Astera Labs Ramps Production of PCIe 6 Connectivity Portfolio Supercharging Advanced AI and Cloud Infrastructure Deployments

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New gearbox solution broadens the industry's most widely deployed PCIe offerings across multiple, diverse AI platforms with leading hyperscale and cloud customers

SANTA CLARA, Calif., May 01, 2025 (GLOBE NEWSWIRE) -- Astera Labs, Inc. (Nasdaq: ALAB), a global leader in semiconductor-based connectivity solutions for AI and cloud infrastructure, today announced its purpose-built PCIe® 6 connectivity portfolio is ramping production to fast-track deployments of modern AI platforms at scale. Now featuring gearbox connectivity solutions alongside fabric switches, retimers, and active cable modules, Astera Labs' expanding PCIe 6 portfolio provides a comprehensive connectivity platform to deliver unparalleled performance, utilization, and scalability for next-generation AI and general-compute systems. Along with Astera Labs' demonstrated PCIe 6 connectivity over optical media, the portfolio will provide even greater AI rack-scale distance optionality. The transition to PCIe 6 is fueled by the insatiable demand for higher compute, memory, networking, and storage data throughput, ensuring advanced AI accelerators and GPUs operate at peak efficiency.

Thad Omura, Chief Business Officer, said, "Our PCIe 6 solutions have successfully completed qualification with leading AI and cloud server customers, and we are ramping up to volume production in parallel with their next generation AI platform rollouts. By continuing to expand our industry-leading PCIe connectivity portfolio with additional innovative solutions that includes Scorpio Fabric Switches, Aries Retimers, Gearboxes, Smart Cable Modules, and PCIe over optics technology, we are providing our hyperscaler and data center partners all the necessary tools to accelerate the development and deployment of leading-edge AI platforms."

Patrick Moorhead, Founder, Chief Executive Officer, and Chief Analyst, Moor Insights & Strategy, said, "Hyperscalers are set to begin PCIe 6-based AI platform deployments this year to meet the explosive bandwidth and low latency demands of emerging AI workloads. Astera Labs is well positioned as an enabler of this industry shift to faster data speeds. Its extensive portfolio of PCIe 6 connectivity solutions and COSMOS software suite can accelerate infrastructure readiness for next-generation AI and cloud-scale deployments."

Industry-Leading PCIe 6 Connectivity Portfolio

PCIe 6 technology is critical to provide the high bandwidth, low latency interconnects needed to keep the latest GPUs fully utilized for maximum scaling of AI workloads. Astera Labs' comprehensive PCIe 6 portfolio of purpose-built silicon, modules, and boards is ramping to production across multiple, diverse AI platforms that are ready to deploy in real systems with leading hyperscale customers.

- **NEW Aries 6 PCIe Smart Gearbox** – the industry's first purpose-built PCIe gearbox solution that intelligently bridges the performance gap between the latest PCIe 6 devices and existing PCIe 5 ecosystem. Aries 6 Gearbox solves the challenge of degraded-performance in mixed-generation systems, ensuring full utilization of high-speed lanes and accelerating the deployment of next-generation AI platforms while optimizing rack-scale TCO.
- **Scorpio P-Series Smart Fabric Switches** – the industry's first PCIe 6 fabric switches architected for mixed traffic AI head node connectivity deliver predictable, high-performance data flows between GPUs, CPUs, NICs, and SSDs. Scorpio P-Series enables high-bandwidth, low-latency peer-to-peer GPU data ingest while ensuring seamless interoperability across a diverse ecosystem of PCIe hosts and endpoints.
- **Aries 6 PCIe/CXL Smart DSP Retimers** – as the gold standard for PCIe retimers, these devices solve high-speed PCIe 6.x/CXL® 3.x signal integrity challenges in AI and general-compute servers with reliable 3x reach extension. Aries 6 Retimers deliver high-performance, low power connectivity while providing a smart connectivity backbone that is reliable, interoperable, and scalable for diverse hyperscale deployments.
- **Aries 6 PCIe/CXL Smart Cable Modules (Aries 6 SCMs)** – extend PCIe 6.x/CXL 3.x signal reach up to 7 meters for GPU clustering across dense AI racks over copper-based Active Electrical Cables (AECs). Built on the proven track record of widely deployed and field-tested Aries Retimers, Aries 6 SCMs support multiple form factors and configurations to accommodate diverse AI system topologies.
- **PCIe 6 over Optics Technology** – enables PCIe 6 optical connectivity for GPU and AI accelerator scale-up clustering across longer distances to enhancing rack-scale data center flexibility. Astera Labs' optical DSP technology easily integrates into AOC modules and optical transceivers, supporting future optical connectivity standards through software-defined configurability.

The expanded PCIe 6 portfolio integrates with the COnnectivity System Management and Optimization Software (COSMOS) suite

to deliver a smart, customizable connectivity backbone with unprecedented data center observability, enhanced security, and extensive fleet management capabilities. COSMOS enables unmatched insights into the state and health of accelerated computing platforms to ensure maximum uptime and availability.

