# GLOBALFOUNDRIES Achieves More Than $1 Billion in Design Wins for 45RFSOI Solution for Mobile and Wireless Infrastructure Applications

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Enhanced transistor performance, greater RF-centric enablement and comprehensive turnkey testing/packaging services provide a truly differentiated solution that more than 20 clients are using for 5G/mmWave applications

Santa Clara, Calif., September 24, 2019 – GLOBALFOUNDRIES (GF), the world's leading specialty foundry, announced today at its annual Global Technology Conference (GTC) that since its launch in 2017, more than 20 clients representing more than $1 billion in design win revenue are now working with GF's enhanced 45RFSOI solution for 5G/mmWave mobile and wireless infrastructure applications.

Among the enhancements to GF's 45RFSOI solution are two new features, which add to the inherent advantages of SOI technology to deliver optimized, unparalleled RF performance:

- An enhanced power amplifier (PA) field-effect transistor (FET) feature provides 2X higher PA output power, resulting in a lower number of phased array antenna elements needed to achieve the system Effective Isotropic Radiated power (EIRP). The enhanced PA FET feature also enables users to integrate the PA, low-noise amplifier (LNA) switch and phase shifters for a 5G beamformer application on a single chip using the same technology. The result is a more compact design at lower cost resulting from fewer components and less board space for 5GmmWave fixed wireless and mobility applications. Compact design coupled with cost efficiency is an extremely important requirement for slim and sleek smartphone designs.
- A higher level of IP and RF-centric enablement including the Virtuoso RelXpert Reliability Simulator, a simulation tool from Cadence Design Systems, Inc., which is used to analyze potential FET device degradation across a user-defined set of use cases to ensure that specified performance and reliability targets are met for these critical applications. The result is fewer design cycles, thus lowering engineering costs and enabling faster time-to–market, as well as achieving increased device reliability confidence. GF's 45RFSOI PDK models are now qualified on this tool.

"Meeting tight design schedules while keeping development costs down is no easy task when it comes to exceedingly complex 5G/mmWave requirements," said Wilbur Luo, vice president, product management in the Custom IC & PCB Group at Cadence Design Systems, Inc. "We take a holistic approach to integrated circuit design enabling SoC design excellence, and we're very focused on providing differentiated solutions that truly benefit our customers. Cadence provides the Virtuoso RelXpert Reliability Simulator, which is used by GF for reliability model development, and Spectre native reliability, which is used for circuit design and verification for reliability analysis. Both of these tools are now tightly integrated with the PDK for GF's 45RFSOI solution."

GF has a long history of high-frequency RF wafer and module test development and implementation experience. This experience, along with the industry's most differentiated RF technology platform spanning advanced and established technology nodes, helps clients develop 5G connectivity solutions for next-generation products. For example, through GF's turnkey testing and packaging services, GF can perform accurate phase measurements between antenna ports for phased array multi-RF channel designs of 16, 32, 64 or more antenna elements, enabling clients to rapidly ramp and deploy radio access infrastructure necessary for high-bandwidth 5G cellular systems.

Moreover, GF's engagement model provide clients with comprehensive package design, thermal and electrical modeling services, in partnership with leading outsourced assembly and test companies (OSAT).

"At GF, we continue our commitment to providing differentiated RF platforms, feature sets and solutions that allow our clients to build innovative products for evolving high-growth wireless applications," said Dr. Bami Bastani, senior vice president and general manager of Mobile and Wireless Infrastructure, SBU at GF. "The numerous design wins we've received for our enhanced 45RFSOI solution early in its lifecycle reflect the high value our clients place on our RF solutions."

**About GF**

GLOBALFOUNDRIES (GF) is the world's leading specialty foundry. We deliver differentiated feature-rich solutions that enable our clients to develop innovative products for high-growth market segments. GF provides a broad range of platforms and features with a unique mix of design, development and fabrication services. With an at-scale manufacturing footprint spanning the U.S., Europe and Asia, GF has the flexibility and agility to meet the dynamic needs of clients across the globe. GF is owned by Mubadala Investment Company. For more information, visit globalfoundries.com.

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