

Article Overview

Leading suppliers of computing power optical modules include Amphenol, SENKO Advanced Components, Marvell, Analog Devices, and Diodes Incorporated, offering high-speed, power-efficient solutions for AI and data center applications.

Key Suppliers and Offerings

Amphenol provides a comprehensive portfolio of high-speed optical components, transceivers, and active optical cables (AOCs) designed for data centers, HPC, telecom, and cloud infrastructure. Their XPO-LPO optical transceivers support 12.8 Tb/s data rates with 224 Gb/s per lane, optimized for AI and hyperscale computing, featuring low latency, low power consumption, and liquid cooling for thermal management . They also offer 800G/1.6T OSFP transceivers suitable for DR4, FR4, and breakout AOC configurations. SENKO Advanced Components specializes in precision optical interconnects, including Metallic PIC Couplers (MPCs) used in co-packaged optics (CPO) systems. Their components ensure repeatable alignment of microlenses and optical fibers, critical for high-density AI compute trays delivering up to 102.4 Tbps bandwidth . Marvell develops co-packaged optics solutions in partnership with equipment manufacturers and interconnect companies. Their products integrate light engines for opto-electric conversion close to ASICs, reducing power per bit and improving performance per watt in AI data centers . Analog Devices offers optical power solutions, including thermoelectric cooler (TEC) controllers, load switches, point-of-load (POL) regulators, and power micro modules. These enable compact, power-efficient optical module designs and accelerate development cycles for high-performance optical systems . Diodes Incorporated provides analog and discrete power solutions that support optical systems, offering components for efficient power management in optical modules .

Market Trends

The optical module market is rapidly evolving due to AI and large-scale computing demands. 800G modules, initially limited to supercomputing, are projected to dominate by 2025, driven by AI workloads requiring high-speed interconnects within and between data centers . Co-packaged optics is emerging as a key technology to overcome copper limitations, improve energy efficiency, and enable ultra-high bandwidth in AI-scale data centers .

Summary

For organizations seeking high-performance optical modules for AI and data center applications, suppliers like Amphenol, SENKO, Marvell, Analog Devices, and Diodes Incorporated provide a range of solutions from high-speed transceivers to power-efficient module components. These suppliers support the latest trends in

800G modules, co-packaged optics, and low-latency, high-density interconnects, ensuring scalability and energy efficiency for modern computing workloads.

These companies form the core backbone of the global computing chip and high-speed optical module supply chain,

The only domestic company simultaneously possessing mass production capabilities for a full range of high-speed

Discover the increasing demand for optical modules in AI computing and the role they play in supporting high-speed

Global Optical Module × AI Industry - Concise Investment Thesis (Key Bullet Points) 1. Global Market Outlook

Marvell® is at the forefront of this change, delivering PAM4, coherent and coherent-lite DSPs that power AI fabrics, data center

The optical module chip market exhibits a fragmented yet competitive structure with global technology providers, semiconductor

"Standing in the Light: Understanding the Optical Module and CPO Industry Chain" This article analyzes the critical role

Rethinking the limits of AI, Lightmatter merges photonics and computing to build a future where speed,

Optical Module and Computing Infrastructure Supply Chain Data Tracking · Issue 4, May 2026 This week's review

Driven by the rapid growth of global digital computing power and artificial intelligence, optical modules, the core

Innolight and Eoptolink are estimated by industry sources to supply roughly 60% of NVIDIA's 800G volume, controlling

ASML gives the world's leading chipmakers the power to mass produce patterns on silicon, helping to

The relentless surge of artificial intelligence, hyperscale computing, and next-generation

To help you choose the best partner, this article will analyze and introduce 10 companies in the optical transceiver

Intel's Optical Compute Interconnect (OCI) is a new class of optical connectivity devices, delivering multi-terabit per second solutions

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

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