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## **Micron Paves the Way for Next-Generation Ultra High-Speed Serial NOR Flash Solutions**

### **Debuts New Twin-Quad (x8) Family and Collaborates with Winbond on Next-Generation Solutions**

**BOISE, Idaho, Nov. 12, 2014** - [Micron Technology, Inc.](#) (Nasdaq:MU), one of the world's leading providers of advanced semiconductor solutions, today announced its Twin-Quad family of Serial NOR Flash to provide customers with a migration path to double the bandwidth from existing quad-I/O solutions on the market today. In addition, Micron is collaborating with Winbond to enable open-standard multi-sourcing of Micron's next-generation, high-performance Serial NOR Flash solutions designed to meet the needs of emerging automotive, industrial and consumer applications for the connected world.

"Serial NOR Flash is at the heart of the Internet of Things (IoT) because it is used to store both the code for connectivity modules and the code for the application itself," said Alan Niebel, CEO at WebFeet Research. "With IoT applications estimated to reach more than 20 billion intelligent connected devices in 2018, Micron's Twin-Quad solution will meet customers' current throughput needs, and its next-generation solution will intersect with future NOR Flash requirements."

"Micron's Twin-Quad solutions will enable customers to double their bandwidth over today's quad-I/O devices while maintaining their current system clock frequencies, thereby eliminating the need to deal with more complex design methodologies and techniques needed to clock devices at higher frequencies, such as 166 MHz," commented Richard De Caro, director of NOR Flash for Micron's embedded business unit. "For those customers that need performance levels far above and beyond what Twin-Quad offers, Micron is developing next-generation, high-throughput solutions and is pleased that Winbond plans to participate in bringing functionally-compatible devices to market."

"Winbond is pleased to join Micron in development of next-generation high-throughput Serial NOR Flash solutions," stated Syed S. Hussain, director Flash Memory Marketing for Winbond Electronics Corporation America.

#### **Twin-Quad and Next-Generation Solutions**

Customers migrating to Twin-Quad can leverage their existing quad-I/O firmware and command sets, as well as their memory controller IP blocks, since Twin-Quad is essentially a combination of two quad-I/O devices in parallel. Chipset manufacturers and their customers that already employ two quad-I/O ports to interface with two separate quad-I/O devices simultaneously can instantly benefit from the introduction of Micron's Twin-Quad. With Twin-Quad, customers eliminate the need for a second, discrete quad-I/O device and save valuable board space while increasing system reliability. Twin-Quad devices support continuous read throughputs as high as 166 megabytes per second (MB/s) which enables an entire 256-megabit (Mb) device to be read in a mere 0.2 seconds, considerably faster than raw NAND Flash and most Parallel NOR Flash device performance. With these types of performance levels, Twin-Quad can be used either as an eXecute-in-Place (XiP) code storage solution or as a high-speed store-and-download (SnD), code shadowing solution.

The Twin-Quad family will sample 256Mb and 512Mb densities in December, followed by 1-gigabit (Gb) in January 2015.

Micron's next-generation, high-performance solution beyond Twin-Quad will take performance to an entirely new level, enabling XiP performance not seen today with low pin count Serial NOR Flash devices. With the ability to address "instant on" application requirements and by completely eliminating the need for code shadowing, system responsiveness improves and board space requirements, RAM requirements, system cost, and system complexity decrease. Very low initial read latencies and sustained, high-bandwidth read throughputs will make Micron's next-generation solution the ideal Flash memory for high-performance code execution and storage.

Micron has been actively engaged with key third-party chipset vendors to enable system support for both its Twin-Quad and next-generation devices. The chipset solutions will enable quick, easy and efficient customer adoption of Micron's high-transfer bandwidth products in a wide array of applications, ranging from everything such as digital imaging, wearable health/fitness products, and portable medical equipment to home energy/automation control, VoIP systems, and automotive information systems.

For more information on how Micron's Twin-Quad family of Serial NOR Flash can benefit embedded applications, contact [greg.wood@zenogroup.com](mailto:greg.wood@zenogroup.com)

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