Spansion Announces World's First Single-chip 1 Gigabit NOR Flash Memory; First Samples Based on 90-Nanometer MirrorBit(TM) Technology
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Spansion LLC, the Flash memory venture of AMD (NYSE:AMD)and Fujitsu Limited (TOKYO:6702), today announced it is sampling theworld's first single-chip 1 gigabit (Gb) NOR Flash memory device tocustomers in the embedded market. Based on 90-nanometer (nm)MirrorBit(TM) technology, the 1 Gb MirrorBit GL device is the highestdensity, single-chip NOR Flash memory device on the market. It isdesigned for reliable code execution and data storage in a wide rangeof embedded applications including automotive navigation systems,communications infrastructure equipment, gaming and industrialcontrol. The 1 Gb MirrorBit GL device is the first based on theSpansion 90-nm MirrorBit process technology unveiled last month.
"Our innovative MirrorBit technology has enabled us to reach thisvery important milestone, with a product that meets the density,quality, cost structure and scalability needs of the diverse embeddedmarket," said Ian Williams, corporate vice president of marketing forthe Embedded Memory Division for Spansion. "High density single-chipNOR Flash memory products help customers lower their design cost,enhance end product features, and ensure reliable, fast codeexecution. In addition, with this added storage capacity, customerscan leverage a single chip for both code execution and data storage."

"Spansion's announcement of a 1 Gb 90-nm NOR device keeps thecompany in the density lead, where they have been since last year'sintroduction of a 512Mb chip," said Jim Handy, Semico's Director ofNonvolatile Memory Services. "It is important that they have designedthis part and the family as a whole for the needs of the embeddedmarket, which often gets overlooked in favor of Flash chips for cellphones."

The 1 Gb MirrorBit GL device extends the MirrorBit GL family,which also includes the industry's only single-chip 512 megabit (Mb)NOR Flash memory device in production. By scaling MirrorBit technologyto 90 nm and doubling the density of its NOR Flash memory, Spansionreduces component costs because it enables customers to use asingle-chip device, instead of multiple lower density discretesolutions or more costly multi-chip packages containing stacked lowerdensity die. Moreover, as an extension of its existing embeddedproduct families, the device allows customers to easily migrate to newhigh-density solutions, without having to engage in costly and complexsystem redesign.

Easier Migration with Spansion(TM) NOR Flash Memory Solutions

Spansion's new 1 Gb device augments the company's broad productoffering which includes densities ranging from 1 Mb up to 1 Gb.Backwards compatible with previous generation products (down to the 2Mb density), the device supports common software, pin-out andpackaging and can be rapidly deployed without requiring costly boardredesign. The 1 Gb MirrorBit GL is package and pin-out compatible withall MirrorBit GL-M (230 nm), MirrorBit GL-A (200 nm) and MirrorBitGL-N (110 nm) devices as well as legacy Fujitsu and AMD LV familymembers (back to the 320 nm lithography). Packaging is alsoJEDEC-compliant.

Technical Features and Benefits of the 1G MirrorBit(TM) GL Product

The Spansion 1 Gb MirrorBit product joins the Spansion GL familywhich includes densities ranging from 16 Mb up to 512 Mb - all inproduction today. The 1 Gb MirrorBit GL operates at 3.0 volts (Vcc),features a random read speed of 110 nanoseconds (ns), and offers apage read speed of 25 ns via an 8-word page buffer.

The new 1 Gb MirrorBit GL part enables users to either executecode directly out of the Flash memory or shadow into DRAM at highspeeds. The device supports industrial temperature ranges from -40 to+85 degrees Celsius. The 1Gb MirrorBit GL uses a NOR architecture thatis designed to deliver 100 percent good sectors, eliminate the needfor ECC and support a standard parallel interface, reducing systemcomplexity and cost.

Enhanced Security

For applications requiring advanced security, Spansion supportsAdvanced Sector Protection (ASP) technology on the 1 Gb MirrorBit GL.ASP provides robust and complete designer-defined security with 64-bitpassword protection for sensitive software algorithms or parameters.The feature can be used by designers to store, lock and protect codeor data stored on any sector of the device, or assign an electronicserial number (ESN) to their product. In some applications, thecentral office can use an ESN to identify their equipment remotely,control service levels and record access for billing purposes. Thefeature can help prevent malicious attacks and viruses, as well ashelp prevent unauthorized use of services.

