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# Microsemi Leading Industry Innovation with 24G SAS and PCIe Gen 4 Tri-mode Storage Controller Technology

## 16 Nanometer Controllers Will Unleash the Full Potential of Storage Infrastructure Technologies for the PCIe Gen 4 Data Center

ALISO VIEJO, Calif., Aug. 6, 2018 /PRNewswire/ -- **Microsemi Corporation**, a wholly owned subsidiary of Microchip Technology Inc. (Nasdaq: MCHP), has leveraged its industry-leading position on 24G SAS and PCIe Gen 4 tri-mode controller technology with the announcement of the SmartROC 3200 and SmartIOC 2200 storage controllers. The new devices contain critical technology specifically designed to meet the demanding storage performance and flexibility requirements for the next generation of data centers.



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"Our innovations deliver a storage management and connectivity solution enabling customers to bring all the intelligence and performance of our acclaimed [Smart Storage](#) family into the era of PCIe Gen 4, NVMe, 24G SAS and universal bay servers," said Pete Hazen, vice president of Microsemi's Data Center Solutions business unit. "Our hyperscale and enterprise server customers will benefit from several industry-first capabilities including support for a PCIe Gen 4 interface with DirectPath technology for low latency NVMe transactions, and 24G SAS with Dynamic Channel Multiplexing (DCM) for efficient aggregation of lower speed SAS or SATA hard drives onto 24G SAS infrastructure, making this portfolio of controllers the most versatile and innovative in the industry."

NVMe SSD usage in enterprise servers continues to accelerate through innovations in drive reliability and serviceability, as well as new standards such as SFF's Universal Backplane Management (UBM) and FF-TA-1001 (U.3) specifications. Enterprise class storage management and data protection features offered by these new storage controllers is a

requirement amongst many enterprise customers. As universal bay servers begin to emerge to support this increased NVMe media adoption where deployment flexibility is desired, these servers will require the storage controller to flexibly connect to NVMe, SAS and SATA solid state drives (SSDs) or hard disk drives (HDDs).

"PCIe Gen 4, 24G SAS, U.3 and UBM are critical enabling technologies for HPE going forward, and for the server storage industry as a whole," said Tom Lattin, vice president and general manager, Mass Market Platforms, Options and Software, HPE. "Innovating around these technologies are an important part of our mission to deliver better business outcomes to our customers by driving increased value, performance and scalability while simplifying server storage solutions."

New SAS and SATA HDD and SSD innovations, including multi-actuator hard drives and MultiLink SAS™ SSDs, will increase the need for bandwidth on the storage infrastructure, driving the need for a 24G SAS storage backbone. Microsemi offers the first storage controller solution to deliver enough bandwidth to saturate the PCIe Gen 4 interface to the CPU combined with tri-mode connectivity towards the storage media with support for all of PCIe Gen 4, 24G SAS and 6G SATA.

"Future storage solutions will require 24G SAS storage bandwidth to take full advantage of SAS-based capacity and performance storage systems in a PCIe Gen 4-enabled data center," said Jeremy Werner, vice president of marketing and product planning, Toshiba Memory America, Inc. "We are looking forward to the arrival of Microsemi's 24G SAS solutions as we expect these will allow the storage infrastructure to fully utilize the performance capabilities of Toshiba wide port and MultiLink SAS™ solid state drives, not to mention providing a more efficient storage backbone for existing 12Gbps SAS media."

The first IOC and ROC with 24G SAS, the SmartROC 3200 and SmartIOC 2200 remove storage bottlenecks and enable systems to take full advantage of the PCI Gen 4 host interfaces in high performance or high capacity storage configurations. The devices also carry forward the value of Microsemi's Smart Storage Stack, including its proven reliability, comprehensive storage management tools and maxCrypto controller-based encryption. These devices also feature Trusted Platform support, a new level of platform security which includes hardware root of trust which are aligned with initiatives like the Open Compute Security Project.

SmartROC 3200 and SmartIOC 2200 solution highlights:

- PCIe Gen 4 CPU interconnect
- Tri-mode media connectivity, supporting PCIe Gen 4 NVMe, 24G SAS, and 6G SATA on any lane
- Innovative DirectPath architecture provides for lowest possible latency for NVMe transactions
- Dynamic Channel Multiplexing (DCM) technology provides full utilization of 24G SAS bandwidth uplinks when aggregating lower speed storage devices
- Support for unified Smart Storage firmware, drivers, and tools

The SmartROC 3200 and SmartIOC 2200 are part of a full end-to-end solution of storage infrastructure and endpoint solutions for PCIe Gen 4 and 24G SAS.

### **Product Availability**

The SmartROC 3200 and SmartIOC 2200 will sample to select customers in 2018. For

additional information, visit [www.microsemi.com/smartstorage](http://www.microsemi.com/smartstorage), [www.microsemi.com/smartstorage/pcieg4](http://www.microsemi.com/smartstorage/pcieg4) and [www.microsemi.com/smartstorage/24gsas](http://www.microsemi.com/smartstorage/24gsas). For details on SmartROC 3200 and SmartIOC 2200 prototype availability, contact [sales.support@microsemi.com](mailto:sales.support@microsemi.com).

### **About Microsemi**

Microsemi Corporation, a wholly owned subsidiary of Microchip Technology, Inc. (Nasdaq: MCHP), offers a comprehensive portfolio of semiconductor and system solutions for aerospace & defense, communications, data center and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; enterprise storage and communication solutions, security technologies and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, California. Learn more at [www.microsemi.com](http://www.microsemi.com).

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