GLOBALFOUNDRIES Offers New Low-Power 28nm Solution for High-Performance Mobile and IoT Applications

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Technology is the first in the industry to provide design enablement support optimized to meet low power requirements of RF SoCs

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- GLOBALFOUNDRIES is the first pure-play foundry to develop 28nm HKMG technology complete with radio frequency (RF) modelling.
- Full design enablement and optimized RF process design kits (RF PDKs) offer design flexibility in core RF performance and functionality.
- RF technology provides critical functionality for SoC solutions, broadening the horizon for a wide range of wireless applications.

GF, a leading provider of advanced semiconductor manufacturing technology, today announced it is offering a 28nm High-k Metal Gate (HKMG) radio frequency (RF) process technology that will provide power-efficient solutions for highly integrated mobile applications and connected devices. Based on GF' 28nm Super Low Power (SLP) technology with HKMG, the 28nm-SLP-RF process includes a comprehensive set of design capabilities enabling chip designers to integrate critical RF system-on-chip (SoC) functionality into their products.

"The proliferation of connected devices and IoT consumer applications has created an opportunity and demand for RF-enabled chips," said Mike Mendicino, senior director of product management at GF. "GF' RF-enabled 28nm process lowers design barriers and enables a broader range of customers to accelerate time-to-volume of leading-edge RF SoCs."

The 28nm-SLP-RF process is built on the field-proven, cost-optimized 28nm-SLP HKMG process. Silicon results have demonstrated high-frequency performance (Ft ~ 310GHz) and low flicker/thermal noise providing chip designers flexibility in optimizing core RF performance and functionality in a cost-effective logic platform. The 28nm-SLP-RF process technology is designed for the next generation of connected devices that require low standby power and long battery life integrated with RF/wireless functionality. The technology is enabled with key RF features, including core and I/O (1.5V/1.8V) transistor RF models along with 5V LDMOS devices, which simplifies RF SoC design. For passive RF devices, 28nm-SLP-RF offers alternate polarity metal-oxide-metal (APMOM) capacitors up to 5V, deep n-well devices, diffusion, poly and precision resistors, inductors and an ultra-thick metal (UTM) layer. All RF-enabled devices are scalable, hardware verified across the entire operating range, and have met industry standard reliability qualification requirements. Volume production of the 28nm-SLP platform started in 2012.

GF' 28nm-SLP-RF technology utilizes the companies' production-proven, 28nm-SLP silicon-validated design flows, which include a complete set of libraries, compilers, and complex IP. The company has collaborated with leading companies in the EDA/IP ecosystem to deliver an optimized process design kit (PDK) that supports highly accurate RF SPICE models and comprehensive technology files that are integral to RF designs. GF' enhanced 28nm-SLP-RF PDK and verification method is available now.

GF will be exhibiting at booth #834 and will showcase innovative RF solutions through various presentations at the International Microwave Symposium from May 17-22, in Phoenix, Arizona.

ABOUT GF

GF is the world's first full-service semiconductor foundry with a truly global footprint. Launched in March 2009, the company has quickly achieved scale as one of the largest foundries in the world, providing a unique combination of advanced technology and manufacturing to more than 160 customers. With operations in Singapore, Germany and the United States, GF is the only foundry that offers the flexibility and security of manufacturing centers spanning three continents. The company's three 300mm fabs and five 200mm fabs provide the full range of process technologies from mainstream to the leading edge. This global manufacturing footprint is supported by major facilities for research, development and design enablement located near hubs of semiconductor activity in the United States, Europe and Asia. GF is owned by Mubadala Development Company. For more information, visit http://www.globalfoundries.com.

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