



## Enterprise Storage & Technology Newsletter

January 2023

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**THE NEED FOR  
SPEED: NVME &  
ADVANCED SSDS**



February 7 at 10:00am PST

## The Encore to 35 Years of Flash Memory? Keep Innovating.

# KIOXIA

*Posted by Karen Heumann, January 10, 2023*

Last year, [KIOXIA](#) celebrated the [35th anniversary of their invention of flash memory](#), and its impact on the world thereafter. So where does KIOXIA go as an encore? The entire team will tell you, with enthusiasm - they keep moving forward, looking for more ways to innovate and meet the challenges facing consumers and businesses. They are ["Ready for Next."](#) And Kioxia showcased this philosophy (and the products that resulted from it) at #CES2023 this month. Some of the products included:

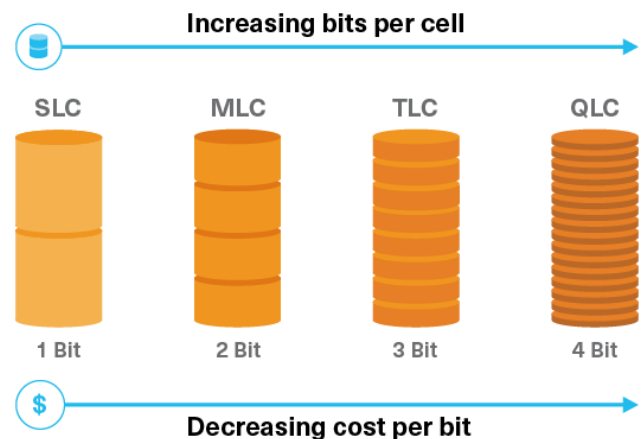
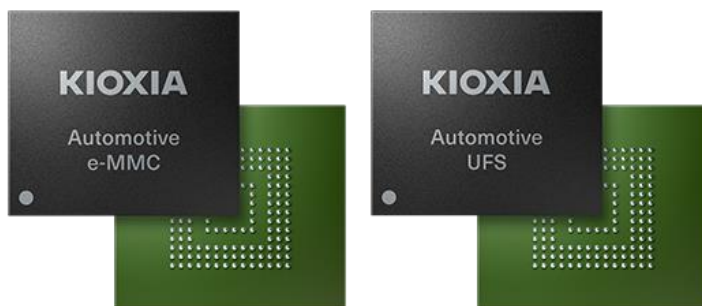
- Scalable BiCS FLASH™ 3D flash memory technology solutions – including XL-FLASH™ and 4-bit per cell quad-level-cell (QLC) technology
- Flash memory solutions for automotive, consumer and industrial applications – including SLC NAND, UFS 4.0 and [XFMEXPRESS™](#)
- [KIOXIA SSDs](#) - representing the latest standards, technologies, and form factors
- [KIOXIA client SSDs](#) – including XG8 and BG5 Series NVMe™ SSDs

[KIOXIA's BiCS FLASH™](#) is a three-dimensional (3D) vertical flash memory cell structure, significantly increasing flash density and capacity vs 2D (planar) flash memory. KIOXIA's TLC 3-bit-per-cell 1Tb (128GB) BiCS FLASH™, an industry first, enhances the reliability of write/erase endurance while boosting write speeds. The company also offers a 1.33Tb BiCS FLASH™ device that features 4-bit-per-cell, quadruple-level-cell (QLC), technology. It's the first 3D flash memory device to do so.

[Key Features](#) of KIOXIA BiCS FLASH™ 3D Flash Memory Technology include higher storage density per die than conventional Flash Memory, higher read/write speed performance, higher reliability, and lower power consumption. KIOXIA's fifth generation BiCS FLASH™ offers 512 gigabit (Gb) 3-bit-per-cell, triple-level cell (TLC) and higher density QLC technology enables larger die capacity. KIOXIA achieved the industry's largest capacity per die of 1.33 terabit (Tb), and a 16-die stacked architecture can realize an unparalleled capacity of 2.66 terabyte (TB) in a single package.



“Whether it’s the next connected vehicle, the next personal mobility device or the next smart city – we keep advancing flash memory to make the next thing possible,” said [Alex Mei](#), Vice President of Corporate Marketing for KIOXIA America, Inc. “Countless consumer devices and applications require flash memory and SSDs, and we are committed to continued innovation.”



