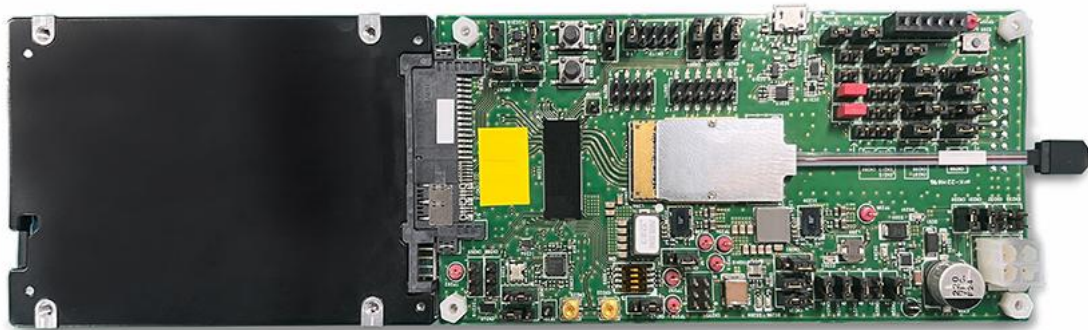


Press Release

KIOXIA, AIO Core and Kyocera Announce Development of PCIe 5.0-Compatible Broadband Optical SSD for Next-Generation Green Data Centers



Germany, Düsseldorf, 9 April 2025 - KIOXIA Corporation, AIO Core Co., Ltd. and Kyocera Corporation today announced the development of a prototype PCIe 5.0-compatible broadband SSD with an optical interface (broadband optical SSD). The three companies will develop technologies for broadband optical SSDs to enhance their suitability for advanced applications that require high-speed transfer of large data, such as generative AI, and will also apply them to proof-of-concept (PoC) tests for future social implementation.

The new prototype achieved functional operation with the high-speed PCIe 5.0 interface, which is twice the bandwidth of the previous PCIe 4.0 generation^[1], through the combination of AIO Core's IOCore optical transceiver and Kyocera's OPTINITY optoelectronic integration module technologies.

In next-generation green data centres, replacing the electrical wiring interface with optical and utilising broadband optical SSD technology can significantly increase the physical distance between the compute and storage devices, while maintaining energy efficiency and high signal quality. It also contributes to the flexibility and efficiency of data centre system design, where digital diversification and the evolution of generative AI require complex, high-volume, high-speed data processing.

This achievement is the result of the Japanese “Next Generation Green Data Center Technology Development” project JPNP21029. It is subsidised by the New Energy and Industrial Technology Development Organization (NEDO), which is under the “Green Innovation Fund Project: Construction of Next Generation Digital Infrastructure.” In this project, companies will develop next-generation technologies with the goal of achieving more than 40% energy savings compared to current data centres. As part of this project, KIOXIA is developing broadband optical SSDs, AIO Core is developing optoelectronic fusion devices and Kyocera is developing optoelectronic device packages.

Axel Stoermann, Chief Technology Officer & Vice President at KIOXIA Europe, commented: “As we enter a new era where AI and high-performance data centres form the foundation of societal advancement, it's essential to address the challenge of power management to ensure our strides in technology align with global sustainability goals.” He continued “This new prototype of a PCIe 5.0-compatible broadband SSD with an optical interface has the real potential to revolutionise data centres and to make them truly sustainable.”

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Notes

[1] Compared to KIOXIA’s broadband optical SSD announced on August 7, 2024.

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*Information in this document, including product prices and specifications, content of services and contact information, is correct on the date of the announcement but is subject to change without prior notice.

About KIOXIA Corporation

KIOXIA is a world leader in memory solutions, dedicated to the development, production and sale of flash memory and solid-state drives (SSDs). In April 2017, its predecessor Toshiba Memory was spun off from Toshiba Corporation, the company that invented NAND flash memory in 1987. KIOXIA is committed to uplifting the world with “memory” by offering products, services and systems that create choice for customers and memory-based value for society. KIOXIA 's innovative 3D flash memory technology, BiCS FLASH™, is shaping the future of storage in high-density applications, including advanced smartphones, PCs, automotive systems, data centers and generative AI systems.

Visit our [KIOXIA website](#)

About AIO Core Co., Ltd.

AIO Core Co., Ltd. (<https://www.aiocore.com/>) was established in 2017 as a spin-off from the Photonics Electronics Technology Research Association (PETRA), a technical research association supervised by Japan’s Ministry of Economy, Trade and Industry (METI).

AIO Core is a startup company that develops, manufactures, and markets high-speed optical

transceivers under the brand name “IOCore”, utilizing silicon photonics and quantum dot laser technologies.

The “IOCore” modules enable compact, low-power, and high-temperature-tolerant optical signal transmission through optical-electrical conversion, offering high reliability in demanding environments such as medical devices, automotive systems, semiconductor manufacturing equipment, and aerospace applications.

About Kyocera Corporation

Kyocera Corporation (TOKYO:6971, <https://global.kyocera.com/>), the parent and global headquarters of the Kyocera Group, was founded in 1959 as a producer of fine ceramics (also known as “advanced ceramics”). By combining these engineered materials with metals and integrating them with other technologies, Kyocera has become a leading supplier of industrial and automotive components, semiconductor packages, electronic devices, smart energy systems, printers, copiers, and mobile phones. During the year ended March 31, 2024, the company’s consolidated sales revenue totaled 2 trillion yen (approx. US\$13.3 billion). Kyocera is ranked #874 on Forbes magazine’s 2024 “Global 2000” list of the world’s largest publicly traded companies, and has been named among “The World’s 100 Most Sustainably Managed Companies” by The Wall Street Journal.

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