



GLOBALFOUNDRIES Accelerating Innovation in IoT and Wearables with Adaptive Body Bias Feature on 22FDX Platform

October 15, 2020

GF customers working in IoT, wearables, RF, and edge computing are leveraging ABB to further boost the efficiency of their designs by utilizing the 22FDX platform's ultra-low power and low leakage capabilities

Dresden, Germany, October 15, 2020 – GLOBALFOUNDRIES® (GF®), the world's leading specialty foundry, announced today at its Global Technology Conference (GTC) EMEA event that it is accelerating innovation in the IoT and wearables markets with the specialized Adaptive Body Bias (ABB) feature of its industry-leading 22FDX® platform.

The ABB feature affords designers significantly more precision when fine-tuning the transistor threshold voltage of a circuit, enabling them to more effectively optimize the performance, energy efficiency, area, and reliability of a chip to meet the needs of a specific application. GF customers working in IoT, wearables, hearables, RF, and edge computing are leveraging ABB to further boost the efficiency of their designs by utilizing the 22FDX platform's ultra-low power and low leakage capabilities.

"GreenWaves' GAP IoT Application Processors are giving developers the ability to integrate sophisticated ultra-low latency, signal processing and artificial intelligence into highly energy constrained devices such as hearable and IoT sensor products," said **Loic Lietar, CEO of GreenWaves Technologies**. "Our GAP9 IoT application processor is built on GF's 22FDX platform. Our ability to take advantage of 22FDX's adaptive body bias feature to narrow our sign-off margins was a significant contributing factor to optimizing our design for ultra-lower power consumption, toward our goal of empowering developers to bring the next generation of intelligent devices to market."

"Perceive's edge inference processor, Ergo, brings the power of large neural networks to IoT devices while enhancing security and privacy. Thanks to its small size and ultra-high power efficiency, Ergo enables longer battery life, produces less heat, and allows for innovative product designs and packaging," said **Steve Teig, CEO of Perceive**. "GF's 22FDX platform has a tremendous amount of horsepower, and its power advantages, low leakage, and adaptive body bias feature make it an excellent choice for IoT applications like ours."

The ABB feature is another way GF is extending the value, high performance, ultra-low power, and broad integration capabilities of its 22FDX platform. To date, GF's 22FDX platform has realized \$4.5 billion in design wins, with more than 350 million chips shipped to customers around the world.

"With its best-in-class performance, power consumption, and broad feature integration capability, GF's differentiated 22FDX platform is clearly the solution of choice for designers and innovators working in IoT, wearables, Edge AI, and other exciting applications," said **Mike Hogan, senior vice president and general manager of Automotive, Industrial and Multi-market at GF**. "Empowering these customers to take advantage of the platform's body biasing, and further increase the performance, efficiency, and battery life of their devices, is another example of how GF is enabling the industry to advance the frontier of connectivity toward a fully realized, global IoT."

This wider use of ABB features is made possible and supported by GF's strong ecosystem of IP and EDA tool partners, and body bias features are included in the 22FDX process design kit (PDK). Most mature, widely used modeling, design, and verification tools are readiness-tested to empower GF customers to leverage the 22FDX platform's proven ABB features.

"GF's ecosystem partners play a critical role in enabling designers to seamlessly and effectively implement ABB in their chips," said **Mike Cadigan, senior vice president of Customer Design Enablement at GF**. "Through innovative IP and EDA tool support, GF's ecosystem partners have created block IPs and end-to-end enablement flows for ABB, as well as static body bias, across a range of applications."

Partner Supporting Quotes:

"This latest collaboration between GF and Cadence resulted in two successful test chips based on the GF 22FDX platform with its differentiated ABB technology," said **Sanjive Agarwala, Corporate VP, R&D, IP Group at Cadence**. "We jointly completed one test chip project, which utilized the Cadence digital full flow for power, performance and area and throughput benefits. We completed a second test chip project, which used the Cadence Tensilica HiFi 5 and Fusion F1 for high performance benefits in conjunction with the digital full flow. Both of these 22FDX projects resulted in reduced turnaround times, which is crucial when designing for high-growth markets like IoT, voice processing and always-on sensor fusion segments."

"Our goal is to allow fabless makers to embed in weeks, instead of months, a robust and energy efficient power management system thanks to our SPIDER Design Platform. It includes the foundry-sponsored ABB IP, made to work with the conventional standard-cells, memories and design flow. Only a few months after its commercialization, the first of our already many users are now starting volume production. The next ABB IP will be ISO26262-ready to empower automotive applications," said **Philippe**

Berger, Chairman of Dolphin Design.

"Driven by our design service experience, we developed ABX as easy-to use turnkey ABB solution that allows seamless integration into existing design flows. This is achieved by encapsulating corner specific body bias voltages, reflecting the characteristic of our ABB generator, directly in the IP characterizations," said **Holger Eisenreich, CEO of Racyics**.

"The fast-growing IoT and wearables markets demand ultra-low power SoCs to extend battery life from days to weeks," said **John Koeter, senior vice president of marketing and strategy for IP at Synopsys**. "By providing a portfolio of silicon-proven, low-power DesignWare® Foundation IP and optimized design flow for GF's 22FDX process, Synopsys enables our mutual customers to leverage GF's specialized ABB features to deliver high-performance and energy-efficient SoCs with significantly less risk."

About GF

GLOBALFOUNDRIES (GF) is the world's leading specialty foundry. GF delivers differentiated feature-rich solutions that enable its customers 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 customers across the globe. GF is owned by Mubadala Investment Company. For more information, visit www.globalfoundries.com.

Contact:

Michael Mullaney
GLOBALFOUNDRIES
518-305-1597
michael.mullaney@globalfoundries.com