## GIGABYTE Brings the Cool Factor to CES2023

# GIGABYTE™

*Posted by Karen Heumann, January 10, 2023*

[GIGABYTE](#) definitely brought the Cool Factor to #CES2023 and presented the Power of Computing to Reshape the World with emphasis on energy efficiency:

- [Data Center Servers](#)
- [Advanced Cooling Solutions](#): Computing performance with environmental sustainability
- [Mobile Computing Platforms](#): Zonal computing to enable a safer and greener transportation.
- [PCs and Laptops](#)





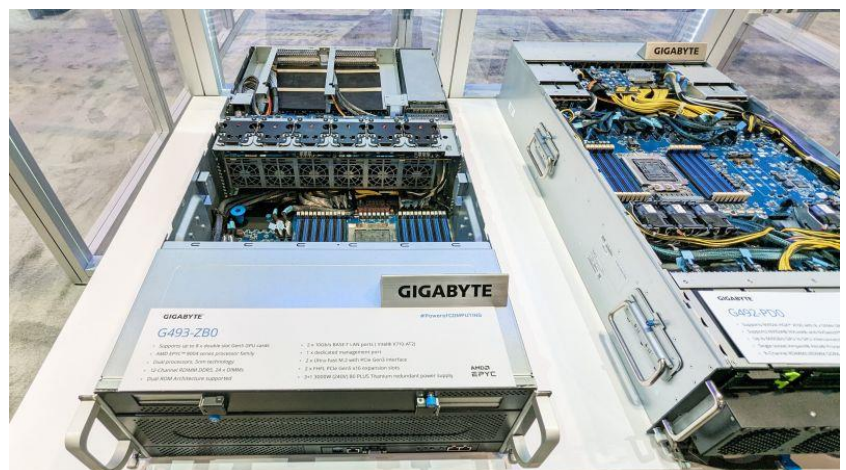
GIGABYTE's Air, Liquid, and [Immersion Cooling](#) Solutions are designed to increase heat dissipation efficiency, enabling servers to deliver exceptional high performance while lowering carbon emissions. GIGABYTE debuted TO15-Z40, an OCP server compatible with all major [immersion tanks](#), demonstrating the ability to balance technological needs with environmental sustainability. Its thermal dissipation design is crucial to ensure data operation stability. These GPU servers and rack servers support the latest AMD and ARM processors, support high-density parallel computing, and accelerate workloads of any scale.

GIGABYTE also showcased their enterprise-grade workstation that works with [MyelinTek](#)'s ready-to-go MLOps AI development environment. The MLOps's easy-to-use interface enables engineers to quickly train AI models and the workstation's outstanding performance allows a painless implementation. GIGABYTE launched three servers supporting [AMD EPYC™ 9004 series processors](#) today, including G-series G493-ZB0, R-series R283-Z96 and R183-Z95. All three servers support dual-socket AMD EPYC™ 9004 series processors, 24 sets of DDR5 memory, PCIe Gen5 speed of transmission and dual ROM architecture to prevent interruption.

GIGABYTE provides the automotive industry with high-performance Zonal Integrated DCUs and decision-making control hosts built on their extensive experience in developing [ADCU](#) (Autonomous Driving Control Unit) and ADAS DCU (Domain Control Unit), and featuring a centralized architecture that can be integrated into various design concepts, lowering vehicle production costs. GIGABYTE enables car makers to build smarter and safer vehicles at lower cost. In addition, we teamed up with partners to exhibit complete series of autonomous tech solutions, including millimeter-wave radars, tire pressure monitoring systems, battery modules, etc.

Other innovations include:

- [G493-ZB0](#): 4U system which supports up to 8 dual-slot Gen5 GPU
- [R283-Z96](#): Total 28 sets of storage drive bays (24 sets of 2.5-inch Gen5 NVMe/4 sets of 2.5-inch SATA)
- [R183-Z95](#): Total 14 sets of storage drive bays, including 6 sets of Gen4 EDSFF E1.S which are the latest SSD spec, providing high-density storage in a 1U system.



