TowerJazz and Crocus Advance on Disruptive Technology Developments, Milestone Reached in Magnetic Memory Implementation

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Emerging Non-Volatile Memories Projected to Increase from $210M in 2012 to $2B in 2018;

MRAM Projected to Be Biggest Market Segment, Growing from $25M to $1B

SANTA CLARA, Calif. & MIGDAL HAEMEK, Israel--(BUSINESS WIRE)--Jul. 17, 2013-- TowerJazz, the global specialty foundry leader and Crocus Technology, a leading provider of magnetically enhanced semiconductors, today announced a major breakthrough in a disruptive magnetic technology that has been co-developed with Crocus Technology. The technology now offers SRAM performance in terms of speed and power with Non-Volatile Memory (NVM) capabilities. This MRAM solution has demonstrated best-in-class performance and more than two billion cycles of program/erase were demonstrated on a 4M bit NVM product. The first market to be addressed is Battery Backed SRAM (BB-SRAM). Crocus' product provides the best characteristics of current BB-SRAM offerings -- fast access times, low power and unlimited write cycles -- without the need for cost, recharging and long-term disposal of a Lithium battery.

According to a 2013 "Emerging Non-Volatile Memories" report from Yole Développement, higher-density NVM chips will spawn many new applications and increase the business ten-fold in just five years. According to the report, the sizable growth in emerging NVM will be due to increased use in various markets including: industrial & transportation, enterprise storage, smart card, mobiles phones and mass storage.

Crocus has developed a robust, reliable and scalable MRAM process; its Magnetic Logic Unit™ (MLU) architecture is based on its patented, revolutionary self-reference Thermally Assisted Switching™ (TAS) technology which enables a number of previously unachievable breakthroughs in magnetic memory implementation. These include: highly robust secure embedded memory, ultra-high-temperature NVM operation (e.g., >200° C), order-of-magnitude higher density hardware-based table searches (e.g., content addressable memory), high density multi-bit storage, and scaling to sub-20nm manufacturing.

"Crocus and TowerJazz have collaborated for many years to develop this disruptive technology to address the growing and vast number of markets which can be served by emerging NVM such as cache memory for enterprise storage, MCUs for smart cards, industrial and automotive applications, mobile phones and more," said Bertrand F. Cambou, executive chairman of Crocus Technology. "TowerJazz is a known leader in NVM foundry solutions and has been the ideal partner to quickly bring leading edge commercial chip products to an eager and growing marketplace. Our collaboration will enable us to achieve high volume business for both companies with a long life on TowerJazz's platform."

"We are excited to bring this technology to volume production in Q4 this year and in so doing to be the first foundry with MRAM capability. At two billion program/erase cycles with one billion read at less than 35nsec on a 4Mb product, this technology outperforms any other available MRAM solution in the market," said Russell Ellwanger, CEO TowerJazz. "We have a long history and much expertise with NVM at TowerJazz having co-developed the initial Saifun NROM technology as well as organically holding strong NVM IP blocks such as Y-flash, a zero mask adder mid-size NVM. The Y-Flash is a powerful enabler that is in volume production with many of our customers and has been licensed to the largest in our industry. With this background, our team is qualified and realistic to state that the MRAM activity and the achievements with Bertrand and his Crocus team are revolutionary and offer innovative solutions to a number of our respective customers."

Crocus' proprietary MRAM technology solves all the known problems encountered in earlier MRAM developments. The company's technology has demonstrated its stability, reliability, data retention, endurance, and scalability, while exhibiting high speed, low power dissipation, and excellent resistance to external perturbation.

About Magnetic Random Access Memory (MRAM)
MRAM's unique characteristics make it particularly suitable to a wide variety of telecommunication, networking, computing and handheld applications currently using SRAM and/or flash memory technology. It is the only proven new memory technology providing non-volatility, unlimited-write-endurance, high-density, and symmetrical high-speed read & write. It is particularly well-suited to applications requiring high data reliability and high performance, and has the unique potential of becoming the universal embedded memory technology for systems-on-chip devices.

About Crocus Technology
Crocus Technology is a leading developer of a magnetically enhanced semiconductor technology for mobile security, embedded microcontrollers and applications requiring extreme operating conditions. Crocus' breakthrough proprietary Magnetic Logic Unit™ (MLU™) technology offers many advantages for applications demanding high speed, secure and robust performance at lower cost. In embedded security, Crocus' tamper-resistant MLUs read and write faster than flash memory and fit in a smaller footprint. Available in SIM and other embedded form factors, MLUs bring unprecedented levels of secure authentication for mobile payments, access control and other critical data transactions needing high-level security. In the embedded space Crocus' MLUs are effective in replacing most existing memory blocks with the added ability of operating in rugged environments, notably in high temperature electronics (400°C). Founded in 2004, Crocus is led by a senior management team with high-level industry experience from Motorola, AMD, Intel and Gemalto. It has US operations in Santa Clara, California and offices in Grenoble and Gardanne, France. For more information, please visit: http://www.crocus-technology.com/.

About TowerJazz
Tower Semiconductor Ltd. (NASDAQ: TSEM)(TASE: TSEM), its fully owned U.S. subsidiary Jazz Semiconductor Ltd., and its fully owned Japanese

subsidiary TowerJazz Japan, Ltd., operate collectively under the brand name TowerJazz, the global specialty foundry leader. TowerJazz manufactures integrated circuits, offering a broad range of customizable process technologies including: SiGe, BiCMOS, Mixed-Signal/CMOS, RFCMOS, CMOS Image Sensor, Power Management (BCD), and MEMS capabilities. TowerJazz also provides a world-class design enablement platform that enables a quick and accurate design cycle. In addition, TowerJazz provides (TOPS) Technology Optimization Process Services to IDMs and fabless companies that need to expand capacity. TowerJazz offers multi-fab sourcing with two manufacturing facilities in Israel, one in the U.S., and one in Japan. For more information, please visit www.towerjazz.com.

Safe Harbor Regarding Forward-Looking Statements
This press release includes forward-looking statements, which are subject to risks and uncertainties. Actual results may vary from those projected or implied by such forward-looking statements. A complete discussion of risks and uncertainties that may affect the accuracy of forward-looking statements included in this press release or which may otherwise affect TowerJazz's business is included under the heading "Risk Factors" in Tower's most recent filings on Forms 20-F, F-3, F-4 and 6-K, as were filed with the Securities and Exchange Commission (the "SEC") and the Israel Securities Authority and Jazz's most recent filings on Forms 10-K and 10-Q, as were filed with the SEC, respectively. Tower and Jazz do not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

Source: TowerJazz

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