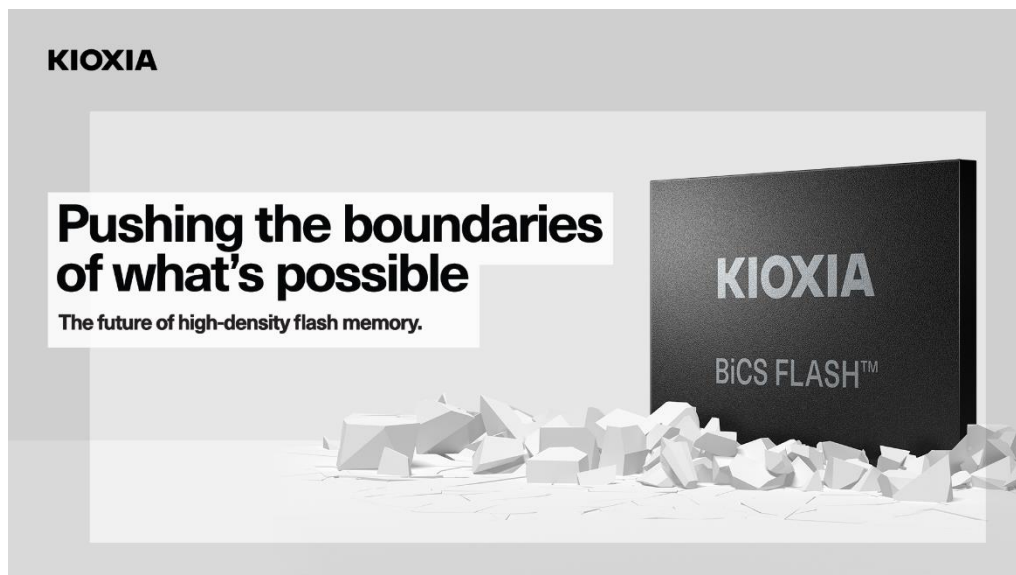


Press Release

KIOXIA Introduces Industry's Highest Capacity 2Tb QLC Flash Memory with the Latest BiCS FLASH™ Technology

Achieved through Groundbreaking Architectural Innovations
in Scaling and Wafer Bonding Technology



Düsseldorf, Germany, 3rd July 2024 – [KIOXIA Europe GmbH](#), a world leader in memory solutions, today announced that it started sample shipments^[1] of 2Tb (tera bit) Quad-Level-Cell (QLC) memory devices with its eighth-generation BiCS FLASH™ 3D flash memory technology. This 2Tb QLC device has the highest capacity in the industry^[2], elevating storage devices to a new capacity point that will drive growth in multiple application segments including AI.

With its latest BiCS FLASH™ technology, KIOXIA has achieved both vertical and lateral scaling of memory die through proprietary processes and innovative architectures. In addition, the company has implemented the groundbreaking CBA (CMOS directly Bonded to Array)^[3] technology, which enables the creation of higher density devices and an industry-leading interface speed of 3.6Gbps^[4]. Together, these advanced technologies are applied in the creation of 2Tb QLC, resulting in the industry's highest capacity memory device.

KIOXIA

The 2Tb QLC is equipped with a bit density approx. 2.3 times higher and a write power efficiency approx. 70 percent higher than KIOXIA's current fifth-generation QLC device which is the highest capacity in KIOXIA's products. With a 16-die stacked architecture in a single memory package, the latest QLC device achieves industry-leading 4TB (tera byte) of capacity. It is available with a smaller package size of 11.5 x 13.5mm and a package height of 1.5mm.

Charles Giancarlo, Chief Executive Officer, Pure Storage, Inc., the IT pioneer that delivers the world's most advanced data storage technology and services, highlighted the significance of KIOXIA's latest development for the company's platform: "We have a long-standing relationship with KIOXIA and are delighted to incorporate their eighth-generation BiCS FLASH™ 2Tb QLC flash memory products to enhance the performance and efficiency of our all-flash storage solutions. Pure's unified all-flash data storage platform is able to meet the demanding needs of artificial intelligence as well as the aggressive costs of backup storage. Backed by KIOXIA technology, Pure Storage will continue to offer unmatched performance, power efficiency, and reliability, delivering exceptional value to our customers."

"We are pleased to be shipping samples of our new 2Tb QLC with the new eighth-generation BiCS FLASH™ technology," said Hideshi Miyajima, Chief Technology Officer of KIOXIA. "With its industry-leading high bit density, high speed data transfer, and superior power efficiency, the 2Tb QLC product will offer new value for rapidly emerging AI applications and large storage applications demanding power and space savings."

In addition to the 2Tb QLC, KIOXIA also added a 1Tb QLC memory devices to its portfolio. In comparison with the capacity-optimized 2Tb QLC, the performance-optimized 1Tb QLC offers approx. a 30 percent faster sequential write performance and approx. a 15 percent improvement in read latency. The 1Tb QLC will be deployed in high performance applications, including client SSD and mobile.

KIOXIA will continue to develop industry-leading memory products in anticipation of growing demand for data storage solutions.

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Notes

1: These samples are for the functional check purpose and the specifications of these samples may differ from those in mass production.

2: As of July 3, 2024. KIOXIA survey.



3: CBA (CMOS directly Bonded to Array) technology, wherein each CMOS wafer and cell array wafer are manufactured separately in its optimized condition and then bonded together.

4: 1Gbps is calculated as 1,000,000,000bits/second. This value is obtained under specific KIOXIA's test environment, and may vary depending on the user's conditions.

* In every mention of a KIOXIA product: Product density is identified based on the density of memory chip(s) within the Product, not the amount of memory capacity available for data storage by the end user. Consumer-usable capacity will be less due to overhead data areas, formatting, bad blocks, and other constraints, and may also vary based on the host device and application. For details, please refer to applicable product specifications. The definition of 1KB = 2^{10} bytes = 1,024 bytes. The definition of 1Gb = 2^{30} bits = 1,073,741,824 bits. The definition of 1GB = 2^{30} bytes = 1,073,741,824 bytes. 1Tb = 2^{40} bits = 1,099,511,627,776 bits.

* Read and write speeds are the best values obtained in a specific test environment at KIOXIA and KIOXIA warrants neither read nor write speeds in individual devices. Read and write speed may vary depending on device used and file size read or written.

* Company names, product names and service names may be trademarks of third-party companies.

About KIOXIA Europe GmbH

KIOXIA Europe GmbH (formerly Toshiba Memory Europe GmbH) is the European-based subsidiary of KIOXIA Corporation, a leading worldwide supplier of flash memory and solid-state drives (SSDs). From the invention of NAND flash memory to today's breakthrough BiCS FLASH™, KIOXIA continues to pioneer innovative memory solutions and services that enrich people's lives and expand society's horizons. The company's innovative BiCS FLASH™ 3D flash memory technology is shaping the future of storage in high-density applications, including advanced smartphones, PCs, SSDs, automotive and data centers.

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