Synopsys Accelerates Development of IoT Designs with Industry's Most Comprehensive IP Portfolio

Optimized DesignWare IP Addresses Security, Wireless Connectivity, Energy Efficiency and Sensor Processing Requirements of IoT Applications

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Highlights:

- Broad IP portfolio for IoT designs includes logic libraries, memory compilers, non-volatile memory, data converters, wired and wireless interface IP, security IP, processor cores and a sensor and control IP subsystem
- IP specifically designed for ultra-low power 40-nm and 55-nm process technologies minimizes power consumption and extends battery life
- Low-power 40-nm integrated IoT IP platform, developed in collaboration with TSMC, delivers the energy-efficiency and area improvements for always-on processing required for sensor fusion and voice recognition applications
- The embARC Open Software Platform and ARC Access Program provides open-source and commercial software development tools, drivers, operating systems and middleware

Synopsys, Inc. (Nasdaq: SNPS) today announced a comprehensive portfolio of IP optimized to address the security, wireless connectivity, energy-efficient and sensor processing requirements for a wide range of Internet of Things (IoT) applications such as wearables, smart appliances, metering and wireless sensor networks. The DesignWare® IP portfolio for the IoT includes power- and area-efficient logic libraries, memory compilers, non-volatile memory (NVM), data converters, wired and wireless interface IP, security IP, ultra-low power processor cores and an integrated sensor and control IP subsystem. In addition, Synopsys' embARC Open Software Platform offers online access to open-source and commercial drivers, operating systems and middleware to accelerate development of application software. By providing the industry's broadest portfolio of IP and software solutions optimized for the IoT, Synopsys enables developers to accelerate development of IoT systems.

"Our close collaboration with Synopsys on many generations of TSMC process technologies has enabled us to provide our mutual customers with the IP they need to meet the performance, power and area targets for their applications," said Suk Lee, senior director of Design Infrastructure Marketing Division at TSMC. "The joint development of the low-power, integrated IoT IP platform on TSMC's 40-nanometer process is another example of how Synopsys and TSMC help designers achieve their project goals and quickly ramp into production.

"The worldwide Embedded and IoT market is poised for exponential growth over the next five years, with embedded and intelligent connected systems expected to reach 11.5 billion unit shipments* annually in 2019," said Mario Morales, program vice president, Enabling Technologies and Semiconductors at IDC, "Technology suppliers than can offer a comprehensive IP portfolio, from essential hardware, software tools, security, to relevant ecosystem support for applications, will be critical to helping the design community address the growing presence of an emerging set of vendors focused on the next growth market."

Re-architected and Optimized IP Solutions for the IoT

- Near threshold, ultra-high density logic libraries reduce power consumption, while thick oxide logic libraries deliver low leakage for always-on functions
- High-density, low voltage embedded memory compilers incorporate the smallest bit cells with integrated test and repair supporting embedded flash
- Power- and area-optimized 12 bit/14-bit SAR data converters, USB 1.1 and 2.0, MIPI CSI-2 and DSI, and NVM IP enable implementation of required sensor, data and connectivity functions, while lowering overall system cost
- Silicon-proven Bluetooth® Smart IP implements the Bluetooth 4.0, 4.1 and 4.2 low energy standards and supports down to one-volt operation for extended battery life
- Security IP including Public Key Accelerators, True Random Number Generators, security protocol accelerators, as well as secure hardware root of trust, secure boot and middleware software provide protection against evolving threats in the IoT
- Highly configurable 32-bit DesignWare ARC® embedded processors and EV vision processors enable designers to tailor each ARC processor instance to meet specific performance, power and area requirements of the IoT application
- Pre-validated, tightly integrated sensor and control IP subsystem delivers significant power savings and orders of magnitude reduction in cycle count with application-specific hardware accelerators

Software Development Tools and Ecosystem

Synopsys provides a comprehensive suite of commercial and open-source tools and software to accelerate the development of ARC-based embedded systems for the IoT. This includes Synopsys' MetaWare Development Toolkit and MQX RTOS, as well as support for the GNU toolchain and Linux kernel. The embARC Open Software Platform gives ARC software developers online access to a comprehensive suite of free and open-source software commonly used to develop IoT applications such as MQTT, CoAP, FreeRTOS and Contiki OS from the embarc.org website. The website also provides documentation and a forum-based community where developers can share resources, expertise and code to speed deployment of ARC-processor-based embedded systems. Synopsys also partners with embedded hardware and software vendors to provide developers with commercial tools, drivers, operating systems and middleware through the ARC Access Program.

"As the IoT market continues to evolve, designers are faced with the challenge of addressing the security, wireless connectivity, cost constraints, and energy-efficiency needed for intelligent devices that are at the heart of IoT products," said John Koeter, vice president of marketing for IP and prototyping at Synopsys. "By providing the industry's most comprehensive IP portfolio specifically architected for the IoT with supporting software, tools and ecosystem, Synopsys helps developers achieve their design goals and differentiate in this fast-growing market."

Availability & Resources
The DesignWare IP portfolio for the IoT is available now.

About DesignWare IP
Synopsys is a leading provider of high-quality, silicon-proven IP solutions for SoC designs. The broad DesignWare IP portfolio includes logic libraries, embedded memories, embedded test, analog IP, wired and wireless interface IP, security IP, embedded processors and subsystems. To accelerate prototyping, software development and integration of IP into SoCs, Synopsys' IP Accelerated initiative offers IP prototyping kits, IP software development kits and IP subsystems. Synopsys' extensive investment in IP quality, comprehensive technical support and robust IP development methodology enables designers to reduce integration risk and accelerate time-to-market. For more information on DesignWare IP, visit https://www.synopsys.com/designware

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 16th 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 quality and security solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing applications that require the highest quality and security, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at www.synopsys.com.

*Worldwide Embedded and Intelligent Systems 2014-2019 Forecast (IDC Document #252046)

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