

# Optical modules are being phased out



## Article Overview

Traditional optical modules are gradually being replaced by integrated and co-packaged optics (CPO) due to advances in silicon photonics and the demands of AI-driven data centers.

### Technological Drivers

The shift away from pluggable optical modules is primarily driven by silicon photonics and co-packaged optics (CPO), which integrate lasers and optical components directly onto silicon chips. Nvidia's Spectrum-X switches, for example, use CPO technology to achieve 5x better energy efficiency, 5x longer AI system uptime, and 10x higher reliability compared to traditional optical modules, while eliminating the need for expensive, field-replaceable modules costing \$800–\$2,000 each. Embedded solutions like On-Board Optics (OBO) and Near-Packaged Optics (NPO) are also gaining traction, offering higher bandwidth with lower power consumption, which is critical for AI clusters and hyperscale data centers.

### Market and Supply Chain Implications

The transition to integrated optics is reshaping the supply chain. Traditional optical module manufacturers face pressure as major players like Nvidia, Microsoft, and Amazon develop in-house CPO solutions. Supply constraints for critical components, such as helium-3 for lasers, and geopolitical factors affecting production in Russia and China, further accelerate the shift. By 2029, CPO is expected to become the de-facto standard, with traditional modules surviving only in legacy 200G-and-below segments ....

## Article Content

Opinion: optical transceivers at the chokepoint of AI growth and supply ...

As AI infrastructure accelerates at an unprecedented pace, optical connectivity has become one of the defining

How Long Do SFP/QSFP Last? Expected Lifespan

Different module types and deployments age differently. Short-reach SR optics in intra-rack

Optical Module Evolution: From 400G to 3.2T

Explore the evolution of optical modules from 400G to 3.2T. Learn how 800G, 1.6T, and future optics enable AI, HPC,

Optical Module Market Size, Competitors & Forecast to

The Optical Module Market, valued at USD 30.01B in 2026, is projected to reach USD 66.94B by 2032,

Co-Packaged Optics — a deep dive | APNIC Blog

Optical modules are known to experience both hard and soft failures. Even with high-quality optics, hard failure rates

Some Improvements, Lots of Hype: 2025 fiber optic update

Hard ribbons are also being phased out—another big change. Several new fiber optic connectors have been

The Fading Light of Optical Drives: Why They're Becoming a Thing of

Optical drives are becoming a thing of the past due to the increasing popularity of digital storage and streaming

Optical Modules Future-Proof Strategies: Market Trends 2026-2034

The optical modules market is booming, projected to reach \$27.4 billion by 2033 with an 8% CAGR. This

Optical Module Evolution: From 400G to 3.2T

Optical modules, responsible for carrying the majority of intra-data center traffic, have become a foundational building

The Technological Evolution and Application Trends of Modern Optical ...

Future optical modules will continue evolving toward greater density, higher speeds, affordability, extended reach, and

Beyond Chips: Unveiling the Future of the Global Silicon Photonics ...

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

Silicon Photonics and Next-Generation Optical Interconnects — Why

Silicon photonics technology is moving from the laboratory to large-scale commercial deployment, making 2026 a

Timetable for lamp exit | licht

Timetable Fluorescent lamps for general lighting are being phased out in accordance with RoHS: Compact fluorescent lamps without

OPTICAL CIRCUIT SWITCHING FOR AI AND

Executive Summary Optical Circuit Switching (OCS) has emerged as a critical technology for next-generation Artificial Intelligence

With Optical Drives Being Phased Out, Is The Same Inevitable For

With Optical Drives Being Phased Out, Is The Same Inevitable For The Hard Drive / Flash Memory? Apple

Next-Gen Optical Networking: Transitioning Beyond 40G CFP Modules

As hyperscale data centers experience 92% year-over-year growth in east-west traffic and 78% of enterprises report infrastructure

