module solution provides high-performance 100GbE connectivity for data centres, enterprise core & distribution

Jun 12, 2026

PCI Express Over Fiber Optic Extensions

PCI Express over fiber optic extension allows standard PCI Express cards to operate remotely from the

Feb 11, 2026

Future Versions of PCIe Express Could Use Optical Technology

According to PCI-SIG, it's convened a technology-agnostic workgroup to explore delivering PCI Express technology

Jan 19, 2026

10G SFP Price Guide: How Much Does a 10G SFP Module Cost

Learn the latest 10G SFP price ranges, key cost factors, brand comparisons, and how to buy reliable 10G SFP modules at the best

Jul 20, 2026

Cost of optical module electronic chips | Weyland

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

May 01, 2026

PCI Express

PCI Express Mini Card (also known as Mini PCI Express, Mini PCIe, Mini PCI-E, mPCIe, and PEM), based on PCI Express, is a

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