

How much does a transceiver optical module cost



Overview

QSFP28 Price Guide 2026: 100G Transceiver Costs & TCO
How much does a QSFP28 module cost?

The price of a QSFP28 module depends on the module type, reach, 10.

Key Takeaways

Optical transceiver modules can cost anywhere from \$5 for basic 1G SFPs to over \$1,000 for high-end 100G or specialized long-reach modules. Price Ranges by Speed and Type

- 1G SFP Modules: Generic or compatible modules typically cost \$5-\$25, while OEM-branded or industrial-grade units can range from \$60-\$120 .
- 10G SFP+ Modules: Compatible modules often sell for \$20-\$50, whereas OEM or long-reach versions can reach \$100-\$300 .
- 25G SFP28 Modules: Low-cost compatible short-reach modules may be \$16-\$80, while branded single-mode or specialized parts can cost \$200-\$900 .
- 40G QSFP+ Modules: Compatible short-reach modules are priced \$40-\$150, with long-reach or WDM-certified modules reaching \$300-\$1,000+ .



- 100G QSFP28 Modules: Entry-level compatible short-reach modules can start as low as \$35, while OEM LR4 or carrier-grade DWDM/coherent modules can exceed \$780-\$1,000+ .

Factors Affecting Cost

- Material Costs: Includes optical devices (lasers, detectors), electronic components (chips, capacitors), and packaging materials. Higher-quality components increase module cost .
- Manufacturing Costs: Production equipment, labor, and process efficiency impact pricing. Advanced manufacturing improves quality but raises costs .
- Engineering and Testing: Design verification, reliability testing, and qualification tests (temperature cycling, moisture resistance, shock) contribute to the final price, especially for high-speed modules .
- Brand and Warranty: OEM-branded modules often cost more due to warranty, platform compatibility, and vendor support, while third-party compatible modules are cheaper but may have limited support .
- Volume and Market Strategy: Bulk purchases and supplier relationships can significantly reduce per-unit cost, while specialized or low-volume modules remain expensive .

Practical Considerations

- Cost per Gigabit: A \$35 QSFP28 SR4 module delivers 100G, equating to \$0.35 per Gbps, whereas a \$20 SFP+ 10G module equals \$2 per Gbps .
- Alternative Options: For short distances, passive DACs (direct attach cables) costing \$25-\$40 can be more cost-effective than optical modules .
- Compatibility: Ensure modules meet the required optical specifications and switch platform coding to avoid performance issues, especially when using third-party modules . In summary, optical transceiver costs vary widely depending on speed, reach, brand, and technology. For budget-conscious deployments, compatible third-party modules offer significant savings, while OEM modules provide guaranteed performance, support, and reliability.

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