GLOBALFOUNDRIES Releases Performance-Enhanced 130nm SiGe RF Technology to Advance Next Generation Wireless Network Communications

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Optimized SiGe 8XP technology will enable low cost, high-performance mmWave 20 GHz products for a broad range of RF applications

Santa Clara, Calif., May 23, 2016 – GLOBALFOUNDRIES today announced a next-generation radio-frequency (RF) silicon solution for its Silicon Germanium (SiGe) high-performance technology portfolio. The technology is optimized for customers who need improved performance solutions for automotive radar, satellite communications, 5G millimeter-wave base stations and other wireless and wireline communication network applications.

GF's SiGe 8XP technology is the latest extension to the company's 130nm high-performance SiGe family and enables customers to develop RF solutions that deliver even faster data throughput, over greater distances, while consuming less power. The advanced technology offers an improved heterojunction bipolar transistor (HBT) performance with lower noise figure, higher signal integrity, and up to a 25 percent increase in maximum oscillation frequency (fMAX) to 340GHz compared to its predecessor, SiGe 8HP.

The complexity and performance demands of high bandwidth communication systems operating in the mmWave frequency bands have created the need for higher performance silicon solutions. This creates opportunities for high-performance SiGe solutions in the RF front end of 5G smartphones and other mmWave phased array consumer applications in addition to the current applications that depend on SiGe for high performance, such as the communications infrastructure base stations, backhaul, satellite and fiber optic networks.

"5G networks promise to bring a new level of innovation to RF SOC design to support high bandwidth data delivery and meet the demands for increased data rates and low latency applications," said Dr. Bami Bastani, senior vice president of GF RF business unit. "GF's SiGe 8HP and 8XP technologies offer an outstanding balance of performance, power, and efficiency that enable customers to develop differentiated RF solutions in next-generation mobile and infrastructure hardware."

"GF's SiGe technology leadership and comprehensive PDKs enable our designers to develop performance-optimized, differentiated millimeter wave solutions quickly," said Robert Donahue, Anokiwave CEO. "Utilizing SiGe 8XP allows us to take performance to even higher levels in future-ready mmWave solutions designed to help providers stay ahead of the demands for reliable connectivity, from anywhere, while handling exploding volumes of mobile data traffic."

With tomorrow's 5G deployments poised to drive a proliferation of base stations with smaller cell areas, SiGe 8HP and 8XP are designed to help offer a balance of value, power output, efficiency, low noise, and linearity at microwave and millimeter-wave frequencies for differentiated RF solutions in next-generation mobile infrastructure hardware and smartphone RF front ends. GF's SiGe 8HP and 8XP high-performance offerings enable chip designers to integrate significant digital and RF functionality while exploiting a more economical silicon technology base compared to gallium arsenide (GaAs) and higher performance than CMOS.

In addition to high performance transistors for efficient operation at mmWave frequencies, SiGe8HP and 8XP introduce technology innovations that can reduce the die size and enable area-efficient solutions. A new Cu metallization feature provides improved current carrying capabilities with five times the current density at a 100C, or up to 25 degrees C higher operating temperature at the same current density compared to standard Cu lines. In addition, GF's production-proven through-silicon-via (TSV) interconnect technology is available

SiGe 8XP design kits are available now. For more information on GF's 130nm SiGe high-performance technology solutions, visit our booth #1443 at the International Microwave Symposium from May 22-27, in San Francisco, California, or go online at globalfoundries.com/SiGe.

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 250 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 300mm fabs and 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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