



Virtium to Bring Industrial 3D NAND-based SSDs to Market

Solid-State-Storage Leader's Cost-Efficient 3D NAND Solid-State Storage Solutions to Tackle Embedded, Industrial IoT Applications

RANCHO SANTA MARGARITA, Calif. – Feb. 6, 2019 -- Virtium, a leading provider of solid-state drive (SSD) and memory solutions for the Industrial Internet of Things (IIoT) markets, today announced it will expand its extensive StorFly® family of SSDs to include industrial-grade 3D NAND-based drives, beginning the first quarter 2019. The new Virtium® SSDs will leverage 3D NAND flash devices' lower cost per bit and be available in a wide range of interfaces, form factors and capacities. Additionally, the 3D NAND-based drives will address the critical requirements of today's embedded and IIoT applications, including: high endurance, industrial temperature (-40°C to 85°C) support, power-loss protection, tolerance to high shock and vibration, lower operating power, locked bill-of-materials costs (with PCN support), and security.

"3D NAND has become the de facto flash technology for enterprise and client SSDs, and is expected to account for more than 80 percent of total NAND output in 2019," said Scott Phillips, vice president of marketing, Virtium. "Although several embedded SSD manufacturers rushed to market with 3D NAND solutions earlier last year, we opted to take the added time needed to ensure our new StorFly 3D NAND-based SSDs will meet the demanding endurance and environmental needs of the industrial embedded market. We leveraged Virtium's 20-plus years of storage and memory experience -- from concept through final test -- to yield the best true industrial-grade 3D NAND SSDs embedded and IIoT system designers can buy. Those designers will benefit from 3D NAND's cost efficiencies, as well as higher

maximum capacities, without sacrificing reliability or support for industrial-grade features.”

"Thanks to its scalability and cost-per-bit advantage, 3D NAND flash is poised to revolutionize both enterprise and industrial solid-state storage," said Alan Niebel, president of WebFeet Research and author of the report *Flash and XPoint Memory Applications and Markets*. "Virtium's new 3D NAND-based StorFly SSDs provide an integrated example of how this technology combined with their industrial design expertise -- literally, a new dimension in storage -- can advance a wide range of market segments.”

The new StorFly SSDs will take advantage of 3D NAND's lower cost per bit enabled by NAND flash dies being “stacked” for higher density, as opposed to the conventional planar method of manufacturing flash. The drives are designed from the ground up to ensure the endurance and reliability designers have come to expect from previous NAND generations – particularly in extreme, industrial-temperature environments, as opposed to the simple production-temperature screening of the most current 3D-based solutions claiming to feature industrial-temperature support. Virtium's I-Temp 3D NAND-based SSDs use the market's only NAND manufacturer-endorsed industrial-temperature 3D flash storage. This contrasts with other, earlier-announced industrial-temperature 3D NAND that lacks the endorsement of the manufacturer, presenting the possibility of longer-term reliability issues.

The new industrial 3D NAND drives will support both SATA and NVMe interfaces, in addition to providing the advanced monitoring and management features of Virtium's Intelligent Storage Platform designed to provide easier drive qualification, deeper SSD insight, higher endurance, protection against unexpected power-loss, and advanced security, all at a lower cost per gigabyte than with 2D planar-based SSDs.

Virtium will begin rolling out its industrial 3D NAND-based SSDs in Q1 2019. They will be available in capacities from 60GB to 2TB; in SATA, NVMe, and USB interfaces; and in 1.8- and 2.5-inch, M.2, mSATA, Slim SATA, CFast and eUSB form factors. All the drives include Virtium's advanced technologies for data protection and solid-state storage monitoring: vtGuard[®], vtSecure[™], vtView[®] and vtTools[™]. These modules give a clear advantage for the optimizing, protecting, managing and qualifying of SSDs. Additionally, the new drives feature an optional AES-256 encryption engine with self-encrypting capabilities.

For more information on the new StorFly 3D-NAND-based SSDs, as well as Virtium's broad portfolio of solid-state storage and memory solutions, visit www.virtium.com, call 888.847.8486 or email sales@virtium.com.

About Virtium

Virtium manufactures solid-state-storage and memory solutions for the world's top industrial embedded OEM customers. The company designs, builds and supports its products in the USA, and provides a dedicated software team for custom storage solutions – all fortified by a network of global locations.

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