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Samsung Expands FD-SOI Process Technology Leadership and its Design Ecosystem Readiness

Samsung Foundry tapes out industry first eMRAM test chip based on 28nm FD-SOI process

SEOUL, South Korea – September 25, 2017 – Samsung Electronics Co., Ltd., the world leader in advanced semiconductor technology, today announced it has expanded its differentiated FD-SOI process technology leadership by offering derivatives that include RF and eMRAM. Samsung already established a full set of FD-SOI design enablement solutions with key ecosystem partners for the 28-nanometer (nm) FD-SOI (28FDS) process technology. By accomplishing industry first eMRAM testchip tape-out milestone on 28FDS process technology, Samsung Foundry has demonstrated its 28FDS readiness with eMRAM technology leadership with the long commitment and expertise of Samsung's semiconductor technology R&D capability.

"Samsung started mass production of its 28FDS process technology last year and reached the desired process maturity earlier than originally scheduled," said Ryan Lee, Vice President of Foundry Marketing at Samsung Electronics. "So far we have taped out more than 40 products based on the FD-SOI process for various customers. With the addition of RF and eMRAM on 28FDS and 18FDS technologies, we expect an increasing number of product engagements."

Samsung eMRAM is the newest addition to the family of embedded non-volatile memories and it offers unprecedented speed, power and endurance advantages.

"By adding only three layers in the back-end of the process, we can simply integrate the new eMRAM cells into the existing baseline FD-SOI process," said Gitae Jeong, Senior Vice President of the Advanced Technology Development Team at Samsung Electronics. "Combined with Samsung's memory technology leadership and its differentiated FD-SOI technology, we finally succeeded in incorporating eMRAM into various commercial applications"

"Samsung is working with NXP on a test chip to deliver eMRAM macro capability which is optimized for embedded processor integration and manufacturing." said Ron Martino, VP and GM for NXP's iMX Applications Processor product line. "This test chip is complete and will produce results in the 4th quarter. This work will further enable the vision of integrating diverse SOC components on a single SOC in a cost effective manner."

Samsung has completed its full set of 28FDS technology eco-system solutions with various eco-system partners including Cadence and Synopsys. Customers can access Samsung certified 28FDS reference flows from Cadence and Synopsys along with application-specific IP offerings.

"Through our collaboration with Samsung, our mutual customers can access the 28FDS certified, comprehensive Cadence RTL-to-GDS reference flow," said KT Moore, vice president, product management in the Digital & Signoff Group at Cadence. "The Cadence tools integrate the back-biasing and multi-bit flip-flop design optimization features included with the Samsung 28FDS process

technology, enabling designers to quickly and easily develop high-quality SoCs with optimal power and performance."

"Early joint collaboration on PDKs, reference flows and IP is a hallmark of the Samsung/Synopsys relationship," said Michael Jackson, corporate vice president of marketing and business development for the Design Group at Synopsys. "For Samsung's 28FDS, our mutual customers can design with confidence, knowing that it has been fully certified for Synopsys' Design Platform and Design Ware® IP.

Details on the recent updates to Samsung Foundry's cutting-edge process technology including FD-SOI technology roadmap and readiness will be presented at the Shanghai FD-SOI Forum on September 26th, 2017, by ES Jung, Executive Vice President and General Manager of Foundry Business at Samsung Electronics.

About Samsung Electronics Co., Ltd.

Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and memory, system LSI, foundry and LED solutions. For the latest news, please visit the Samsung Newsroom at http://news.samsung.com.

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