

# Standalone Switch Silicon Photonics



## Overview

In the last decade, silicon photonic switches are increasingly believed to be potential candidates for replacing the electrical switches in the applications of telecommunication networks, data center and high-throughput computing, due to their low power consumption. In the last decade, silicon photonic switches are increasingly believed to be potential candidates for replacing the electrical switches in the applications of telecommunication networks, data center and high-throughput computing, due to their low power consumption. NVIDIA's co-packaged optics (CPO) switches with integrated silicon photonics are the world's most advanced networking solution for the era of agentic AI. Replacing pluggable transceivers with silicon photonics on the same package as the ASIC, NVIDIA CPO innovations provide 5x better power. Valencia, Spain – March 31, 2025 – iPrionics, a leader in software-defined photonics, today launched its Optical Networking Engine, ONE-32, the world's first Optical Circuit Switch (OCS) product based on silicon photonics. Tailored for AI workloads and energy-efficient cloud infrastructure, the. In 2025, NVIDIA will launch photonic switches with co-packaged optics (CPO), a bold move driven by technological necessity and surging market demand. This innovation, set to debut with the Quantum-X InfiniBand switches in late 2025 and Spectrum-X Ethernet switches in 2026, targets the explosive. The optical circuit switch presented here is an integrated, non-blocking, switch built on a scalable silicon photonics platform.

## Article Content

Mar 29, 2026

iPronics Unveils World's First Silicon Photonics Optical ...

iPronics, a leader in software-defined photonics, today launched its Optical Networking Engine, ONE-32, the world's first Optical Circuit Switch (OCS) ...

May 05, 2026

A comprehensive analysis of silicon photonic switching chips

In this study, we categorised silicon-integrated optical switches by their internal mechanisms and discussed the most advanced literature on the subject. We additionally take a look ...

Mar 16, 2026

NVIDIA Debuts Silicon Photonics Switches for AI Data Centers

NVIDIA has unveiled a pair of co-packaged silicon photonics networking switches that it says will allow AI facilities to connect millions of GPUs across sites while drastically reducing energy ...

Aug 31, 2025

Large-scale silicon photonics switches for AI/ML interconnections ...

We first provided a brief overview of the silicon photonics switches we have developed, followed by a detailed description of our recently reported  $32 \times 32$  switch operating in the O-band.

Dec 25, 2025

Ultra-low-power consumption silicon electro-optic switch based on ...

In this study, we proposed an ultra-low-power consumption silicon electro-optic switch based on photonic crystal nanobeam cavities on a foundry platform.

Jul 05, 2025

State of the Art and Perspectives on Silicon Photonic ...

In this paper, we systematically discuss the state of art of the silicon photonic switch engine, for example, MZI, MRR and MEMS waveguide coupler.

Aug 14, 2025

iPronics Unveils World's First Silicon Photonics Optical Circuit Switch ...

iPronics, a leader in software-defined photonics, today launched its Optical Networking Engine, ONE-32, the world's first Optical Circuit Switch (OCS) product based on silicon photonics. ...

Sep 20, 2025

NVIDIA's 2025 photonic switch revolution: powering the AI future

As GPU clusters scale, this power drain siphons energy away from critical compute tasks. NVIDIA's CPO solution integrates silicon photonics directly into the switch ASIC, eliminating ...

Oct 21, 2025

Large-Scale Silicon Photonic Switches with Sub-Microsecond ...

One such emerging technology is the optical circuit switch, which can increase the performance, flexibility, and power consumption of data centers. The optical circuit switch presented ...

Feb 22, 2026

Large-Scale Silicon Photonic Switches

On-chip loss: 15.8 dB K. Tanizawa, et al, "Ultra-compact 32 × 32 strictly-non-blocking Si-wire optical switch with fan-out LGA interposer," Optics Express, 2015.

Aug 03, 2025

NVIDIA Silicon Photonics for Agentic AI Networking

NVIDIA's co-packaged optics (CPO) switches with integrated silicon photonics are the world's most advanced networking solution for the era of agentic AI. Replacing pluggable transceivers with silicon ...

## Contact Us

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