

Silicon Labs Greens Up Smart Home/Smart Meter Market with Lowest Power Wireless Microcontrollers

Single-Chip Solution Ideal for Battery-Powered Systems with RF Connectivity

NUREMBERG, Germany, Mar 01, 2010 (BUSINESS WIRE) -- Answering the need for energy efficiency in home automation and metering, [Silicon Laboratories Inc.](#) (NASDAQ: SLAB), a leader in high-performance, analog-intensive, mixed-signal ICs, today introduced the industry's lowest power single-chip wireless microcontrollers (MCUs). Silicon Labs' new ultra-low-power Si10xx wireless MCU family addresses the power and RF requirements of battery-operated home automation systems, smart meters, in-home utility monitors and security systems.

The demand for smart energy technology continues to grow each year as government initiatives mandate upgrades to the grid, as well as adding intelligence to meters that measure water, gas and heat. The market for smart home products, such as lighting and HVAC controls, in-home utility monitors and home security systems, is also on the rise, driven in part by the desire to conserve energy and by the expansion of home automation services and standards-based wireless technologies.

Today's smart home/smart grid applications merge wired/wireless connectivity and embedded control with power-efficient design to maximize battery life. The ultra-low-power Si10xx wireless MCU family is ideally suited for these battery-operated systems with RF links, as well as for many other embedded wireless applications that require ultra-low power consumption.

The Si10xx wireless MCUs combine a 25 MHz 8051 core, [EZRadioPRO](#)(R) sub-GHz RF transceiver, up to 64 kB of flash and up to 12-bit ADC - all in a compact 5 mm x 7 mm package. The Si10xx family is the industry's most power-efficient single-chip wireless MCU solution, providing 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 615 nanoamps with an active 32.768 kHz real-time clock (RTC) and down to 315 nanoamps with an active RTC and a low frequency oscillator (LFO). In deep-sleep mode, they can operate on as little as 25 nA with full RAM retention.

The Si10xx family's ultra-low-power architecture and fast wake-up time (2 microseconds) greatly extends battery life in both lithium and alkaline battery applications. The Si10xx architecture also features a dc-dc boost converter designed to supply large loads with extremely high efficiency. The dc-dc converter supplies power needed for periods of RF transmission and reception with efficiencies of up to 90 percent. As a result, developers can design embedded wireless systems capable of 25 percent longer battery life over alternative solutions with no degradation in MCU or radio performance; in some system configurations, an Si10xx device can extend battery life by as much as 50 percent.

The Si10xx wireless MCUs offer market leading RF performance with the highest output power and sensitivity and lowest power wake-up transition. The Si10xx family's integrated power amplifier (PA) and low-noise amplifier enable an RF link budget of greater than 140 dB without requiring active external elements. This results in extended range, higher bandwidth and lower overall power consumption.

"The Si10xx family is a battery's best friend, offering best-in-class energy efficiency that makes it easier to design battery-powered products for the smart home and smart meter markets," said Mark Thompson, vice president and general manager of Silicon Labs' Embedded Mixed Signal products. "By incorporating the EZRadioPRO transceiver, the Si10xx wireless MCUs deliver exceptional RF performance with high output power and superior sensitivity."

Unparalleled Development Support

To streamline the development of smart home and smart meter products based on Si10xx wireless MCUs, Silicon Labs offers a rich set of hardware and software tools for MCU and system design, RF design and optimization, and network software design. These tools include the following:

- Si1000-DK and Si1010-DK development kits
- SDBC-DK3 development platform for EZRadioPRO wireless products
- Wireless development suite (WDS), a comprehensive toolset that makes it easy to develop robust, low-cost wireless applications with little or no specific RF design experience

- EZMACPRO media access control module ("network in a box")
- Fully compliant wireless M-Bus stack (EN: 13757-4), a metering networking standard common in Europe

Pricing and Availability

Pricing for the Si10xx MCUs starts at \$3.51 (USD) in 10K quantities. The Si1000DK development kit is available now for \$99 (USD). The WIRELESSMBUSEK evaluation kit is priced at \$99 (USD). For additional product information and to purchase samples and development tools, please visit www.silabs.com/pr/wirelessmcu.

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.

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