

New Silicon Photonics Technology for Base Stations



Overview

Inside a data center's transceivers, ST's new, proprietary silicon photonics (SiPho) technology will bring users the ability to integrate multiple complex components into one single chip, while ST's next-gen proprietary BiCMOS technology brings ultra high-speed and. Inside a data center's transceivers, ST's new, proprietary silicon photonics (SiPho) technology will bring users the ability to integrate multiple complex components into one single chip, while ST's next-gen proprietary BiCMOS technology brings ultra high-speed and. The PIC100 is ST's first silicon photonics technology and one of the most efficient PICs on a 300 mm wafer, thus enabling 200Gbps/lane and even greater bandwidth in the future. Indeed, this is a highly symbolic launch as it inaugurates a long series of PICs that will bring new efficiencies to data.

STMicroelectronics of Geneva, Switzerland says that it is helping hyperscalers, and the leading optical module provider, to overcome these challenges by unveiling its next generation of proprietary technologies for higher-performing optical interconnect in data centers and AI clusters. Its new. NVIDIA is integrating silicon photonics directly with its NVIDIA Quantum and NVIDIA Spectrum switch ICs to improve data center networking, resulting in 3. The co-packaged silicon photonics technology reduces component count, enhances performance, and streamlines data. Silicon Photonics is an emerging technology that is bringing a paradigm shift in the field of single mode fiber-optic communications. Silicon Photonics leverages mature CMOS wafer fabrication and packaging infrastructures to deliver high bandwidth, low power transceivers.

Article Content

Feb 11, 2026

Breakthrough in Silicon Photonics Technology in Telecommunications ...

Silicon photonics has been an area of active research and development. Researchers have been working on enhancing the

Feb 07, 2026

Vodafone and Partners Shine Light on New Silicon Photonic Chips

The photonic chips would sit at the heart of Vodafone's mobile base stations, providing an ultra-low latency, highly

Dec 08, 2025

PIC100: ST's 1st silicon photonics technology offers performance ...

By launching a more efficient PIC and a next-generation B55X using silicon germanium and a 55 nm process node,

Aug 31, 2025

Multiband wireless systems based on microwave integrated photonics

Crucially, we demonstrate the direct drive of the wireless edge by data-centre silicon photonic transceivers, seamlessly

Apr 30, 2026

Beyond Silicon: Exploring new materials for Photonic Integrated ...

Nonetheless, IDTechEx noted that it offers the most well-rounded performance amongst PIC materials during its

Feb 15, 2026

The revolution of silicon photonics

For example, silicon photonics faces the challenge of high sensitivity to fabrication-process variations¹⁸, as the performance of

Nov 09, 2025

Roadmapping the next generation of silicon photonics

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

Oct 14, 2025

Progress in Passive Silicon Photonic Devices: A Review

Silicon photonics has emerged as a critical enabling technology for a diverse range of applications, from high-speed

Oct 29, 2025

Revolutionizing Connectivity: Silicon Photonics Technology in

Explore how silicon photonics technology is transforming telecom and networking with high-speed data transfer,

Jul 07, 2026

Silicon Photonics – Trends, Highlights and Challenges Overview

Silicon Photonics is an emerging technology that is bringing a paradigm shift in the field of single mode fiber-optic communications.

Mar 24, 2026

Silicon Photonics Platform for Next Generation Data Communication ...

TSMC has developed an advanced silicon photonics foundry platform tailored to meet the increasing demands of next-generation

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Silicon Photonics Devices and Integrated Circuits

The rapid evolution of integrated photonics has ushered in a transformative era for optical communication and

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Silicon photonics light the way toward large-scale applications in ...

In a significant leap forward for quantum technology, researchers have achieved a milestone in harnessing the

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Silicon photonics

Discover STMicroelectronics' advancements in silicon photonics technology, driving innovation in high-speed data communication

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ST unveils silicon photonics and next-gen BiCMOS technology

ST unveils new proprietary technologies for higher-performing optical interconnects in datacentres and AI clusters.

Mar 23, 2026

ST launches SiPho and next-gen BiCMOS technologies for higher ...

Its new silicon photonics and next-gen BiCMOS technologies are scheduled to ramp up from second-half 2025 for

Mar 30, 2026

Silicon photonics for high-speed communications and photonic signal ...

Leveraging on the mature processing infrastructure of silicon microelectronics, silicon photonic integrated circuits may

Jun 17, 2026

Vodafone and Partners Shine Light on New Silicon Photonic Chips

Vodafone's engineers at its R& D centre in Málaga, Spain, are exploring the potential for new silicon photonic chips to

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The emerging applications of silicon photonics

Silicon photonics (SiP) is a disruptive photonic platform offering unprecedented possibilities via advantages in photonic

Dec 11, 2025

Exploring New Materials for Photonic Integrated Circuits

IDTechEx's recent report on the topic, "Silicon Photonics and Photonic Integrated Circuits 2025-2035: Technologies,

Aug 31, 2025

Editorial: Recent developments in Si-based materials and ...

Due to its compatibility with existing CMOS processes, Silicon photonics is promising technologies for optoelectronic

May 01, 2026

Update: PIC100 or ST's 1st silicon photonics technology offers ...

The PIC100 is ST's first silicon photonics technology and one of the most efficient PICs on a 300 mm wafer, thus

Apr 30, 2026

Optical Beamforming Guides 5G Base Stations | Microwaves & RF

A hybrid antenna system combines optical and microwave technologies to provide broadband coverage at mmWave frequencies.

Aug 20, 2025

Roadmapping the next generation of silicon photonics

We chart the generational trends in silicon photonics technology, drawing parallels from the generational definitions of CMOS

Nov 20, 2025

Integrated silicon photonic MEMS | Microsystems & Nanoengineering

Microelectromechanical systems (MEMS) technology can enhance silicon photonics with building blocks that are

Aug 14, 2025

Emerging Modulator Technologies in Silicon Photonics

The evolution of high-speed optical modulators in silicon photonics is crucial for advancing optical communication networks amid

Apr 23, 2026

Silicon photonics

Silicon photonics is the study of the optical properties of the group-IV semiconductor and the design and fabrication of devices for

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The emerging applications of silicon photonics: Newton

Silicon photonics is breaking the physical limits of light-based information processing. By merging CMOS scalability

Feb 03, 2026

ST silicon photonics and BiCMOS technologies: the winning portfolio

This whitepaper describes STMicroelectronics' advancements in silicon photonics and BiCMOS technologies, essential for

Jul 04, 2026

Silicon Photonics

Silicon photonics is defined as an optical technology that integrates photonics and electronics to enhance high-speed

Aug 12, 2025

ST launches SiPho and next-gen BiCMOS technologies for higher ...

ST's SiPho technology combined with the ST BiCMOS technology comprise a unique 300mm silicon platform to serve

Oct 09, 2025

A New Era in Data Center Networking with NVIDIA Silicon Photonics

NVIDIA is breaking new ground by integrating silicon photonics directly with its NVIDIA Quantum and NVIDIA

Aug 22, 2025

The revolution of silicon photonics

The success of silicon photonics is a product of two decades of innovations. This photonic platform is enabling novel

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