

Brite Semiconductor, SMIC and Synopsys Collaborate to Deliver Low Power Platform for the Internet of Things

IoT Platform Accelerates Designs for IoT Edge Devices with Synopsys Silicon-Proven ARC Data Fusion IP Subsystem, Brite ASIC Design Services and SMIC 55-nm Ultra-Low Power Process

MOUNTAIN VIEW, Calif., Sept. 18, 2017 /PRNewswire/ --

Highlights:

- The IoT platform based on Synopsys' ARC Data Fusion IP Subsystem and interface IP, implemented by Brite's expert design services for SMIC's 55-nm ultra-low power process accelerates IoT designs
- Collaboration resulted in successful test chip silicon, demonstrating significant dynamic and leakage power reductions using SMIC's 55ULP process
- The platform is optimized for functionality common in IoT designs such as voice recognition, face detection, and sensor fusion

Brite Semiconductor ("Brite"), Semiconductor Manufacturing International Corporation ("SMIC"; NYSE: SMI; SEHK: 0981.HK) and Synopsys (Nasdaq: SNPS) today announced a collaboration resulting in an IoT platform that enables designers, system integrators and OEMs to accelerate and differentiate their next-generation IoT systems. The platform consisting of Synopsys' DesignWare® ARC® Data Fusion Subsystem with ARC EM9D processor, USB, I3C and Mobile Storage IP solutions was integrated by Brite Semiconductor design services using SMIC's 55-nm ultra-low power (ULP) process. The collaboration resulted in the successful development of a test chip demonstrating up to 45 percent reduction in dynamic power and 70 percent reduction in leakage power compared to SMIC's 55LL process technology. This platform provides customers with a proven starting point for creating their IoT designs and enables the integration of customized functions on demand, while lowering costs. In addition, Synopsys is offering an [ARC IoT Development Kit](#) based on the platform to ease software development for ARC processor-based systems.

Brite's leading design services provide turnkey solutions for ASIC and SoC development on SMIC's advanced 55-nm process. Through this collaboration, Brite implemented a design that can be used as a basis for customers to tailor their target application. These services enable chip developers to significantly speed time to market for IoT applications including smart home, wearable devices, smart city, and industrial.

"As a leading ASIC design solution provider, Brite worked closely with Synopsys and SMIC to develop an ARC-based IC optimized for the IoT on SMIC's 55-nm ULP process," said Larry Lee, vice president of marketing and sales, at Brite Semiconductor. "Our mutual customers can now leverage a proven design and design team to develop their own SoC, customized for their specific application requirements, and get it to market in record time."

Together with partners in the IC ecosystem, SMIC helps design houses develop chips that can be used in a range of IoT applications. By reducing products' operating voltage and optimizing the device and IP design, designers can greatly reduce both dynamic and static power consumption of products implemented on SMIC's 55-nm ULP process, while lowering overall system costs.

"SMIC's 55-nm process, which is in production, was developed specifically to address the stringent power and cost requirements of advanced IoT designs," said Tian-Shen Tang, EVP of Design Service at SMIC. "By collaborating with Brite and Synopsys on the IoT Platform, we are enabling the design community to leverage our newest low power 55-nm ULP foundry process with Synopsys' leading DesignWare IP and ARC processor-based subsystem solutions to meet their tight schedules and lower system cost."

Synopsys' ARC Data Fusion IP Subsystem, which is at the core of the IoT platform, is a complete, pre-verified hardware and software solution for integration into a wide range of IoT applications requiring energy-efficient processing. Tightly coupled interface peripherals combined with the included audio processing software library simplify the implementation of voice and speech functionality in a range of applications such as far-field voice user interfaces and hands-free voice commands. In addition, the standard-compliant MIPI I3C controller enables high data rate transmission for the integration of multiple sensors in an SoC. The integrated DesignWare USB 2.0 controller is silicon-proven and shipping in billions of devices.

"The advent of 'always-on' IoT applications needing sensor fusion, audio playback and voice detection functionality is requiring systems to be optimized for the lowest power consumption possible," said John Koeter, vice president of marketing for IP at Synopsys. "Our collaboration with Brite and SMIC on the IoT IP Platform provides SoC designers, system integrators, OEMs and software developers with a proven solution that enables efficient development of their next-generation, low-power chipsets."

Availability

The DesignWare ARC Data Fusion Subsystem, USB Controller, I3C and Mobile Storage IP are available today from Synopsys. The SMIC 55ULP process is now in production. Brite's turnkey design services for the IoT platform are available now.

About Brite Semiconductor

Brite Semiconductor is a world-leading ASIC design solution provider, targeting ULSI ASIC/SoC chip designs on SMIC advanced 55nm/40nm/28nm process technologies and turn-key solutions. Brite Semiconductor provides flexible one-stop services from RTL/netlist to chip delivery, and seamless, cost effective, and low-risk solutions to customers. Brite Semiconductor was founded in 2008 by venture capital firms from China and abroad, and collaborated with Semiconductor Manufacturing International Corporation (SMIC) as strategic partners in 2010. Headquarter in Shanghai, Brite has two subsidiaries, Beijing Brite IP and Hefei Brite Technology, and has set up offices in US, Europe, Japan and Taiwan to provide services to customers. For more information, please visit www.britesemi.com

About SMIC

Semiconductor Manufacturing International Corporation ("SMIC") (NYSE: SMI; SEHK: 981) is one of the leading semiconductor foundries in the world and the largest and most advanced foundry in mainland China. SMIC provides integrated circuit (IC) foundry and technology services at 0.35-micron to 28-nanometer. Headquartered in Shanghai, China, SMIC has a 300mm wafer fabrication facility (fab) and a 200mm mega-fab in Shanghai; a 300mm mega-fab and a second majority owned 300mm fab under development for advance nodes in Beijing; and 200mm fabs in Tianjin and Shenzhen. SMIC also has marketing and customer service offices in the U.S., Europe, Japan, and Taiwan, and a representative office in Hong Kong. For more information, please visit www.smics.com

About Synopsys

Synopsys, Inc. (Nasdaq: SNPS) is the Silicon to Software™ partner for innovative companies developing the electronic products and software applications we rely on every day. As the world's 15th largest software company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and is also growing its leadership in software security and quality solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing applications that require the highest security and quality, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at www.synopsys.com

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