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SST and UMC Announce Qualification of Embedded SuperFlash® Technology on 40 nm CMOS Process

SST SuperFlash non-volatile memory offers high endurance and low power for IoT applications

CHANDLER, Ariz., April 30, 2018 (GLOBE NEWSWIRE) -- The amount of data processed in Internet of Things (IoT) applications continues to increase, making low power and high density paramount to system designers. Many IC designers are turning to single-chip solutions to implement these features, saving total system costs by combining digital, analog, RF, microcontroller (MCU) and embedded Flash memory on a monolithic device. To meet these needs, Microchip Technology Inc. (NASDAQ: MCHP) subsidiary [Silicon Storage Technology](#) (SST), and United Microelectronics Corporation (NYSE: UMC) (TWSE:2303), a leading global semiconductor foundry, today announced the full qualification and availability of SST's embedded SuperFlash non-volatile memory on UMC's 40 nm CMOS platform. The 40 nm process features a more than 20 percent reduction in embedded Flash cell size and a 20-to-30 percent reduction in macro area over their 55 nm process.

The high endurance of embedded SuperFlash IP offers System on a Chip (SoC) customers extensive reliability and design flexibility combined with reduced power usage. SST's SuperFlash non-volatile memory technology is qualified for a minimum of 100,000 cycles, underscoring the technology's reliability. Ideal for edge computing in IoT devices, SST embedded SuperFlash technology features power benefits that derive from low-power standby and read operations, with core supply as low as 0.81V. SuperFlash also secures applications with code maintained on chip, which is the first step in preventing illegal access through hardware and software attacks.

"The 40 nm qualification represents another milestone in our partnership with UMC," said Vipin Tiwari, director of worldwide business development and marketing for SST, a wholly owned subsidiary of Microchip. "SuperFlash technology continues to be the most reliable embedded Flash memory in the semiconductor industry, providing customers across broad markets the low-power, high-density features their products depend on."

"With the positive response and success from customers who used SST's 55 nm SuperFlash technology, we are pleased to offer our customers another process platform with characteristics that fit a range of IoT applications," said Wenchi Ting, associate vice president of Specialty Technology division at UMC. "The addition of the fully qualified 40 nm SST SuperFlash will further enrich our IP portfolio of high-quality embedded memory solutions."

SST's SuperFlash technology complements UMC's embedded memory portfolio with high density and low-power IP. Combined with SST's inherent technology reliability, UMC's

flexible capacity and high-yield maturity for its 55 nm and 40 nm platform provide foundry customers the manufacturing support needed to build a range of product applications.

To date, more than 80 billion units have shipped with SST's embedded SuperFlash technology. SuperFlash technology is based on a proprietary split-gate Flash memory cell with the following capabilities:

- Low-power program, erase and read operations
- High performance with fast read access
- Good scalability from 1 μ m technology node to 28 nm technology node
- High endurance cycling up to 500,000 cycles
- Excellent data retention of over 20 years
- Good performance at high temperature for automotive-grade applications
- Immunity to Stress-Induced Leakage Current (SILC)

For more information on SST's patented and proprietary SuperFlash technology visit: www.sst.com/technology/SuperFlash-Overview.

About Silicon Storage Technology

Microchip Technology's SST subsidiary is a leading provider of embedded Flash technology. SST develops, designs, licenses and markets a diversified range of proprietary and patented SuperFlash memory technology solutions for the consumer, industrial, automotive and Internet of Things (IoT) markets. SST was founded in 1989, went public in 1995 (NASDAQ:SSTI), and was acquired by Microchip in April 2010. SST is now a wholly owned subsidiary of Microchip, and is headquartered in San Jose, Calif. For more information, visit the SST Web site at www.sst.com.

About Microchip Technology

Microchip Technology Inc. (NASDAQ:MCHP) is a leading provider of microcontroller, mixed-signal, analog and Flash-IP solutions, providing low-risk product development, lower total system cost and faster time to market for thousands of diverse customer applications worldwide. Headquartered in Chandler, Arizona, Microchip offers outstanding technical support along with dependable delivery and quality. For more information, visit the Microchip website at www.microchip.com.

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Editorial Contact:
Christie Haber
480-792-4386
christie.haber@microchip.com

Reader Inquiries:
1-888-624-7435



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