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Z-RAM® Gen2 Ultra-Dense Memory Technology from ISi Significantly Improves Speed and Power

Ideal for both high-performance and battery-powered applications

SANTA CLARA, Calif., December 4, 2006 — Innovative Silicon Inc. (ISi), the developer of Z-RAM® high density memory intellectual property (IP), today announced availability of its second generation Z-RAM technology, named Z-RAM Gen2, which delivers significant performance improvements with greatly reduced power consumption. Simultaneously, the company is announcing that microprocessor giant Advanced Micro Devices, Inc. (NYSE:AMD), has contracted to purchase a license for Z-RAM Gen2, having contracted to purchase a license to the previous generation technology in December of last year.

Commented Craig Sander, corporate vice president, technology development at AMD: "We are very excited about Z-RAM Gen2. The combination of density, power, and performance coupled with its ability to work with our standard manufacturing processes makes it an extremely attractive option for use in our future microprocessors."

Z-RAM technologies achieve world-leading density and performance by using a single transistor as a memory bitcell, which is made possible by harnessing the Floating Body Effect found in circuits fabricated using SOI (silicon-on-insulator) wafers. Moreover, since Z-RAM takes advantage of a naturally-occurring SOI effect, Z-RAM works on SOI logic processes without requiring exotic process changes to build capacitors or other devices.

Z-RAM Gen2, invented by ISi's chief scientist, Dr Serguei Okhonin, stores significantly more charge in the memory bitcell. The additional charge provides an order-of-magnitude improvement in both cell margin—the difference between a "1" and a "0"—and in data retention time. The higher margin also provides much faster data read and write times, yet reduces power consumption significantly. As a result, Z-RAM Gen2 significantly broadens the range of applications that can take advantage of Z-RAM's density to both high-performance applications requiring greater than 1GHz operation (when pipelined), and low-power applications that require long-battery life.

"Our Z-RAM Gen2 technology is a real breakthrough," stated Mark-Eric Jones, president and CEO

of ISi. "We have seen no other technology that is remotely similar to it. Z-RAM was already the densest memory technology in the world, and with Z-RAM Gen2, it is now more than twice as fast and cuts memory read power by 75 percent and memory write power by a massive 90 percent."

"Z-RAM Gen2 also exhibits enormous flexibility," added Jeff Lewis, vice president of marketing. "The technology can be 'tuned' for a very wide range of speed/power operating points, from ultra-low power to very high performance." Z-RAM Gen2 achieves compelling specifications in a 65nm fabrication process:

- Ultra-high density: greater than 5Mbits per mm^2 at 65nm, and greater than 10Mbits per mm^2 at 45nm (1.4x – 2x denser than eDRAM and 5x-6x denser than SRAM)
- High performance random array access: greater than 400MHz (when optimized for performance)
- Very low active power consumption: under 10µW/MHz (when optimized for low-power)

Z-RAM Gen2 technology has been fabricated and validated as a complete memory at 90nm, and the bitcell has been validated on an additional five fabrication processes. Test chips are currently in fabrication at both the 65nm and 45nm process nodes. The company has demonstrated bitcell operation on smaller geometries and on the emerging multi-gate/FinFET devices and anticipates no difficulty in scaling to sub45nm process technologies.

Z-RAM Gen2 technology is available today from ISi. The technology can be procured as either a technology license, where ISi trains its customers so that they can build their own Z-RAM memory macros, or as an instance license, where ISi provides a memory instance in a specific process and designed for a specific application.

About Innovative Silicon

Innovative Silicon Inc. (ISi) delivers ultra high density memory IP for embedded SoC, MPU, and portable consumer applications. ISi's Z-RAM® technology is double the density of embedded DRAM and five times denser than embedded SRAM, making it the world's lowest-cost semiconductor memory solution. The company closed its first round of VC funding in 2003, completed its first 90nm megabit Z-RAM memory designs in 2004, its first 65nm designs in 2005 and its first 45nm designs in 2006. The company is incorporated in the USA with R&D in Lausanne, Switzerland. For more information see http://www.z-ram.com.

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