Silicon Photonics and the Future of Optical Modules — How HaloWill is

By 2026, the penetration rate of silicon photonics technology in 800G optical modules is expected to reach 50%, and

Optical Transceiver Technology Evolution Over 25 Years

Many organizations have been working on transceiver interoperability. The Institute of Electrical and Electronics Engineers (IEEE)

Information about the product phase-out of S7-300 / ET 200M

2025\_10\_Phase\_out\_plan\_S7-300\_ET200M\_to\_ET200MP\_Factory\_Automation.xlsx (116,5 KB) In addition to

Traction of embedded optical modules highlighted in Counterpoint report

Pluggable optical solutions have been around since 2016, but integrated solutions — namely OBO, NPO and CPO —

Who Will Dominate the Optical Module Industry? Key Players and

For instance, 10G optical modules, which were once the gold standard, are now being phased out as the need for higher-speed

## Why Optical Drives Are Becoming a Thing of the Past

Are optical drives really becoming a thing of the past? Well, the short answer is – yes, optical drives are being phased

## What Is an Optical Module and Its FAQs (V200)

What Is an Optical Module and Its FAQs (V200) Describes what an optical module is and FAQs, including the fundamentals,

## CPO Technology Nvidia: Death of Optical Modules and

Finished optical module makers have been cut out. Their role as “box assemblers” is no

## Everything You Need to Know About Optical Modules

As optical modules become more integral to network infrastructure, smaller, more efficient,

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

Being number one in shipments and number one in excess profit are not the same thing. This article examines how

## Is optical audio (TOSLINK) obsolete?

But there are other voices out there that may differ. What is optical audio? Optical audio is the term for a fiber optic

## Transceiver Form Factors: SFP, QSFP, CFP & Beyond

GBICs were phased out and ultimately replaced by SFPs. Initially designed to support

## Optical Modules Market Research Report 2034

Optical Modules Market Outlook 2025-2034 The global optical modules market was valued at \$14.8 billion in 2025 and is projected to

## Optical Modules Market Size, Growth Trends & Forecast

The Optical Modules Market encompasses the design, manufacturing, and deployment of compact, high-performance

## The History of Optical Transceiver Form Factors

Let's take a look at the history of optical transceiver form factors and those that are still available and used today – from GBIC to SFP

## Is optical really dead? : r/hometheater

Ive been banging on recently about how monitor should have optical out like TV's do and get told that optical is dead but I dont see

Information about the product phase-out of S7-300 / ET 200M

For the SIMATIC S7-300 system and the ET 200M I/O system, the PM400 milestone (product phase-out

The Most Comprehensive Guide Of Optical Modules

Explore the ultimate guide to optical modules. Learn types, functions, performance metrics

Is the optical cable dying?

And while the optical cable was the digital audio transfer method of choice for decades, it has started to disappear.

Optical Module Chip Market 2025

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

Reasons for the Collapse of Optical Modules: Top Institutions Report ...

On June 10, independent research institution SemiAnalysis, focused on semiconductors, AI infrastructure, and data

Co-Packaged Optics — a deep dive | APNIC Blog

Operational Complexity: Field replacement and failure management become more complex. A failure in an optical

Optical Module Trends: SiPh, LRO, LPO, Coherent, and CPO

In the rapidly evolving field of optical communications, emerging challenges and growing demands—fueled primarily by

Roadmapping the next generation of silicon photonics

Silicon photonics has developed into a mainstream technology driven by advances in optical communications. The

Recent advances in optical technologies for data centers: a review

A. High Bandwidth Links There have been considerable advances in high-bandwidth pluggable optical interconnects for the data

## Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.thebucketlistbook.co.za>

Email: [sales@thebucketlistbook.co.za](mailto:sales@thebucketlistbook.co.za)

Phone: +33 1 42 78 39 16

Address: 10 Rue de la Paix, 75002 Paris, France

This document is for informational purposes only. Specifications subject to change without notice.

