

Optical Module AI Substrate



Overview

Optical modules convert electrical signals into light to move data quickly and reliably in AI systems, enabling fast and smooth data processing. SCALE CPO solution is the industry's first OCI MSA capable platform and built with GF's proven silicon photonics technology MALTA. N., May 4, 2026 – GlobalFoundries (Nasdaq: GFS) (GF) today announced the introduction of its SCALE™ optical module solution for co-packaged optics (CPO). GF's SCALE. XPO represents a new class of optical pluggable module designed specifically for next-generation AI data center fabrics. GF's Silicon photonics Co-packaged Advanced Light Engine (SCALE) solution is the industry's first Optical Compute Interconnect Multi-Source Agreement (OCI MSA) capable platform. CPO, a technology that deeply co-packages the optical engine with the switch chip, offers a solution for next-generation AI cluster interconnects by shortening the signal transmission path, reducing power consumption, and increasing bandwidth density.



Article Content

Sep 17, 2025

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

Sep 21, 2025

XPO: Redefining Pluggable Optics for AI Networking

The Arista XPO (eXtra-dense Pluggable Optics) module is a purpose-built solution designed from the ground up to address the unique challenges of hyperscale AI data centers.

May 25, 2026

GlobalFoundries accelerates adoption of co-packaged optics for

MALTA, N.Y., May 4, 2026 – GlobalFoundries (Nasdaq: GFS) (GF) today announced the introduction of its SCALE™ optical module solution for co-packaged optics (CPO). GF's SCALE solution, or Silicon

Feb 12, 2026

The Application of Optical Modules in AI Technology

Optical modules convert electrical signals into light to move data quickly and reliably in AI systems, enabling fast and smooth data processing.

Apr 30, 2026

GlobalFoundries accelerates adoption of co-packaged optics for

SCALE CPO solution is the industry's first OCI MSA capable platform and built with GF's proven silicon photonics technology MALTA, N.Y., May 4, 2026 – GlobalFoundries (Nasdaq: GFS)

Jun 25, 2026

Nvidia's \$4B Photonics Venture: What You Need to Know

Nvidia's \$4B investment in optical component suppliers Lumentum and Coherent heralds an era of optical interconnects inside AI data centers.

Oct 09, 2025

Yole Group

Yole Group - Access daily business, market & technology updates in the semiconductor industry, our Analysts' Analysis and Presentations and more

Feb 05, 2026

GF Overseas Electronics & Communications 董 震 Zhen Ding 4Q25

On the earnings call, management expressed strong confidence in AI-driven growth, targeting 6-7x revenue growth in optical modules and AI server PCB businesses. In addition,

Dec 16, 2025

China accelerates in indium phosphide, the new bottleneck in AI

The relationship between optical modules and InP isn't linear. EML (Electroabsorption Modulated Laser) solutions typically consume more substrate because they require multiple chips per module and

Aug 30, 2025

AI Data Center Optical Transceiver Module Market 2025-2030

The AI data center optical transceiver market has entered a historic growth phase, driven by the exponential expansion of AI computing clusters and the accelerated migration from traditional copper

Aug 22, 2025

Optical Modules and PCBs: Driving High-Speed Data Transmission in

Our leadership in AI-enabled communication networks makes us the perfect partner for high-quality, value-driven optical modules and PCBs. In this blog, we'll explore the background,

May 19, 2026

AI servers are becoming increasingly integrated systems. GPUs,

AI servers are becoming increasingly integrated systems. GPUs, CPUs, NICs, switch ASICs, optical modules, power modules, liquid cooling systems, and high-speed PCBs must be designed as

Apr 22, 2026

Optical Communication Industry Trends 2026: AI, 800G/1.6T Optical ...

Explore optical communication industry trends in 2026, driven by AI infrastructure, 800G and 1.6T optical modules, silicon photonics, and next-generation data center connectivity solutions.

Jul 16, 2025

Photonics Is Where AI Infrastructure Meets Physical Limits Copper ...

Sergey (@SergeyCYW). 998 likes 21 replies. Photonics Is Where AI Infrastructure Meets Physical Limits Copper interconnects are reaching practical limits inside high-performance data

Aug 09, 2025

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

Mar 26, 2026

GlobalFoundries Announces New Co-Packaged Optics Solution for AI

GlobalFoundries (GF) announced the introduction of its SCALE™ optical module solution for co-packaged optics (CPO).

Feb 25, 2026

Optical Component Startup Tracker

The number of venture-backed optical component startups has exploded - the Optical Component Start-Up Tracker identifies these companies

Sep 03, 2025

CPO (Co-Packaged Optics): A Key Technology Path for

Pluggable optical modules, with their mature ecosystem and flexible upgrade capabilities, remain the preferred solution for AI clusters. Their

Dec 10, 2025

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

Jan 13, 2026

AT& S advances glass core substrates for AI, high-performance

"Glass core substrates are helping shape the systems that will power the AI era. They provide a stable foundation for larger, more capable chip packages and create opportunities for new

Dec 15, 2025

LPO vs NPO vs CPO: The Evolution of Optical Interconnects in AI

Each architecture emphasizes different design priorities, and together they form the technological framework for optical interconnects in next-generation AI data centers. Frequently

Dec 29, 2025

Warning: The entire AI industry will likely be bottlenecked by two ...

And two vendors could freeze the global InP substrate market covering nearly all of: - Hyperscaler optics (TPU pods, etc) - Optical transceivers (5g, data) - LiDAR (robotaxis, drones,

Dec 11, 2025

The Rise of Co-Packaged Optics: A Deep Dive into CPO

Understanding CPO Optical Modules: The Core Innovation Unlike a conventional pluggable optical transceiver that slots into a front panel, a CPO

May 12, 2026

Next generation Co-Packaged Optics Technology to Train & Run

A co-packaged optic module design was developed to support electronic and optics compatibility, industry standards where applicable and scaling for design, process, assembly, test, pluggable

Apr 19, 2026

GlobalFoundries launches SCALE optics for AI data centers | GFS

GlobalFoundries accelerates adoption of co-packaged optics for advanced AI data centers with SCALE optical module solution

Jan 19, 2026

[SMM Tin News Flash: Institution: Micro LED CPO Optical Transceiver ...

According to TrendForce's latest Micro LED industry research, generative AI is driving a rapid climb in demand for high-speed optical communications.

Jan 23, 2026

Co-Packaged Optics (CPO) Market Size to Hit USD

The global co-packaged optics (CPO) market size is evaluated at USD 95.04 million in 2025 and is predicted to hit around USD 1,055.11 million by

Contact Us

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