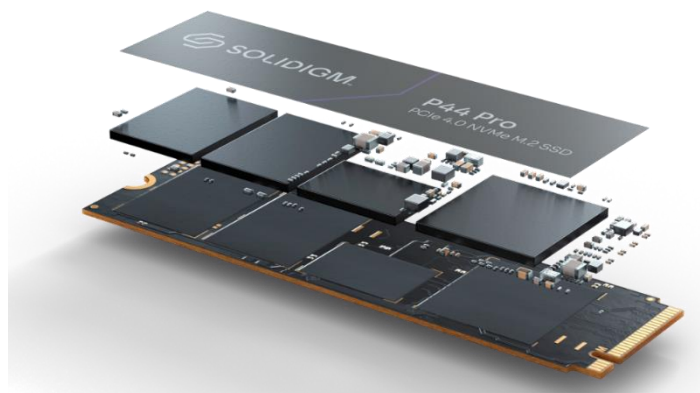
# Solidigm Changing the Storage Paradigm



***Posted by Mike Heumann, January 10, 2023***

[Solidigm](#) is a leading global provider of innovative NAND flash memory solutions which was launched as a U.S.-based subsidiary of SK Hynix, Inc. (the world's second-largest memory chip maker) on December 29, 2021, following an October 2020 agreement by SK Hynix to acquire Intel's NAND and SSD business.

As Solidigm approaches their first anniversary on December 29, here are just a few of the ways that they have changed the storage paradigm:



## **New Products**

- *Combining Solidigm & SK Hynix's data center expertise:* Announced in April, the [P5530](#), an enterprise SSD, was a collaboration between Solidigm and SK Hynix. It combines SK Hynix's 128-layer NAND Flash with Solidigm's SSD controller and firmware expertise.
- *Expanded data center offerings:* The [D7-P5520](#) and the [D7-P5620](#) product lines were also added in April and are tuned for real-world cloud and enterprise workloads.
- *Upgrading clients' data performance:* The [P41 Plus](#) is an innovative PCIe 4.0 product that delivers the industry's best combination of performance and value to PC users for everyday productivity and gaming.
- *The premier SSD for enthusiasts:* The [P44 Pro SSD](#), announced in October, is a high-performance client SSD for today's most demanding workloads. With blazing-fast speed and excellent power efficiency, the P44 Pro is the world's premier SSD for enthusiasts.

## **New Technology**

- Solidigm demonstrated the world's first working [Penta-Level Cell \(PLC\) SSD](#) during the company's keynote at [Flash Memory Summit](#). A penta-level cell SSD stores five bits of data per memory cell and can store 25% more data in the same footprint compared to quad-level cell (QLC) SSDs. The added storage in the same space will allow for future cost, space, and energy usage savings for solid-state storage.

- At [Open Commute Summit](#) and at [Tech Storage Field Day](#), Solidigm shared plans for 4th Gen 192-layer QLC 30.72TB and 61.44TB solutions, delivering rapid access to more data more efficiently.

Solidigm recently build their new U.S. global research and development (R&D) campus in the city of [Rancho Cordova](#) in the Greater Sacramento Area – an investment of more than \$100 million.

Solidigm is also opening a new operations center in [Gdańsk, Poland](#), to support the needs of engineers focused on developing advanced firmware and software to power the storage devices of tomorrow.

Solidigm is a leading global provider of innovative NAND flash memory solutions. Solidigm technology unlocks data's unlimited potential for customers, enabling them to fuel human advancement and reflect Intel's longstanding innovation in memory products and SK Hynix's international leadership and scale in the semiconductor industry.

## BlackBerry Software-Defined Vehicle Innovation



*Posted by Mike Heumann, January 10, 2023*

More than 55 of the world's automotive OEMs are [BlackBerry](#) customers. Audi, BMW, Ford, GM, Toyota, Volkswagen's 13 brands, Volvo — and seven of the top ten Chinese automakers, among others — rely on BlackBerry for safety and security, as well as acoustics and other functionality, within their increasingly [software-defined vehicles](#).

