

# Microsemi Extends Flashtec Product Line with NVMe Controllers Optimized for Mainstream, High-Capacity Enterprise and Data Center SSDs

New Devices to be Showcased at Flash Memory Summit Aug. 9-11 in Santa Clara, California

ALISO VIEJO, Calif., Aug. 8, 2016 /PRNewswire/ -- **Microsemi Corporation** (Nasdaq: MSCC), a leading provider of semiconductor solutions differentiated by power, security, reliability and performance, today announced the availability of its mainstream Flashtec NVM Express (NVMe)2108 eight channel and NVMe2104 four channel controllers, enabling leading enterprises and data centers worldwide to realize cost and power effective high capacity solid state drives (SSDs). The second generation PCIe devices extend Microsemi's product line to mainstream capacity, performance and power while maintaining architectural consistency and attractive enterprise features from its current controllers.



"Our new Flashtec NVMe2108 and NVMe2104 controllers are the latest offerings demonstrating Microsemi's multi-generational expertise in delivering PCIe NVMe SSD controller products for enterprise, server and data center markets," said Derek Dicker, vice president and business unit manager, performance storage, at Microsemi. "These new controllers provide the balance of the same enterprise grade features and a mature enterprise architecture customers have come to expect from us, with lower power and cost structure aligned with the mainstream PCIe segment's U.2 and M.2 needs."

According to market research firm IDC's report titled, "Worldwide Solid State Drive Forecast, 2015–2019," the industry is transitioning toward PCIe-based SSDs, with PCIe-based SSDs estimated to be more than 40 percent of enterprise SSD revenue by 2019. Microsemi's full portfolio of second generation PCIe controllers cater to this growing demand. The company's two new devices offer eight and four channel PCIe NVMe controllers capable of supporting capacities of greater than 7 TB, a DDR4 interface capable of supporting 8 GB and higher, dual-port, SRIS, end-end data protection and M.2 form factor support using the four channel product.

In addition, the new devices enable reuse of firmware with existing Microsemi NVMe controller customers, expanding support and making design cycles shorter. The new Flashtec NVMe2108 and NVMe2104 controllers are optimized for leading mainstream read/write performance. Since the controller performs all flash management operations on-chip and consumes negligible host processing and memory resources, it can also be used by customers for host based Flash Translation Layer (FTL) implementations.

Key features include:

- Extending the current controller architecture to mainstream eight and four channel

- PCIe Flash controllers for enterprise and data center markets
- Support for greater than 8GB of DDR4 using standard components
  - Eight channel optimized for U.2 and half-height half-length (HHHL), while the four channel can also support M.2 form factors
  - Mature architecture with optimized power and cost for mainstream, while preserving enterprise features like dual-port, SRIS and end-end data protection
  - Advanced ECC enables support of current and future generations of Toggle and ONFI NAND
  - Programmable architecture enables SSD product differentiation through firmware customizations

### **Industry Quotes**

**Micron:** "The announcement of Microsemi's new Flashtec devices demonstrates how the company continues to accelerate adoption of PCIe flash into the mainstream enterprise segment," said Eric Endebrook, vice president of storage marketing at Micron. "The high capacity these mainstream controllers support are well aligned to take advantage of Micron's rapidly ramping 384Gb 3D TLC and 256Gb MLC NAND."

**Toshiba:** "With our 3D Flash Memory products called BiCS FLASH, we are pleased to work closely with Microsemi," said Hiroo Ohta, technology executive, Storage & Electronic Devices Solutions Company, Toshiba Corporation. "We believe our collaboration brings high performance, high reliability and the high density solution for expanding enterprises and data centers segments."

**Hynix:** "Data center and hyperscale markets continue to ramp their use of PCIe SSDs, and Microsemi's new mainstream SSD controllers will help accelerate that trend," said VP S.H. Choir, head of NAND product planning office at SK Hynix. "SK Hynix's next-generation 3D NAND and Microsemi's advanced LDPC technology will usher in a new era of mainstream high-endurance enterprise SSDs."

