Synapse and Silicon Labs Introduce Complete Solution for Wireless Mesh Networking

April 27, 2010 12:00 PM EDT

SAN JOSE, Calif., Apr 27, 2010 (BUSINESS WIRE) -- Synapse Wireless(R), Inc. and Silicon Laboratories Inc. (NASDAQ: SLAB) today introduced a jointly developed wireless mesh networking solution that combines the award-winning Synapse SNAP(R) network operating system with Silicon Labs' Si1000 wireless microcontroller (MCU). The combined software/hardware solution - the Synapse RF Engine(R) module - makes it easy to deploy scalable, ultra-low-power, small-footprint wireless mesh networking for a wide range of applications including smart metering, building automation, commercial lighting control, personal medical devices, asset tracking systems and more.

The SNAP network operating system provides a high-performance wireless mesh networking protocol that supports Internet-enabled, wireless machine-to-machine communications, and offers an embedded Python interpreter for easy application development. Providing the intelligence behind the Synapse RF Engine, SNAP runs on Silicon Labs' Si1000 wireless MCU, which combines an ultra-low-power processor core with a high-performance sub-GHz RF transceiver delivering high-bandwidth and extended-range wireless connectivity. The simple-to-use module streamlines the process of creating and deploying wireless networks. Synapse is demonstrating the RF Engine at the company's Booth #1926 at the Embedded Systems Conference - Silicon Valley, April 26 -29.

SNAP allows wireless applications to be developed quickly and easily using Python's English-like scripting language instead of complex embedded programming. The developer simply adds the application to SNAP, residing on the RF module, over-the-air. No embedded wireless programming experience is required to develop applications and deploy them to physical SNAP nodes. Instead of being burdened with the underlying complexities of wireless mesh networking, the developer can focus on getting the application to market quickly.

Both the Si1000 wireless MCU and SNAP deliver exceptional performance for power- and cost-sensitive wireless applications within a small hardware and software footprint. The intelligent SNAP network operating system enables nodes to join the mesh network instantly. The software's over-the-air programming and Python interpreter ensure easy, fast and flexible application development.

The Synapse RF Engine provides a turnkey hardware/software solution that developers can deploy immediately in their end products. It also offers an easy-to-use development platform for system engineers who want to migrate their wireless designs to high-volume applications using the Si1000 MCU running SNAP as embedded firmware.

"The collaboration between Silicon Labs and Synapse has resulted in a best-in-class, sub-GHz wireless networking solution that combines the industry's lowest power wireless MCU with the sophisticated networking and Internet connectivity capabilities of SNAP," said Wade Patterson, Synapse Founder, President and CEO. "The jointly developed wireless platform will streamline the development of cost-effective and energy-efficient mesh networks."

Developers using the Si1000-based Synapse RF Engine will have access to the full product and service offerings from Synapse. This includes custom design services for solving tough, engineering challenges in OEM product design; the Synapse Portal(R) wireless application development environment for ease in network management and rapid application development; and SNAP(R) Connect, for seamless integration to the Internet.

"The combination of the Si1000 wireless MCU and SNAP provides a comprehensive mesh networking solution for ISM band applications in the sub-GHz range," said Mark Thompson, vice president of embedded mixed-signal products at Silicon Labs. "Using this combined hardware/software solution, developers can get their wireless applications up and running quickly and easily while benefiting from the power-efficient, battery-saving capabilities of the Si1000 MCU and its exceptional wireless range and performance."

Synapse SNAP Network Operating System

Synapse's SNAP network operating system is an Internet-enabled, IEEE 802.15.4-based, instant-on, multi-hop, mesh network, software solution designed to cost-effectively run efficiently over a range of popular microprocessors and microcontrollers. SNAP has a very small memory footprint of only 45 kB, thereby leaving more space for user applications. SNAP can support up to 16 million nodes in a single network. Since these are peer-to-peer mesh networks, there is no single point of failure: any node can talk directly to any other node that is in range, and any node can talk indirectly to any other node via intermediate nodes - SNAP networks are self-healing. Users can interactively develop applications using a high-level English-like language called Python. No embedded programming experience is required. Synapse currently has more than 900 registered SNAP users.