It was against this backdrop that BlackBerry made five significant announcements at #CES2023:

### 1. [BlackBerry IVY Design Win](#)

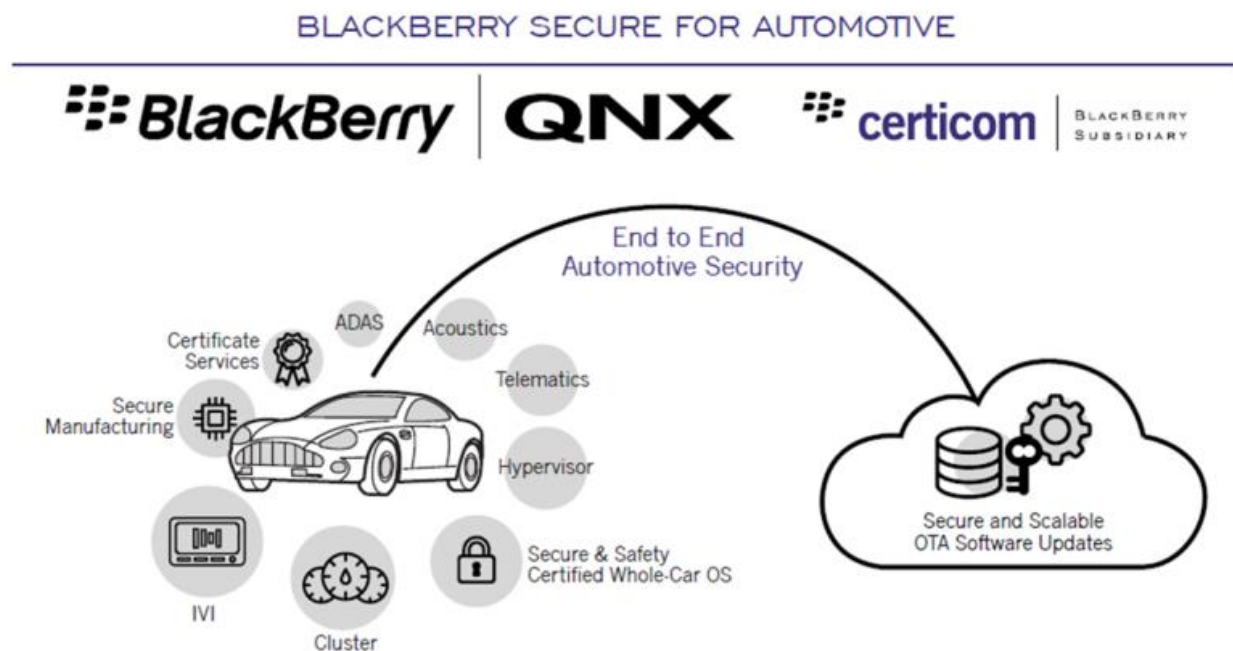
Blackberry announced their first [BlackBerry IVY™](#) design win with a leading Chinese automaker, Dongfeng Motor, which selected the PATEO Digital Cockpit powered by BlackBerry IVY to be deployed in its next-generation all-electric VOYAH model. Set to enter mass production in 2024, the premium VOYAH model will also incorporate Electra Vehicles Inc.'s battery management solution based on IVY, which provides real-time, personalized recommendations allowing drivers to dramatically improve EV battery performance and range. Electra's unique AI-enabled software will do much to alleviate drivers' "range anxiety," one of the keys to unlocking increased global demand for electric vehicles.

## 2. [IVY Running on Three Commercially-Available Automotive Platforms](#)

BlackBerry also announced that IVY will be pre-integrated on commercially-available digital cockpit platforms from leading Tier 1 automotive suppliers Bosch and PATEO, and via the AWS Cloud. The solution will reach general availability in May 2023, representing the culmination of two years of comprehensive development efforts and numerous iterations, all pressure-tested with partners and customers around the world. Use cases include predictive maintenance, usage-based insurance, in-vehicle payments, [next-generation 911 emergency response](#), and intelligent EV battery management.

## 3. [“QNX in the Cloud” General Availability](#)

BlackBerry also announced the general availability of their industry-leading [QNX® real-time operating system \(RTOS\)](#) on the AWS Marketplace, which targets cloud-based developers of mission-critical embedded systems. Auto solution vendors Marelli and Continental are among the companies evaluating the solution for development of their next-generation automotive technologies.