### **Product Availability**

Microsemi's Flashtec NVMe2108 and NVMe2104 controllers are sampling now. For more information, visit <http://www.microsemi.com/products/storage/flashtec-nvme-controllers/flashtec-nvme-controllers> or contact [sales.support@microsemi.com](mailto:sales.support@microsemi.com).

### **Product Demonstrations in Booth #213 at Flash Memory Summit Aug. 9-11**

Microsemi will be showcasing its new devices at the upcoming [Flash Memory Summit](#) Aug. 9-11, 2016, with product demonstrations offered in Microsemi's booth, #213. The event, which will be held at the Santa Clara Convention Center in Santa Clara, California, educates attendees about the latest developments in flash memory.

### **About Microsemi's Product Portfolio for Data Center**

Microsemi is a premier supplier of innovative semiconductor, board, system, software and services for enterprise and hyperscale data centers, enabling high performance, secure, low power and reliable infrastructure for scalable deployments. Microsemi technologies drive innovation in applications including storage systems, server storage, NVM solutions, Ethernet switching, rack scale architecture, data center interconnect, network timing and power subsystems. Building on a track record of technology leadership, Microsemi's data center infrastructure portfolio is transforming networks that connect, store and move big data, while lowering the total cost of ownership of

deploying next generation services.

The portfolio includes high performance NVMe storage controllers, NVRAM drives, SAS/SATA host bus adapters and RAID controllers enabling high capacity storage architectures, high density PCIe switching and firmware for rack scale architectures, PCIe re-drivers, and Ethernet PHYs for intra-rack connectivity. Microsemi's product portfolio also includes clock and power management, IEEE1588 integrated circuits (ICs) and NTP servers for synchronization across the data center, as well as field programmable gate arrays (FPGAs) and system-on-chip (SoC) FPGAs to perform secure system management of servers and storage. For more information, visit <http://www.microsemi.com/applications/data-center>.

### **About Microsemi**

Microsemi Corporation (Nasdaq: MSCC) 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, and has approximately 4,800 employees globally. Learn more at [www.microsemi.com](http://www.microsemi.com).

Microsemi and the Microsemi logo are registered trademarks or service marks of Microsemi Corporation and/or its affiliates. Third-party trademarks and service marks mentioned herein are the property of their respective owners.

"Safe Harbor" Statement under the Private Securities Litigation Reform Act of 1995: Any statements set forth in this news release that are not entirely historical and factual in nature, including without limitation statements related to the availability of its Flashtec NVM Express (NVMe)2108 and NVMe2104 controllers, enabling leading enterprises and data centers worldwide to realize the highest performance solid state drives (SSDs) utilizing next generation NAND technologies, and its potential effects on future business, are forward-looking statements. These forward-looking statements are based on our current expectations and are inherently subject to risks and uncertainties that could cause actual results to differ materially from those expressed in the forward-looking statements. The potential risks and uncertainties include, but are not limited to, such factors as rapidly changing technology and product obsolescence, potential cost increases, variations in customer order preferences, weakness or competitive pricing environment of the marketplace, uncertain demand for and acceptance of the company's products, adverse circumstances in any of our end markets, results of in-process or planned development or marketing and promotional campaigns, difficulties foreseeing future demand, potential non-realization of expected orders or non-realization of backlog, product returns, product liability, and other potential unexpected business and economic conditions or adverse changes in current or expected industry conditions, difficulties and costs of protecting patents and other proprietary rights,

inventory obsolescence and difficulties regarding customer qualification of products. In addition to these factors and any other factors mentioned elsewhere in this news release, the reader should refer as well to the factors, uncertainties or risks identified in the company's most recent Form 10-K and all subsequent Form 10-Q reports filed by Microsemi with the SEC. Additional risk factors may be identified from time to time in Microsemi's future filings. The forward-looking statements included in this release speak only as of the date hereof, and Microsemi does not undertake any obligation to update these forward-looking statements to reflect subsequent events or circumstances.

Regards,

Farhad Mafie

Microsemi Corporation

VP WW Product Marketing

949-380-6161 (O)

949-356-2399 (C)

<http://www.Microsemi.com/>

One Enterprise, Aliso Viejo, CA 92656