

Article Overview

Leading manufacturers of silicon photonics optical modules include Intel, Cisco Systems, IBM, NeoPhotonics, Hamamatsu Photonics, and STMicroelectronics.

Market Overview

The global silicon photonics optical module market was valued at approximately USD 960 million in 2023 and is projected to reach USD 1.48 billion by 2030, growing at a CAGR of 6.4% . The market is primarily driven by data center networks, where silicon photonics modules increase bandwidth from 100G to 400G, and by the adoption of co-packaged optics (CPO) in AI infrastructure . North America holds the largest market share, while Asia-Pacific, particularly China, is experiencing rapid growth due to domestic demand and strong manufacturing capabilities .

Key Manufacturers

- o Intel: A global leader in silicon photonics, Intel produces high-speed optical transceivers and modules for data centers, supporting 100G, 200G, and 400G applications .
- o Cisco Systems: Offers silicon photonics modules integrated into networking equipment, focusing on high-bandwidth, low-latency optical interconnects .
- o IBM: Develops silicon photonics solutions for AI and high-performance computing, emphasizing integration with co-packaged optics .
- o NeoPhotonics: Specializes in ultra-pure light lasers and optoelectronic products, including silicon photonic COSA modules operating at 400Gb/s per wavelength, with ongoing research for 800G and higher .
- o Hamamatsu Photonics: Provides a wide range of silicon-based photonic devices, including photodiodes and PIN photodiodes, with applications in scientific instrumentation, medical imaging, and emerging photonics research .
- o STMicroelectronics: Offers semiconductor technologies and imaging solutions, embedding advanced silicon photonics innovations in its product portfolio .
- o Source Photonics: A global manufacturer of optical transceivers and modules, including high-speed pluggable transceivers and CPO solutions for AI data centers .

Product Types and Applications

- o 100G Silicon Photonics Modules: Represent the largest share of the market (~87%), widely used in data centers .
- o 200G and 400G Modules: Increasingly adopted for high-performance computing and AI workloads.
- o Applications: Primarily in data centers (82% of market), telecom networks, cloud infrastructure, and AI

model training clusters .

Emerging Trends

- o Co-Packaged Optics (CPO): Integration of optical modules directly with switch ASICs to reduce latency and power consumption .
- o Photoelectric Integration (OEIC): Moving from discrete optical-electrical conversion to integrated opto-electronic circuits for higher efficiency .
- o AI Data Center Expansion: Driving demand for high-bandwidth, low-power optical interconnects . These manufacturers dominate the silicon photonics optical module market, with North America leading in market share and Asia-Pacific showing rapid growth due to large-scale data center deployments and supportive policies .

The "Global Silicon Photonics Market 2025-2035" report has been added to ResearchAndMarkets.com's offering. The

In the rapidly evolving world of data communication and high-performance computing, silicon photonics optical

The Silicon Photonics Optical Module Market is entering a transformative era shaped by rapid technological advancements,

Manufacturers of test equipment provide commercial systems for wafer-level electrical/optical testing of silicon photonics, with fast

The new report primarily categorizes optical modules based on a scale-up and scale-out framework, and further

Top 10 Companies In Silicon Photonics Market Rise in adoption of 2.5D integrated onboard silicon photonics by data

Silicon Photonics Market Size, Share & Trends According to Marketsandmarkets, the silicon photonics market size was valued at

Co-packaged optics (CPO) is a packaging technology that integrates optical components in the most innovative ways. ASE has

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

efficiency, and intelligence

Silicon Photonics Optical Module Market Overview The silicon photonics module is based on silicon photonics integration technology

Complementary metal-oxide-semiconductor-integrated silicon photonics offers a practical path forward by combining

Silicon photonics is gaining traction in high-speed optical modules, particularly in data

Play Video Wafer Scale Manufacturing The Tru-SiPh(TM) platform was built from the ground up to disrupt the traditional

Credo is a provider of end-to-end Silicon Photonics solutions, addressing the constantly growing needs of hyper-growth data players.

What will the next generation of silicon photonics look like? What are the common threads in the integration and

Here, we introduce a silicon photonic MEMS platform consisting of high-performance nano-opto-electromechanical

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