## 4. [More Design Wins: Marelli](#)

BlackBerry also expanded their 7-year collaboration with Marelli with the deployment of the new [Acoustics Management Platform \(AMP\)](#) for its enhanced in-car audio experience. AMP allows Marelli will be able to reduce unwanted echo and background noise which have long plagued hands-free communications in the car.



## 5. [Software-Defined Vehicle Innovator Awards with MotorTrend](#)

Earlier this year Blackberry partnered with MotorTrend, with the goal to recognize and celebrate excellence in the field of automotive software development. MotorTrend's editorial team saw the increasing importance of software in building the cars of today and tomorrow, and they were eager to showcase leading individuals and their roles in pushing the boundaries of vehicle design and engineering.

### **SK Hynix Seeks to Significantly Reduce Carbon Emissions**



*Posted by Mike Heumann, January 10, 2023*

[SK Hynix](#) showcased a broad range of cutting-edge NetZero technologies at #CES2023, demonstrating that innovative solutions that can effectively reduce global carbon emissions, and combat the impacts of Climate Change. "This CES will be an opportunity to show that SK is a company pursuing businesses and advancing technologies across a broad area of industries to significantly reduce Carbon Emissions," said Hyunho Son, Vice President of the Strategy Support Team for the SK SUPLEX Council. "We look forward to joining forces with more global companies to transition to a net zero world."

SK Group and its global partners showcased a number of carbon reduction technologies including:

- [SK On](#) SF (Super-Fast) battery with the fastest charging speed among commercially available batteries. Applying a special coating technology, it can be charged up to 80% in 18 minutes and can run more than 400 km on a single charge. The SF Battery won the CES 2023 Best Innovation Award in the category of Embedded Technologies, as well as the Innovation Award in the Vehicle Technology and Advanced Mobility category.
- [TerraPower](#), jointly invested by [SK Inc.](#) and [SK Innovation](#), showcased a sodium-cooled fast reactor (SFR) that is expected to be a carbon-neutral power source, along with its Small Modular Reactor (SMR).





Other technologies demonstrated at #CES2023 included:

- [SK Telecom](#) will exhibit an Urban Air Mobility (UAM) solution that can save time and reduce pollution, the heart of which is SK's SAPEON artificial intelligent (AI) ASIC to managed power consumption. A life-size UAM simulator for virtual experience is built in the exhibition hall, which shows how SAPEON helps UAM aircraft operation and a virtual power plant supply power to aircraft and airfields.
- [SK Signet](#), a leader in ultra-fast charging service for electric vehicles in the U.S., will introduce a new charging technology, and [SK earthon](#) will introduce its carbon capture and storage (CCS) technology.
- [SK ecoplant](#) will share WAYBLE, a solution that digitally tracks and manages the entire life cycle of waste. The technology won the Innovation Award in CES 2023 in the Smart City category, and [SK geo centric](#) will present core technologies that produce petrochemical raw materials using oil extracted from waste plastic.

SK Hynix also displayed semiconductor memory chips and storage technologies that can deliver increased performance and lower energy consumption.





## **G2M Research Multi-Vendor Webinar Series**

Our webinar schedule is below. Registration links and more information will be available in our next newsletter, on our website, and you can always contact us directly with questions. We are offering a Cybersecurity series and an Enterprise Storage & Technology multivendor series.

Interested in Sponsoring a webinar? Contact [G2M](#) for a prospectus. We can create custom webinar, custom webinar series, and add or modify topics to specifically appeal to your target audience. [View](#) our webinars and [access](#) slide deck presentations on our website.

### **Enterprise Storage & Technology Webinars**

<a href="#">The Need for Speed: NVMe &amp; Advanced SSDs</a>	February 7
<a href="#">Memory As The New Storage – CXL, Extended Memory, &amp; Persistent Memory. What Does the Future Hold?</a>	March 7
<a href="#">Storage Architectures for Artificial Intelligence &amp; Machine Learning</a>	April 4
<a href="#">Software-Defined Flash Memory Architectures</a>	May 9
<a href="#">Storage &amp; Compute Architectures for Healthcare &amp; Imaging Applications</a>	June 27
<a href="#">NVMe &amp; NVMe-oF – Past, Present, &amp; Future</a>	July 11
<a href="#">GPUs, SSDs, &amp; Shared Memory: Accelerating Computing?</a>	August 22
<a href="#">Securing Data – How Storage &amp; Cybersecurity Technologies Can Work Together</a>	Sept 26
<a href="#">The Open Compute Platform (OCP) Movement – Providing Compute-At-Scale Value to On-Premises Deployments</a>	October 24
<a href="#">Storage Architectures for HPC Clusters</a>	November 21
<a href="#">2024 Trends – Cloud, On-Premises, &amp; Hybrid Compute/Storage</a>	December 12

