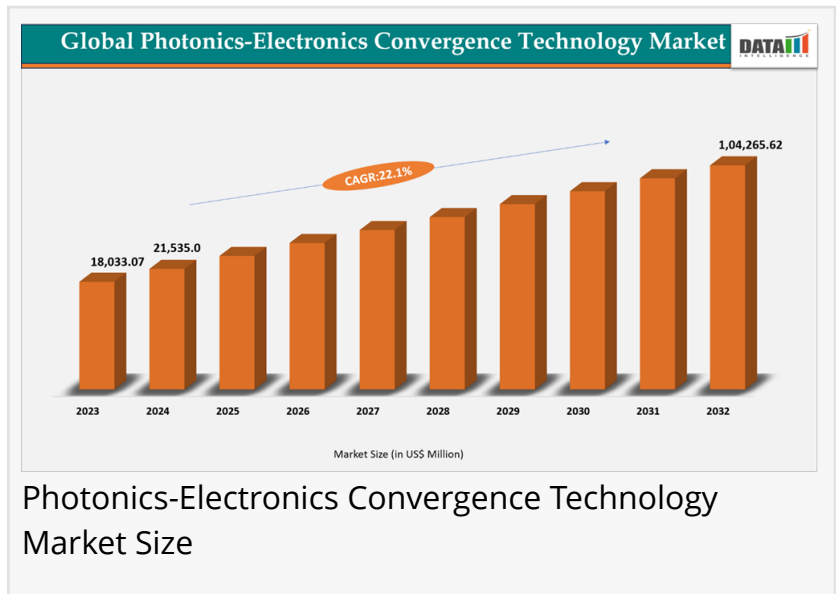


Future of Photonics-Electronics Convergence Technology Market to hit \$1,04,265.62M by 2032

Photonics-Electronics Convergence Technology Market Set for Explosive Growth in 2025

AUSTIN, TX, UNITED STATES, November 19, 2025 /EINPresswire.com/ -- Market Size and Growth

According to DataM Intelligence, the [photonics-electronics convergence technology market](#) was valued at US\$18,033.07 million in 2023, increased to US\$21,535.09 million in 2024, and is projected to surge to US\$1,04,265.62 million by 2032, reflecting a strong 22.1% CAGR between 2025 and 2032.



The integration of photonics with semiconductor electronics enables ultra-fast data transfer, low-latency AI computing, and energy-efficient chip architectures.



United States Photonics-Electronics Convergence Market 2024-2032 Forecast | Rapid Expansion to USD 1,04,265.62Mn Driven by High-Speed Tech Adoption"
DataM Intelligence 4Market Research LLP

This convergence is transforming AI servers, cloud data centers, telecommunications, IoT devices, and quantum computing systems.

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[market](#)

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50 – Tables
45 – Figures
180 – Pages

Key Highlights from This Report:

Asia-Pacific dominated the photonics-electronics convergence technology market in 2024, accounting for the largest revenue share at 48.26%.

In the component segment, Photonic Integrated Circuits (PICs) held the top position in 2024, contributing the highest revenue share of 22.13% to the global market.

Growth Drivers

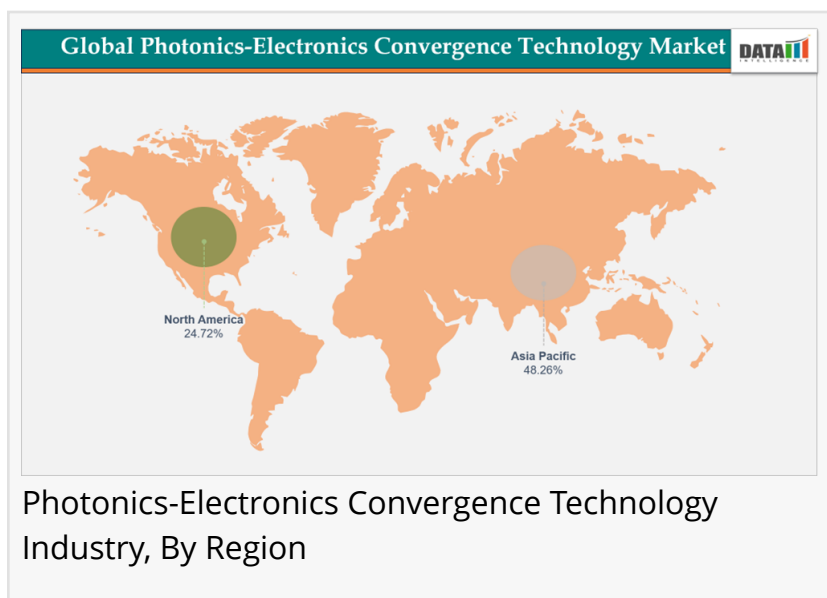
1. Global data traffic exceeded 400 zettabytes in 2024, driving demand for optical interconnects.
2. Investments of USD 12+ billion in silicon photonics fabs across the U.S., EU, Taiwan, and Japan.
3. Rising adoption of high-performance computing and edge AI accelerators.
4. Growing demand for power-efficient chips for autonomous vehicles and robotics.