Silicon Labs Si1000 Wireless MCU

The Si1000 wireless MCU, a member of the Si10xx family, combines a 25 MHz 8051 core, EZRadioPRO(R) sub-GHz RF transceiver, 64 kB of flash and a 10-bit ADC - all in a compact 5 mm x 7 mm package. As the industry's only sub-GHz 8-bit wireless MCUs, the Si10xx family offers market-leading RF performance with the highest output power and sensitivity and lowest power wake-up transition. The Si10xx family's integrated power and low-noise amplifiers enable an RF link budget of greater than 140 dB without active external elements, resulting in extended range, higher bandwidth and lower power consumption. The industry's most power-efficient wireless MCU solution, the Si10xx family provides the lowest current in common modes of operation. The wireless MCUs offer the lowest active-mode current consumption (160 microamps per MHz). In sleep mode, they consume only 315 nanoamps using the internal low frequency RTC. In deep-sleep mode, they can operate on as little as 25 nA with full RAM retention.

Pricing and Availability

The Si1000 MCU-based Synapse RF Engine module is available today from Synapse and MSRP priced at $29 (USD) for 1-unit quantities (volume discounts available). The Synapse SNAP evaluation download for the Si1000 MCU is also available today from Synapse. For more information and to order the module or download SNAP, visit www.synapse-wireless.com.

For additional information about Silicon Labs' Si1000 wireless MCU and to purchase samples and development tools, please visit www.silabs.com/pr/wirelessmcu.

About Synapse Wireless, Inc.

Synapse Wireless, Inc., located in Huntsville, Alabama, is driving innovation in the machine-to-machine (M2M) communication market. This market is projected to grow to $14 billion by 2013. Synapse provides intelligent, wireless control and monitoring based on the SNAP(R) network operating system. Synapse's Portal(TM) and SNAP(R) Connect provide a complete software development environment for easy application development and fast time to revenue. Synapse RF Engine(R) modules have achieved ZigBee(R) Compliant Platform (ZCP) certification. Synapse Design Services provides comprehensive design and implementation support for OEMs and partners. For more information, visit: Synapse-Wireless.com

About Silicon Laboratories Inc.

Silicon Laboratories is an industry leader in the innovation of high-performance, analog-intensive, mixed-signal ICs. Developed by a world-class engineering team with unsurpassed expertise in mixed-signal design, Silicon Labs' diverse portfolio of highly-integrated, easy-to-use products offers customers significant advantages in performance, size and power consumption. These patented solutions serve a broad set of markets and applications including consumer, communications, computing, industrial and automotive.

Headquartered in Austin, TX, Silicon Labs is a global enterprise with operations, sales and design activities worldwide. The company is committed to contributing to our customers' success by recruiting the highest quality talent to create industry-changing innovations. For more information about Silicon Labs, please visit www.silabs.com.

Cautionary Language

This press release may contain forward-looking statements based on Silicon Laboratories' current expectations. These forward-looking statements involve risks and uncertainties. A number of important factors could cause actual results to differ materially from those in the forward-looking statements. For a discussion of factors that could impact Silicon Laboratories' financial results and cause actual results to differ materially from those in the forward-looking statements, please refer to Silicon Laboratories' filings with the SEC. Silicon Laboratories disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

SOURCE: Silicon Laboratories Inc.

Synapse Media Contacts:
Bryan Floyd, 256-852-7888 x106
Vice President, Synapse Wireless
bryan.floyd@synapse-wireless.com
or
Cain Communications
Susan Cain, 503-538-2747
scain@caincom.com
or
Silicon Labs Media Contact:
Dale Weisman, 512-532-5871
Global Public Relations Manager, Silicon Labs
dale.weisman@silabs.com