

Press Release

KIOXIA Broadens 8th Generation BiCS FLASH SSD Portfolio with High-Performance Data Center NVMe SSDs to Maximize GPU Utilization in AI and HPC Workloads

KIOXIA CD9P Series PCIe 5.0 SSDs Feature Advanced CBA Architecture and TLC Flash, Delivering Breakthrough Performance, Efficiency and Capacity



Germany, Düsseldorf, 20 June 2025 – KIOXIA Europe GmbH, a world leader in memory solutions, today announced the prototype development and demonstration of a prototype of its new KIOXIA CD9P Series PCIe 5.0 NVMe SSDs. These are the latest next-generation SSDs built with KIOXIA's 8th generation BiCS FLASH™ TLC-based 3D flash memory. BiCS FLASH features CBA (CMOS directly Bonded to Array) technology, a breakthrough architecture that significantly boosts power efficiency, performance, and storage density^[1], while doubling the capacity available per SSD compared with the previous generation model^[2].

As GPU-accelerated AI servers drive up the demands on storage infrastructure, maintaining high throughput, low latency, and consistent performance is critical - including keeping valuable GPUs highly utilized.

The KIOXIA CD9P Series is purpose-built for these next-generation environments, delivering the speed and responsiveness required by AI, machine learning and high-performance computing workloads to ensure GPUs stay fed with data and operating at maximum efficiency.

The CD9P Series leverages KIOXIA's most advanced 3D flash memory to date, featuring a CBA-based architecture that reduces heat generation, enhances thermal management, and delivers greater overall value through improved performance and power metrics and total cost of ownership.

KIOXIA CD9P Series drives deliver 4-corner performance improvements of up to approximately 125% in random write, 30% in random read, 20% sequential read, and 25% in sequential write speeds compared to the previous generation^[2].

Furthermore, performance per watt of power consumption has improved by approximately 60% in sequential read, 45% in sequential write, 55% in random read, and 100% (2x) in random write^[2]. (Applies to the 15.36 terabyte (TB) model)

KIOXIA CD9P Series SSD highlights include (preliminary and subject to change):

- PCIe 5.0, NVMe 2.0, NVMe-MI 1.2c compliant
- Open Compute Project Datacenter NVMe[™] SSD specification v2.5 support (Not all requirements)
- Form factors: 2.5-inch 15 mm thickness, EDSFF E3.S
- Read-intensive (1 DWPD) and mixed-use (3 DWPD) endurances
- Sequential performance (128 KiB/QD32) 14.8 GB/s Read and 7 GB/s Write
- Random performance (4KiB) 2,600 KIOPS (QD512) Read and 750 KIOPS (QD32) Write
- 2.5-inch capacities up to 61.44 TB and E3.S capacities up to 30.72 TB
- CNSA 2.0 algorithm support ^[3]
 (Prepared for the threat posed by quantum computers)

"Achieving power efficiency, whilst addressing the increasing demand for all data processing challenges for AI, machine learning or high-performance computing, is possibly the most pressing issue today and in future," says Axel Stoermann, Vice President and Chief Technology Officer for Embedded Memory and SSD, KIOXIA Europe

GmbH. "At KIOXIA, we are already addressing this need by offering the CD9P Series, a leading power efficiency, high-performance solution delivering speed and responsiveness for high workloads and optimum operation."

KIOXIA CD9P Series SSDs are now sampling to select customers and will be showcased at HPE Discover 2025, taking place June 23–26 in Las Vegas.

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Notes

[1] Compared to the 6th generation BiCS FLASH

[2] Compared to the KIOXIA CD8P Series

[3] The KIOXIA CD9P Series supports Leighton-Micali Signature (LMS) algorithm acknowledged by CNSA 2.0^[4] as a digital signature algorithm to prevent firmware tampering in preparation for threats to conventional cryptographic algorithms posed by quantum computers. Advanced Encryption Standard (AES-256) with a key length of 256 bits, which is the data encryption algorithm used in CD9P, is also acknowledged by CNSA 2.0.

[4] CNSA2.0: Commercial National Security Algorithm Suite 2.0

*2.5-inch indicates the form factor of the SSD and not its physical size.

*Read and write speed may vary depending on various factors such as host devices, software (drivers, OS etc.) and read/write conditions.

*Performance is preliminary and subject to change without notice.

*Definition of capacity: KIOXIA Corporation defines a kilobyte (KB) as 1,000 bytes, a megabyte (MB) as 1,000,000 bytes, a gigabyte (GB) as 1,000,000,000 bytes, a terabyte (TB) as 1,000,000,000,000 bytes, and a kibibyte (KiB) is 1,024 bytes. A computer operating system, however, reports storage capacity using powers of 2 for the definition of 1GB = 2^30 bytes = 1,073,741,824 bytes and 1TB = 2^40 bytes = 1,099,511,627,776 bytes and therefore shows less storage capacity. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system, and/or pre-installed software applications, or media content. Actual formatted capacity may vary. *A kibibyte (KiB) means 2^10, or 1,024 bytes.

*IOPS: Input Output Per Second (or the number of I/O operations per second)

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About KIOXIA

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.

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