Industry Growth Drivers

In 2025, the U.S. Department of Commerce committed over US\$1.4 billion to advanced packaging and optical interconnect initiatives. Agencies including NIST and NSF continue to classify photonics as a key enabling technology, supported by strong federal momentum reflected in US\$789 billion of national R&D spending in 2021.

In the private sector, investment surged as Lightmatter raised US\$400 million in 2024 to develop silicon-photonics interposers and chiplet-based AI processors, while Coherent Corp. expanded U.S. production of photonic materials and laser components. By early 2025, GlobalFoundries announced a US\$575 million photonics and chip-packaging facility in New York—signaling a shift from research to full-scale manufacturing.

Strategic acquisitions such as Astera Labs–aiXscale Photonics and Pasqal–AEPONYX in 2025 reflect a growing push to merge semiconductor design with photonic integration. Photonic



Integrated Circuits (PICs) are becoming essential for dense wavelength multiplexing, high-speed optical links, switching, and the future of AI and 6G networks.

The broader semiconductor sector is projected to hit US\$702.4 billion in 2025, driven by advances in logic, memory, and next-generation integrated circuits. Breakthroughs in nanoelectronics, quantum computing, and neuromorphic ICs are further boosting performance, energy efficiency, and AI processing capabilities.

Market Segmentation Analysis

By Technology

Silicon Photonics: 45% share, projected to reach USD 30B by 2032.

Optoelectronic Circuits: 28% share.

Photonic Integrated Circuits (PICs): fastest-growing at 32% CAGR.

By Application

Data Centers – 40%

Telecommunications – 25%

AI & ML Computing – 20%

Quantum & Sensing – 10%

Industrial & Others – 5%

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Regional Insights

United States

1. Valued at USD 3.1 billion (2024) □ USD 26.2 billion by 2032.
2. CHIPS Act driving photonics-electronics R&D.
3. Strong adoption in hyperscale cloud providers (AWS, Azure, Google).

Japan

1. Japan's market reached USD 820 million (2024) □ USD 5.8 billion by 2032.
2. High investment from NTT, Fujitsu, and Hitachi in optical computing.

3. Government support for quantum photonic technologies.

Key Players:

Intel Corporation || NVIDIA Corporation || STMicroelectronics || Cisco Systems || Marvell Technology || Ciena Corporation || Ayar Labs || IPG Photonics || NTT, and TDK Corporation

Highlights

1. Intel's silicon photonics revenue grew 34% YoY.
2. NVIDIA introduced optical AI interconnects for its Grace Hopper platforms.
3. Cisco invested USD 1.2B in optical routing systems.

Recent Developments

1. NVIDIA debuted 1.6 Tbps optical links for AI data centers (2025).
2. Intel launched a 4th-gen silicon photonics transceiver (Jan 2025).
3. NTT unveiled an optical neural network prototype (Dec 2024).

Market Outlook

By 2032:

Photonic integrated circuits to replace >40% of copper interconnects.

AI computing represents 35% of total demand.

Quantum photonics to become a USD 10B segment by 2035.

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Latest Investments

1. The photonics-electronics convergence market is attracting strong investor momentum in 2025, with funding flowing into high-performance photonic modules, AI-driven solutions, and energy-efficient technologies.
2. In October 2025, the Netherlands-based GX Group announced a ₹500 crore (US\$60.24 million)

investment in India to manufacture photonic modules for telecom and data centers, aiming to boost local production and reduce import dependence. Meanwhile, photonics startup PINC Technologies secured US\$6.8 million in seed funding to advance optical interconnects and next-gen computing innovations.

3. These investments highlight rising global interest in localized manufacturing, AI-enabled photonics, and sustainable, power-efficient technologies signaling strong confidence in the sector's long-term growth.

Conclusion

According to DataM Intelligence, photonics-electronics convergence is ushering in the next computing revolution, propelling the market toward USD 1,04,265.62 Million by 2032.

Related Reports:

[Digital Twin for Data Centers Market](#)

[Lab-on-a-Chip Market](#)

Sai Kiran

DataM Intelligence 4market Research LLP

+1 877-441-4866

sai.k@datamintelligence.com

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