

QuiX Quantum Introduces PACU, a Photonic Assembly Control Unit for Scalable Quantum Systems

Rack-mountable control unit standardizes control layer for QuiX Quantum's photonic systems, supporting the company's roadmap toward universal quantum computers

ENSCHEDI, NETHERLANDS, May 21, 2026 /EINPresswire.com/ -- [QuiX Quantum](#) today introduced PACU, its new Photonic Assembly Control Unit designed to provide a scalable, standardized control layer for the company's photonic quantum systems and future universal quantum computers.



The unit is designed to host photonic chips with up to 1,000 low-speed and up to 32 high-speed phase shifters, giving QuiX Quantum the control infrastructure needed to operate complex universal photonic architectures and integrate that capability into a compact, rack-mountable system.

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*Stefan Hengesbach, CEO of
QuiX Quantum*

A universal quantum computer is designed to run a broad set of quantum algorithms rather than being limited to a narrow class of tasks. For quantum hardware companies, universality is an important long-term goal because it points toward general-purpose quantum systems that can support a wider range of scientific, industrial and

commercial applications. QuiX Quantum has positioned photonics as the basis for its universal quantum computing roadmap, with systems designed for modularity, data-center compatibility, and integration into hybrid quantum-classical computing environments.

“As photonic quantum chips become more capable, the systems around them must scale as well,” said Stefan Hengesbach, CEO of QuiX Quantum. “PACU gives us a common control architecture across our photonic platform. It is designed to make our systems more modular, maintainable and ready for integration into larger quantum computing environments.”

PACU addresses scalable and reliable control, one of the central engineering requirements in photonic quantum computing. Larger photonic quantum chips require control systems that can manage more tunable elements, maintain precision, simplify calibration, reduce operational complexity, and integrate into real-world compute environments. QuiX Quantum's photonic systems are designed around integrated silicon nitride photonic chips and are intended to operate in data center and HPC settings, where footprint, serviceability and system stability are important deployment considerations.

The new unit features a 3U, 19-inch rack-mount design, Ethernet and USB connectivity, air cooling, E2000 optical connectors, individual tunable-element control, overheat protection, and condition feedback from the photonic assembly to the control unit. PACU supports photonic assemblies with up to 1,000 low-speed phase shifters and can update all phase shifters with a response time of below 2 milliseconds. It also includes 32 high-speed connectors that allow the unit to interface with external high-speed control systems, a capability relevant for future measurement-based photonic quantum computing architectures.

PACU improves reproducibility, maintenance, and replacement workflows. Photonic assemblies can be connected through board-to-board connectors rather than flat cables, creating a more resilient interface and supporting hot-swappable operation.

By combining rack-based integration, air cooling, monitoring, protection, and support for large photonic assemblies, PACU gives QuiX Quantum a repeatable control architecture for its current photonic chips and future universal quantum computing systems. The unit is intended to reduce operational complexity as systems scale, while supporting the modularity and serviceability required for deployment outside of laboratory environments.

About QuiX Quantum

QuiX Quantum is a European photonic quantum computing company founded in Enschede, the Netherlands, in 2019. The company develops integrated photonic quantum computing hardware and describes its approach as full-stack and fabless, with systems designed for modularity, scalability, and compatibility with data-center and HPC environments. QuiX Quantum has offices in the Netherlands and Germany and is developing universal photonic quantum computing systems based on its silicon nitride photonic technology.

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