



Silicon Motion Introduces World's First Merchant 6Gb/s SSD Controller Solution Supporting TLC NAND

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SM2256 Complete ASIC/Firmware Solution With NANDXtend(TM) Technology Triples Durability, Enables High Performance and Cost-Optimized TLC SSDs

MILPITAS, Calif., Aug. 5, 2014 (GLOBE NEWSWIRE) -- Silicon Motion Technology Corporation (Nasdaq:SIMO) ("Silicon Motion"), a global leader in designing and marketing NAND flash controllers for solid state storage devices, today introduced SM2256, the world's first complete merchant ASIC/firmware SATA 6Gb/s SSD controller solution supporting 1x/1y/1z nm triple-level cell (TLC) NAND from all major NAND suppliers. Leveraging Silicon Motion's proprietary NANDXtend error-correcting code (ECC) technology, the SM2256 provides comprehensive data protection and enhances the endurance and retention of TLC NAND, delivering more than three times better durability for TLC SSD. The SM2256 and Silicon Motion's other products will be showcased at booth #615 and # 617 at the upcoming Flash Memory Summit in Santa Clara, CA from August 5 to 7.

The SM2256 incorporates Silicon Motion's proprietary NANDXtend technology. The state-of-the-art ECC engine provides three levels of error correction and data protection. First, errors are corrected by Low Density Parity Check (LDPC) hard decoding with low-power and high-efficiency circuits to minimize power consumption. Second, the LDPC soft-decoding digital signal processing algorithm provides an additional level of error correction by voltage threshold tracking. Finally, the on-chip RAID with page parity is used for recovery of uncorrectable data. In addition, the NANDXtend technology can maintain consistent data throughput and provides a better user experience, even as error bits increase throughout the product lifecycle of NAND flash. The SM2256 can triple the P/E cycles for TLC NAND to extend the SSD lifespan, enabling high performance, better reliability, and more cost effective SSD solutions.

"We are excited to be the only merchant controller supplier today to offer a SATA 6Gb/s SSD controller with complete ASIC and firmware for TLC NAND," said Wallace Kou, President and CEO of Silicon Motion. "Our SM2256 supports the broadest range of NAND flash, including 1x/1y/1znm TLC NAND and the upcoming 3D NAND from all the major NAND suppliers, allowing SSD OEMs to deliver the most advanced, cost-effective and reliable SSDs in the market."

"We expect TLC SSDs to account for more than 40% of all client SSD shipments in 2015," said Michael Yang, Senior Principal analyst at IHS iSuppli. "The combination of cost effective TLC NAND and new controllers like Silicon Motion's SM2256 will help drive this level of adoption."

"NAND flash memory is transitioning to TLC technology in an effort to improve the affordability and increase adoption of solid state drives," said Gregory Wong, President at Forward Insights. "Solutions such as Silicon Motion's SM2256 controller enable systems manufacturers to leverage TLC technology in cost-effective SSD products without compromising performance, endurance or reliability."

Silicon Motion's SM2256 provides a complete hardware and firmware SSD controller solution with industry leading capabilities and technologies including:

- Proprietary NANDXtend error-correcting and data protection technology to triples the P/E cycles for TLC SSD devices
- Supports the latest 1x/1y/1z nm MLC and TLC flash, enabling cost-optimized, high capacity client SSDs
- Extensible to support future 3D MLC/TLC NAND
- Supports ONFI 3.0, Toggle 2.0 and asynchronous NAND
- Ultra high performance (256GB SSD with Toshiba A19 TLC NAND)
 - Sequential Read: 524MB/s
 - Sequential Write: 400MB/s
 - 4K Random Read IOPS (QD32): 90,000
 - 4K Random Write IOPS (QD32): 70,000
- Ideally suited for client SSDs targeting ultrabooks, laptops, tablets and HDD replacement
- Incorporates the latest security protocols and is AES 256, Trusted Computing Group (TCG) and Opal full-drive encryption compliant
- Supports both commercial (0°C to 70°C) and industrial grade (-40°C to 85°C) requirements

Silicon Motion is currently sampling its SM2256 SSD controller and expects to enter mass production in the fourth quarter of 2014.

Silicon Motion to Present at Flash Memory Summit

Silicon Motion will present at the following seminars at Flash Memory Summit:

Session 102-B: Consumer Applications (Tuesday, August 5, 9:45am-10:50am): Stanley Huang, Product Marketing Manager of Silicon Motion, will be presenting "The New Generation of Consumer SSD", as part of Session 102-B.

Session 203-B: Embedded SSD Applications (Wednesday, August 6, 3:10pm to 4:15pm): Jason Chien, Product Marketing Manager of Silicon Motion, will be presenting "The Tailor-Made SSDs Solve Embedded Storage Challenges", as part of Session 203-B.

Forum E-22: Controllers and Flash Technology, Part 2: Decoding the Future (Wednesday, August 6, 3:10pm-5:45pm): Jeff Yang, Principal

Engineer of Silicon Motion's Algorithm & Technology team, will be speaking about "Low-Power Error Correction for Mobile Storage", as part of Forum E-22.

For more information on Silicon Motion, please go to <http://www.siliconmotion.com>.

About Silicon Motion:

We are a fabless semiconductor company that designs, develops and markets high performance, low-power semiconductor solutions to OEMs and other customers in the mobile storage and mobile communications markets. For the mobile storage market, our key products are microcontrollers used in solid state storage devices such as SSDs, eMMCs and other embedded flash applications, as well as removable storage products. For the mobile communications market, our key products are handset transceivers and mobile TV IC solutions. Our products are widely used in smartphones, tablets, and industrial and commercial applications. For further information on Silicon Motion, visit www.siliconmotion.com.

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