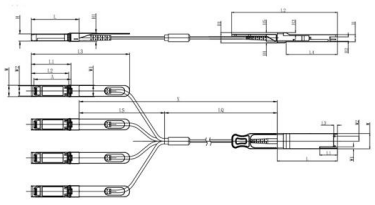
Adam Tas Corridor Energy

Optical Module in AI Chip

Overview

Optical modules convert electrical signals into light to move data quickly and reliably in AI systems, enabling fast and smooth data processing. Introduction: The Rise of AI Elevates Optical Modules to Strategic Importance With the rapid rise of AI technologies, data has become a new production factor. The high-speed, low-latency, and energy-efficient flow of this data requires a robust communication infrastructure. Yole Group attended OFC 2026 with a dedicated team of analysts on site, actively engaging with major players in the photonics ecosystem throughout the event. As AI workloads expand, GPU/XPU clusters and their bandwidth demands are growing at unprecedented rates. A new report from Bernstein lays out a future where Co-Packaged Optics (CPO) technology will fundamentally shift the value chain, benefiting chip designers like Nvidia and Broadcom at the expense of traditional optical module manufacturers, even as the technology's widespread adoption remains years. The global AI optical module market grew from RMB 600 million (USD 90 million) in 2020 to RMB 6 billion (USD 900 million) in 2024, achieving a compound annual growth rate (CAGR) of 82.

Optical Module in AI Chip



Unit mm

QSFP28	L	L1	L2	L3	L4	W	W1	W2	H	H1	H2	H3	H4	H5	H6
Max	72.2	-	128	4.35	61.4	18.45	-	6.2	8.6	12.4	5.35	2.5	1.6	2.0	-
Type	72.0	-	-	4.20	61.2	18.35	-	-	8.5	12.2	5.2	2.3	1.5	1.8	6.55
Min	68.8	16.5	124	4.05	61.0	18.25	2.2	5.8	8.4	12.0	5.05	2.1	1.3	1.6	-

SFP28	L	L1	L2	L3	W	W1	W2	H	H1	A
Max	57.6	47.7	44.55	119.9	13.8	14.0	12.3	8.7	10.3	45.25
Type	57.4	47.5	44.35	117.9	13.55	13.8	12.1	8.5	10.1	45
Min	57.2	47.3	44.15	115.9	13.3	13.6	11.9	8.4	9.9	44.65

Nvidia invests $4B in co-packaged optics suppliers Lumentum

Nvidia Corp. today announced plans to invest in Lumentum Holdings Inc. and Coherent Corp., two publicly traded suppliers of optical networking equipment. Each company is set to receive

Optical Products , AI Clusters , AI Infrastructure

Learn about optical solutions that are open, scalable and power-efficient for AI infrastructure.

AI infrastructure accelerates the shift to scalable optical systems

Emerging themes and trends OFC 2026 showed that AI scale-up is reshaping optical roadmaps. Optical interconnect is increasingly central not just to networking, but to AI system

Co-Packaged Optics (CPO)Co-Packaged Optics (CPO)

Traditional pluggable optical modules are increasingly constrained by signal loss, power

consumption, and latency because they require long electrical traces

Samsung Foundry Reportedly Wins Optical Module Order,

As a result, optical transmission technologies are becoming increasingly important. TrendForce forecasts that co-packaged optics (CPO) will steadily increase their share of optical

Silicon photonics and co-packaged optics at the heart of

With AI reshaping data infrastructure, silicon photonics and co-packaged optics represent critical enablers of tomorrow's data center. Yole

Silicon Photonics and Co-Packaged Optics at the Heart

Yole Group unveils its latest photonic market and technology analyses, Silicon Photonics 2025 and Co-Packaged Optics for Data Centers 2025, which

Optical Interconnect Technology Analysis: LPO, NPO, CPO

Exploring optical interconnects for AI data centers: LPO for low-power, short-distance links, NPO for high-density, near-package connections,

Why Are High-Speed Optical Modules Increasingly Dependent on

In the AI era, the performance bottlenecks of high-speed optical modules are no longer limited to chip speed alone, but also to the control of every detail in the optical path. High-performance optical

Celestial AI Introduces Photonic Fabric(TM) Module

August 29, 2025 -- Celestial AI, the creator of the Photonic Fabric(TM) scale-up networks for accelerated computing, has introduced the Photonic Fabric Module,

AI data centers spark a 59% optical boom, shifting profits to chipmakers

A Bernstein report details how the shift to Co-Packaged Optics (CPO) in AI data centers will redistribute profits from traditional optical module makers to chip designers like Nvidia and

Optical Modules and Networks for AI-Era Data Centers

We review recent advances in optical modules and networks for AI-era data centers (DCs), covering intra-DC optical pluggable transceivers, DC interconnections, optical cross-connect based flexible

AI optical transceiver market up 57% YoY , Electronics Weekly

AI optical transceiver market up 57% YoY The global market for AI-focused optical transceivers grew 57% last year from $16.5 billion in 2025 to $26 billion in 2026, says TrendForce.

Google's High-Speed Interconnect Architecture to Push

Google's next-generation TPU, Ironwood, integrates a 3D Torus network topology with the Apollo optical circuit switch (OCS) all-optical network,

IBM Brings the Speed of Light to the Generative AI Era

CPO technology aims to scale the interconnection density between accelerators by enabling chipmakers to add optical pathways connecting chips on

All-optical synthesis chip for large-scale intelligent

We produced an all-optical chip for large-scale intelligent vision generation, named LightGen. By integrating millions of photonic neurons on a

These 6 stocks could be major winners of an upcoming optics

The AI data-center buildout is driving shortages of optical components, and Wall Street sees opportunities in optical suppliers. First, it was graphics processing units; then, it was memory

Global AI Optical Transceiver Market to Reach US$26 Billion in 2026

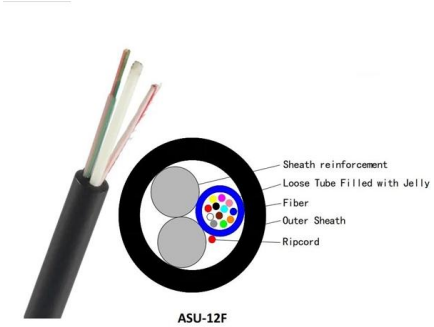
TrendForce's latest research indicates that the global market for AI-focused optical transceivers has entered a phase of rapid growth, with market size projected to expand from

Optical stocks face 4 hurdles in AI-driven boom

Key Takeaways: A Guosheng Securities report forecasts a "winner-take-all" consolidation in the optical communication sector despite an AI-driven boom. The shift to 1.6T modules is creating

How AI Revolutionizes the Optical Module Industry

The penetration of ASIC chips further drives optical module demand. By 2025, optical modules are expected to account for 18% of AI infrastructure



Photonics Is Where AI Infrastructure Meets Physical Limits Copper

Sergey (@SergeyCYW). 986 likes 22 replies. Photonics Is Where AI Infrastructure Meets Physical Limits Copper interconnects are reaching practical limits inside high-performance data

Global AI Optical Module Market: Size, Growth, and

The 1.6T optical module (with a rate reaching 1.6 trillion bits per second) has become the core enabler of next-generation AI computing

AI Data Center Optical Transceiver Module Market 2025-2030

AI Data Center Optical Transceiver Module Market 2025-2030 Posted on Apr-03-2026 The AI data center optical transceiver market has entered a historic growth phase, driven by the exponential

Contact Us

For datasheets, pricing, or custom telecom energy solutions, please visit: https://www.koskolong.co.za