### **Cybersecurity Webinars**

<a href="#">Bug Bounties Gone Bad? Uber Case Highlights Pressure on CISOs.</a>	January 12
<a href="#">Cybersecurity for Remote Workers &amp; Mobile Devices</a>	March 23

<a href="#"><u>The Increasing Complexity of Cybersecurity Regulatory &amp; Compliance for the Financial Services Industry</u></a>	May 25
<a href="#"><u>xDR- The Promise versus the Reality</u></a>	June 15
<a href="#"><u>10 Features of an Effective Attack Surface Management Tool</u></a>	September 7
<a href="#"><u>How Secure is the Cloud for Your Workloads?</u></a>	October 12
<a href="#"><u>Do You Need a SIEM? Use Cases Where a SIEM Makes Sense.</u></a>	November 9



## Upcoming 2023 Conferences

January 18	<a href="#"><u>SNIA Persistent Memory Summit</u></a> , San Jose, CA
January 30-Feb 1	<a href="#"><u>Cybertech Global TLV</u></a> , Tel Aviv, Israel
February 6-10	<a href="#"><u>Cisco Live</u></a> , Amsterdam, Netherlands
February 13-14	<a href="#"><u>Gartner Security &amp; Risk Management</u></a> , Mumbai, India
February 14-16	<a href="#"><u>ESNA Expo</u></a> , Long Beach, CA
February 14-17	<a href="#"><u>ITExpo East</u></a> , Fort Lauderdale, FL
February 27-28	<a href="#"><u>Gartner Security &amp; Risk Management Summit</u></a> , Dubai
February 27-March 2	<a href="#"><u>Mobile World Congress Barcelona</u></a>
February 28-March 2	<a href="#"><u>Rice University Energy HPCC Conference</u></a> , Houston, TX
March 8-9	<a href="#"><u>CloudExpo Europe</u></a> , London
March 14-16	<a href="#"><u>Gulf Information Security Expo</u></a> , Dubai, UAE
March 20-22	<a href="#"><u>Gartner Data &amp; Analytics Summit</u></a> , Grapevine, TX
March 20-23	<a href="#"><u>GTC CPU Technology Conference</u></a> , San Jose, CA
March 28-29	<a href="#"><u>Gartner Security &amp; Risk Management</u></a> , Sydney, Australia
March 28-31	<a href="#"><u>ISC West</u></a> , Las Vegas
April 15-19	<a href="#"><u>NABShow</u></a> , Las Vegas



April 17-21	<a href="#">HIMMS Global Health Conference</a> , Chicago, IL
April 19-20	<a href="#">CyberSec Europe</a> , Brussels, Belgium
April 5-7	<a href="#">IST Information Security Expo</a> , Tokyo, Japan
April 24-27	<a href="#">RSA Conference</a> , San Francisco
May 22-25	<a href="#">Dell World</a> , Las Vegas
June 2-6	<a href="#">School Transportation Network Expo East</a> , Indianapolis, IN
June 4-8	<a href="#">Cisco Live</a> , Las Vegas
June 5-7	<a href="#">Gartner Security &amp; Risk Managemnt</a> , National Harbor, MD
June 7-9	<a href="#">Synnex Red, White and You</a> , Greenville, SC
June 14-16	<a href="#">Interop Tokyo</a> , Chiba, Japan
June 20-22	<a href="#">HPE Discover</a> , Las Vegas
June 20-22	<a href="#">Info Security Europe</a> , London
July 14-19	<a href="#">School Transportation Network Expo</a> , Reno, NV
August 1-3	<a href="#">Flash Memory Summit</a> , Santa Clara, CA



Effective Marketing & Communications  
with Quantifiable Results