Astera Labs' PCIe-based solutions are rigorously tested in the company's Cloud-Scale Interop Lab and in customer platforms with leading PCIe hosts and endpoints across multiple PCIe generations and topologies. This essential interoperability and performance testing enables customers to design with confidence, minimize interoperation risk, and reduce overall development time and costs.

Industry Support

Raghu Nambiar, Corporate VP, Data Center Ecosystems and Solutions, AMD said, "As AI and data-intensive workloads continue to drive demand for ever-faster infrastructure, PCIe 6 becomes a critical technology to unlock the full performance of next-generation data centers. High-speed, low-latency connectivity is essential to harnessing the capabilities of AMD EPYC™ processors and Instinct™ accelerators at scale. Astera Labs' deep expertise and robust PCIe 6 portfolio make them a valued technology partner in enabling seamless interoperability and performance across heterogeneous compute environments."

Vincent Lin, Business Group President, Inventec Enterprise Business Group, said, "The exponential growth of AI and data-centric workloads is driving demand for server platforms with ultra-high bandwidth and low-latency interconnects. PCIe 6 is instrumental in delivering the performance our customers require, and strong ecosystem collaboration is essential to keep up with market demands. Astera Labs is a trusted partner whose PCIe expertise and innovative connectivity solutions accelerate development of Inventec's next-generation platforms optimized for AI infrastructure."

Dr. Joachim Peerlings, Vice President of Network and Data Center Solutions at Keysight Technologies, said, "Astera Labs is ramping PCIe 6 to production, and Keysight is proud to support its momentum with advanced testing solutions that ensure the highest standards for performance and compliance. Our collaboration with Astera Labs supports the rapid deployment of its PCIe 6 solutions that are critical to advancing AI and cloud infrastructure."

Jeremy Werner, senior vice president and general manager, for the Core Data Center Business Unit, at Micron Technology, stated, "Inference has arrived and the next wave of AI infrastructure must pivot to address the deployment of AI agents and assistants. Inference generates more IOPS than any enterprise workload ever encountered. Micron and Astera Labs are leading the industry in delivering these IOPS through the early enablement of PCIe Gen6 high-performance SSDs. Micron's commitment to technology innovation and broad ecosystem support has now resulted in verified interoperability with Astera Labs."

Mike Yang, EVP of Quanta Computer Inc./ President of QCT, said, "At Quanta, we focus on building high-performance servers to power AI and ML workloads at scale. PCIe 6 is a key enabler of the bandwidth and latency improvements needed across data center deployments. Astera Labs' proven PCIe connectivity portfolio and engineering expertise help ensure that our platforms deliver the highest performance and interoperability demanded by cloud customers."

Leno Park, Vice President of Nand Product Planning, Samsung Electronics, said, "Samsung is pushing the boundaries of storage performance to meet the needs of large-scale AI and ML deployments. PCIe 6 is critical in unlocking the full potential of our next-generation SSDs, and seamless, high-speed connectivity is essential to delivering predictable performance our customers demand. Astera Labs plays a key role in the ecosystem with their deep PCIe expertise and robust connectivity solutions that help ensure end-to-end interoperability and performance at scale."

Joe Mendolia, Vice President of Marketing, Protocol Solutions Group, Teledyne LeCroy, said, "As a leader in PCI Express 6.x protocol and physical layer testing, Teledyne LeCroy is proud to support ecosystem partners like Astera Labs which is driving PCIe 6 into production. Our innovative analysis tools are designed to help accelerate time to market and ensure robust performance for next-generation interconnect technologies. Collaborations like this are key to enabling the future of AI infrastructure and other advanced applications."

Robert Lin, President, Enterprise & Networking Business Group, Wistron, said, "High-speed, reliable PCIe connectivity is a cornerstone of Wistron's server platforms designed for AI and data-intensive computing. Astera Labs brings crucial domain expertise and a comprehensive portfolio that enhances interoperability and simplifies integration of advanced connectivity capabilities. Together, we're helping customers deploy powerful, scalable next generation infrastructure to meet the growing demands of AI workloads."

Steven SC Hsieh, Vice President, Wiwynn, said, "As AI workloads push data center infrastructure to its limits, PCIe Gen6 becomes essential to maintain throughput and utilization at scale. Wiwynn's advanced server and storage platforms benefit from high-performance, interoperable connectivity, and Astera Labs is a close partner in helping us meet these demands. Their deep knowledge of PCIe and end-to-end connectivity portfolio enables us to accelerate deployment of next-gen AI solutions."

Resources

- Webpage: Aries 6 Smart Gearbox
- Video: Aries 6 Smart Gearbox Demo
- Video: PCIe over Optics Technology Demo

About Astera Labs

Astera Labs is a global leader in purpose-built connectivity solutions that unlock the full potential of AI and cloud infrastructure. Our Intelligent Connectivity Platform integrates PCIe®, CXL®, and Ethernet semiconductor-based solutions and the COSMOS software suite of system management and optimization tools to deliver a software-defined architecture that is both scalable and customizable. Inspired by trusted relationships with hyperscalers and the data center ecosystem, we are an innovation leader delivering products that are flexible and interoperable. Discover how we are transforming modern data-driven applications at www.asteralabs.com.

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