Availability, Packaging and Pricing

Spansion is providing samples of the 1 Gb MirrorBit GL device nowto a select group of customers. Production is slated to begin in lateQ4. The part number for the 1 Gb MirrorBit GL is S29GL01GP. Theproduct is offered in 56-pin TSOP and 64-ball Fortified BGA packaging.It will be priced at approximately $18.50 in quantities of 10,000.

Spansion(TM) Solutions for the Embedded Market

Spansion offers embedded system designers the broadest selectionof Flash memory, including 5V, 3V and 1.8V products from 1 Mb to 1 Gbin packaged and Known Good Die (KGD) configurations. With hundreds ofFlash memory products and configurations to choose from, Spansion hasa solution to meet diverse customer needs.

Conventional Flash memory is offered using high-density MirrorBittechnology or floating-gate technology, in page or bust mode. Thesimultaneous read-write architecture can be combined with a burst- orpage-mode interface to improve performance of execute-in-placeapplications. And, with the new Serial Peripheral Interface (SPI)product line, Spansion offers embedded system designers a new way toachieve smaller footprint, lower power consumption, greaterreliability, and overall cost savings.

About MirrorBit(TM) Technology

MirrorBit technology is Spansion's innovative Flash memorytechnology that features high yields and low-cost structure comparedto traditional floating gate technology. MirrorBit is manufacturedusing a non-conductive storage element and uses 40 percent fewer ofthe most critical manufacturing steps than floating gate technologies,leading to higher yields and ultimately higher densities and higherperforming products produced cost effectively. Spansion(TM) 90nmMirrorBit technology is the foundation for a compelling high-densityFlash memory roadmap, featuring products combining the density,performance, reliability and cost structure required for wireless andembedded applications. In addition to the new 1 Gb GL device announcedtoday, Spansion is also developing a 1 Gb device based on itsMirrorBit ORNAND(TM) architecture. The first MirrorBit ORNAND productwill be designed to satisfy the data storage needs in wirelessapplications.

About Spansion

Spansion, the Flash memory venture of AMD and Fujitsu, is thelargest company in the world dedicated exclusively to developing,designing, and manufacturing Flash memory products. In fiscal

2004,Spansion's total net sales were approximately $2.3 billion. Thecompany offers the broadest NOR Flash memory portfolio in theindustry, for use in the wireless, automotive, networking,telecommunications and consumer electronics markets. The company'sportfolio is supported by a worldwide network of advancedmanufacturing facilities, system-level expertise and dedicated designsupport, and an unwavering commitment to our customers' success.Information about Spansion Flash memory solutions is available athttp://www.spansion.com.

Cautionary Statement

This release contains forward-looking statements concerning thatare made pursuant to the safe harbor provisions of the PrivateSecurities Litigation Reform Act of 1995. Investors are cautioned thatthe forward-looking statements in this release involve risks anduncertainties that could cause actual results to differ materiallyfrom the company's current expectations. Risks that the companyconsiders to be the important factors that could cause actual resultsto differ materially from those set forth in the forward-lookingstatements include the possibility that demand for the company's Flashmemory products will be lower than currently expected; that OEMs willincreasingly choose NAND-based Flash memory products over NOR-basedFlash memory products for their applications; that customer acceptanceof MirrorBit technology will not continue to increase; thatcompetitors may introduce new memory technologies that may make thecompany's Flash memory products uncompetitive or obsolete; that thecompany may not achieve its current product and technologyintroduction or implementation schedules; and that the company willnot be able to raise sufficient capital to enable it to establishleading-edge capacity to meet product demand and maintain marketshare. We urge investors to review in detail the risks anduncertainties in the company's Securities and Exchange Commissionfilings, including but not limited to the company's RegistrationStatement on Form S-1 and AMD's Quarterly Report on Form 10-Q for thequarter ended June 26, 2005.