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Marvell's Industry-Leading SSD Controller Technology Expands the NVMe Host Memory Buffer Ecosystem

Marvell delivers the industry's first SSD controller that supports the NVMe 1.2 Host Memory Buffer feature and enables a new generation of high performance, cost effective mobile computing solutions

SANTA CLARA, Calif. and LAS VEGAS, Jan. 5, 2016 /PRNewswire/ -- Marvell (NASDAQ:MRVL), a world leader in storage, cloud infrastructure, Internet of Things (IoT), connectivity and multimedia semiconductor solutions, today announced expansion of its Non-Volatile Memory Express (NVMe) solid-state drive (SSD) controller technology to support Host Memory Buffer (HMB), an NVMe revision 1.2 feature enabling DRAM-less SSDs to use host memory and achieve performance comparable to SSD designs with embedded DRAM but at much lower cost and power consumption. Marvell's 88NV1140 marks the industry's first SSD controller that supports HMB. Furthermore Marvell is partnering with other leaders in the PC ecosystem to accelerate the adoption of HMB-enabled SSDs for a new generation of low power, small form factor mobile computing systems.

"As the world's leading SSD controller provider, Marvell has once again made a unique contribution to the storage industry by pioneering the integration of Host Memory Buffer technology into DRAM-less products," said David Chen, Vice President of SSD Business at Marvell. "The HMB feature greatly enhances system memory utilization, reduces total system cost, lowers power consumption and provides consumers with a new class of mobile computing devices. I am very pleased with our ongoing collaboration with leading ecosystem partners and look forward to the fast adoption of HMB in the broad consumer market."

"The NVM Express organization is pleased to see the first product ship that supports the Host Memory Buffer feature," said Amber Huffman, President, NVM Express, Inc. "This is an important step in developing the ecosystem to support use of NVM Express SSDs in low power and small form factor devices in mobile computing."

Marvell's 88NV1140 is the world's first DRAM-less NVMe SSD controller for mass market mobile computing solutions with industry-leading NANDEdge™ low-density parity check (LDPC) technology supporting triple-level cell (TLC) and 3D NAND. It enables small form factor SSD solutions with unparalleled performance for integration into low-z-height tablets, Chromebooks and new 2-in-1 hybrid/detachable mobile PC platforms. Additionally, Marvell's 88NV1140 has enabled the industry's first hardware to support the new NVMe HMB feature. By leveraging memory allocated from the host system, the DRAM-less based 88NV1140 is able to scale up performance without limitations of conventional DRAM-less architectures.

Key features and benefits of Marvell's 88NV1140 include:

- Powerful dual core Cortex R5 CPUs
- Embedded SRAM with hardware accelerators to optimize IOPS performance
- DRAM-less SSD through NVMe interface leverages HMB to scale up performance and reduce total BOM cost
- NANDEdge LDPC error-correction technology boosts SSD endurance and supports 15nm TLC and 3D NAND
- Low power management (L1.2) design
- 28nm low power CMOS process

Marvell will be showcasing its Host Memory Buffer and other cutting-edge storage solutions at CES 2016 in Marvell's suite, Level 3, Murano No. 3304, at The Venetian. CES is being held in Las Vegas at the Las Vegas Convention and World Trade Center and the Venetian Hotel on Jan. 6–9, 2016.

About NVM Express, Inc.
NVM Express, Inc. was formed to define a new storage interface protocol, NVM Express, to enable the full performance potential provided by non-volatile memory storage technology, such as PCI Express solid state drives, in a standards-based approach to enable broad ecosystem adoption. NVM Express, Inc. is a non-profit organization and includes more than 95 member companies.

About Marvell
Marvell (NASDAQ: MRVL) is a global leader in providing complete silicon solutions and Kinoma® software enabling the "Smart Life and Smart Lifestyle." From storage to cloud infrastructure, Internet of Things (IoT), connectivity and multimedia, Marvell's diverse product portfolio aligns complete platform designs with industry-leading performance, security, reliability and efficiency. At the core of the world's most powerful consumer, network and enterprise systems, Marvell empowers partners and their customers to always stand at the forefront of innovation, performance and mass appeal. By providing people around the world with mobility and ease of access to services adding value to their social, personal and work lives, Marvell is committed to enhancing the human experience.

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