

Oriole to Deploy World's First AI System with Pure Photonic Network to Supercharge Data Centers

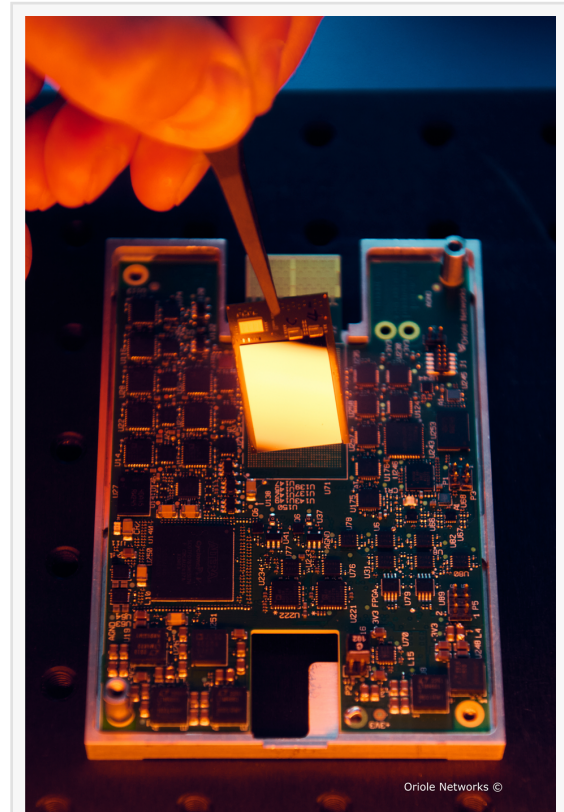
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[/EINPresswire.com/](https://www.einpresswire.com/) -- Oriole Networks today announced continued progress in its collaboration with AMD, in support of the UK's Advanced Research & Invention Agency (ARIA) Scaling Inference Lab. The work brings together Oriole's photonic networking system and AMD Instinct™ GPUs and AMD EPYC™ CPUs to demonstrate how next-generation network fabrics address the growing performance, latency, and energy constraints of AI infrastructure. In the collaboration, which has been underway for more than a year, Oriole is set to deploy the world's first pure photonic AI network at scale, built to supercharge AI performance at the system level by providing the lowest possible latency.

"AMD is excited to collaborate with Oriole on the ARIA Scaling Inference Lab cluster," said Madhu Rangarajan, corporate vice president, Compute and Enterprise AI business, AMD. "Oriole's AI backend networking with nanosecond optical circuit switching represents a fundamentally different way to connect accelerators at scale. We are helping to validate how photonic fabrics can work alongside AMD compute to deliver the low-latency, high-bandwidth connectivity that AI Inference workloads demand."

James Regan, CEO of Oriole, said: "A year ago, we were proving the physics; today, we're proving the business. Our collaboration with AMD has moved from concept to deployment to a system an order of magnitude larger, and the data proves this is already driving performance increases at pace. This is what it looks like when photonic networking stops being a research curiosity and starts being the foundation of how serious AI infrastructure gets built."

Created by an Act of Parliament from the UK government, and sponsored by the Department for



Oriole will deploy the world's first large-scale AI system powered by a pure photonic network, and AMD Instinct GPUs and AMD EPYC CPUs, as part of the UK ARIA Scaling Inference Lab

Science, Innovation, and Technology, ARIA funds breakthrough R&D to catalyze new paths to prosperity for the UK and the world. The Scaling Inference Lab is a testbed backed by £50m (\$68m), set up to address a key bottleneck of AI workloads.

UK Secretary of State for Business and Trade Peter Kyle said, "This is a powerful example of how Government is backing the UK's most innovative firms, to scale at speed and bring world-leading technology to market. By boosting AI performance and efficiency, this system will act as a catalyst, helping to attract new investment, support skilled job growth, and improve the ability of UK scale-ups to compete and win globally."

Within this context, Oriole is contributing its PRISM photonic networking solution, which replaces electronic switches in the network core with nanosecond-scale optical circuit switching. AMD is supporting the program by providing CPU and GPU hardware, and technical collaboration to develop and run large-scale network models relevant to frontier-scale AI systems.

It also marks the first commercial deployment of Oriole's technology, which has gone from R&D to production in just three years. Oriole's xPU-agnostic designs are now locked and set for wider rollout across the industry in 2027 to meet growing demand from multiple accelerator platforms.

Reimagining AI networks

At the core of the network is Oriole's technology, PRISM: the world's first AI networking platform that routes data as photons rather than electrical signals. For decades, data center networks have run on electrical switches that are inefficient, power-hungry, and generate enormous heat. Coupled with the rise of AI, with its need for thousands of chips exchanging data trillions of times per second, data center networks have been pushed to the breaking point.

PRISM removes the need for electronic switches entirely, replacing them with nano-second-switched optical circuits, which cuts core power consumption by 81%. With photons able to travel directly from chip to chip, GPU idle time drops from 60% today to less than 1%. With less hardware in the loop, PRISM can also reduce dependency on the complex supply chain that underpin today's networking hardware and can minimize the need for cooling, thus slashing water usage. As the work with AMD shows, this leads to supercharged AI output with more tokens per second and more users served simultaneously from the same hardware.

Agnostic by design

Crucially, PRISM is not built for any single chip vendor; it works across any accelerator platform, giving the wider industry a path to frontier-scale system-wide performance without the need for proprietary stacks.

"Meeting the demands for modern AI requires rapidly identifying ways to improve the performance and cost-efficiency of large-scale AI clusters. ARIA is thrilled to collaborate with

Oriole and AMD to demonstrate the benefits of this new technology and it's exactly the type of collaboration, between innovative startups and industry leaders, that the Scaling Inference Lab was designed to foster," said Suraj Bramhavar, Program Director at ARIA

- ENDS -

About Oriole Networks

AI Networking, Reimagined. Oriole Networks is a photonic networking company, developing disruptive technologies for AI/ML and HPC networking that will revolutionize data centers. These technologies address AI's biggest challenges – speed, latency, and sustainability.

Our holistic approach replaces energy-hungry electrical switching with photonic switching. By using only light to move data in the network, our solution will increase the efficiency of LLM training and inference to unprecedented levels while dramatically reducing the energy consumption of data centers, currently putting a huge strain on energy grids. We can offer faster, more efficient, and more sustainable AI without sacrificing the planet.

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