Cost-effective pluggable optical module PAM4

Overview

PAM4 is an optical modulation technique that allows for higher data rates and increased spectral efficiency compared to NRZ.

Key Takeaways

PAM4 pluggable optical modules typically range from $500 to over $5,000 depending on speed, reach, and form factor.

Typical Price Ranges100

G PAM4 QSFP28 modules: Usually priced between $500 and $1,500 for standard distances up to 80 km over single-mode fiber, such as the DWDM-100G-Q28-120 module supporting 103. 125 Gbps with PAM4 encoding. 200G PAM4 modules: Modules like the Amphenol QEPT 200G PAM4, which aggregate 200 Gbps over 4 channels, generally cost $1,000 to $2,500, depending on reach and operating temperature.

400G PAM4 OSFP modules: High-speed 400G OSFP modules using PAM4 technology, such as the CC-OSFP04SR4-12D, typically range from $2,000 to $4,000, supporting short-reach multimode fiber up to 100 meters. 800G PAM4 modules: Cutting-edge modules like the OSFP-800G-2xSR4, designed for AI and HPC data centers, can exceed $5,000, reflecting their high bandwidth, dual-port design, and advanced DSP integration.

© 2026 CJC FIBRE CONSULTANTS - All rights reserved

Factors Affecting Price

Data Rate and Channels: Higher aggregate speeds (400G, 800G) and multi-channel designs increase cost. Reach and Fiber Type: Long-haul single-mode modules with DWDM support are more expensive than short-reach multimode modules. Form Factor: QSFP28, OSFP, and OSFP-800G modules differ in size, density, and compatibility, affecting pricing.

DS

P and Laser Technology: Modules with integrated PAM4 DSPs, EML lasers, or VCSEL drivers for high performance and low power consumption are priced higher. Vendor and Warranty: OEM vs. third-party vendors, warranty length, and support services can influence cost.

Summary

While exact prices fluctuate based on vendor, volume, and market conditions, PAM4 pluggable optical modules are a premium component, with 100G modules starting around $500 and 800G modules exceeding $5,000. For precise pricing, contacting distributors or vendors like Amphenol, Marvell, or Edgeoptic is recommended, as they can provide quotes tailored to your network requirements.

Article Content

QEPT 4-TRX 200G PAM4

QEPT 4-TRX 200G PAM4 200 Gb/s High-Speed Optical Pluggable Module DOUBLE PERFORMANCE, SAME SIZE, the Amphenol AOP 56Gbps commercial temperature " Quad Embedded Pluggable

PAM4 Optical Modulation: Meeting the Demands of Increasing

PAM4 is an optical modulation technique that allows for higher data rates and increased spectral efficiency compared to NRZ. In PAM4, each symbol represents multiple bits of information

Arista LPO-800G-2DR4 Compatible 800G OSFP 2xDR4/DR8 Linear

Arista LPO-800G-2DR4 Compatible OSFP-800LPO-2DR4 OSFP PAM4 Linear-drive Pluggable Optics (LPO) Transceiver for 7800R4/7060X6 Series Switch, Support 800GBASE-DR8 (SMF, 1310nm,

QSFP28 PAM4 DWDM: High-Capacity 100G/400G Optical

With their cost-effectiveness, energy efficiency, and flexible deployment, FS QSFP28 PAM4 DWDM modules are the perfect choice for upgrading and expanding 100G/400G networks,

© 2026 CJC FIBRE CONSULTANTS - All rights reserved

Clipping PAM4 for 56G ER Optical Interconnects Using Cost-Effective

Clipping PAM4 for 56G ER Optical Interconnects Using Cost-Effective 10G-Class TOSA and ROSA Abstract: Amplifier-free O-band intensity modulation direct detection (IM/DD) optical system has been

100G PAM4 DWDM Optical Modules: Cost-Effective High-Speed

In conclusion, the 100G PAM4 DWDM optical module is a high-performance, cost-effective solution for modern networks. Offering high speed, low latency, and energy efficiency, it is

Single-Lambda 100G And PSM4 Technology Introduction

Designed to create cost-effective solutions for high-density switches, routers and transport networks, the goal of the MSA is to define an optical module specification that will enable

Marvell Ara PAM4 Optical DSP

The Marvell Ara PAM4 DSP is a next generation solution for GenAI and cloud datacenter interconnects utilizing pluggable transceivers. Ara features eight 200Gbps/channel PAM4 host electrical interfaces,

LPO MSA Specification

It builds on IEEE 802.3 and OIF CEI-112G-LINEAR-PAM4 specifications. It enables Ethernet-like links with 1, 2, 4, or 8 lanes for data centers, using low power, high port density, low cost, and low latency

Chinese Optical Modules Own 7 of the Top 10 Seats. So Why Are

LPO (Linear Pluggable Optics) removes the DSP from inside the optical module and has the switch chip handle signal processing instead. The module becomes “dumber,” but power drops

XPO: Redefining Pluggable Optics for AI Networking

To address these challenges, Arista Networks, together with an ecosystem of more than 45 industry partners, introduces eXtra-dense Pluggable Optics (XPO) . XPO represents a new class of optical

Compute Optics Interface (COI): Energy Efficient Photonic

The “Compute Optics Interface” (COI) addresses the need for efficient optical connectivity between local AI compute elements, particularly over longer distances where optics provide clear energy advantages.

Understanding Optics Module Trends and Growth Dynamics

© 2026 CJC FIBRE CONSULTANTS - All rights reserved

The Optics Module market is expanding rapidly, driven by data center proliferation and 5G deployment. Analyze the 12% CAGR to $42 billion by 2033 with our market insights.

400G vs 800G Optical Modules: Differences, Use Cases, and

Compare optical modules for data centers and AI clusters. Learn key differences in standards, power, cabling, and use cases.

Linear Drive Pluggable (LPO) Early Adoption: 800G Engineering

What Is Linear Drive Pluggable (LPO)? Linear Drive Pluggable (LPO) is a DSP-less optical transceiver architecture designed for 800G and future 1.6T Ethernet networks. Unlike

1.6T OSFP 2xDR4/DR8, 1310nm, 500m, DDM, CDR,

The MJ-OSFP1.6TB-DR8 is a cost-effective, high-performance OSFP module tailored for AI datacenter applications, delivering an aggregate throughput of 1.6

Heterogeneous Integration Technology Drives the Evolution of Co

Planar optical waveguides fabricated on glass substrates using ion-exchange technology have significant advantages such as optical compatibility with glass fibers, suitability for mass

MaxLinear Announces Availability of Washington 200G TIA for Next ...

MaxLinear''s Washington 200G TIA enables cost-effective, power-efficient, 1.6T optical connectivity for AI data centers. Washington is the first product in a planned family of low-noise TIAs

Contact Us

Continue your research online:

Website: https://cjcconsultants.co.za
Technical inquiry: https://cjcconsultants.co.za/contact.html

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

© 2026 CJC FIBRE CONSULTANTS - All rights reserved