Silicon Labs Targets China's Smart Metering Market with Best-in-Class Wireless Transceiver

New Si4438 EZRadioPRO® IC Provides Cost-Effective, High-performance, Low-Power Sub-GHz Wireless Connectivity for Smart Energy Applications

"China's fast-growing smart metering market will benefit from wireless connectivity solutions that deliver exceptional performance and ultra-low sleep current at minimal BOM cost. Silicon Labs' new Si4438 IC is the ideal sub-GHz transceiver to meet these application challenges for China's smart grid."

SHENZHEN, China--(BUSINESS WIRE)--Silicon Labs (NASDAQ: SLAB), a leader in high-performance, analog-intensive, mixed-signal ICs, today introduced a high-performance, ultra-low-power wireless transceiver optimized for China's rapidly growing smart metering market. Silicon Labs' new Si4438 EZRadioPRO® IC is designed to maximize wireless range and battery life while reducing bill of materials (BOM) cost by 30 percent for smart meters. Designed for the 425-525 MHz ISM band, the Si4438 transceiver also provides an ideal sub-GHz wireless solution for in-home energy management systems and other smart grid infrastructure applications such as long-range back-haul communications to utilities.

One of the world's fastest-growing smart metering markets, China is rapidly upgrading its power grid to a "greener" smart grid, and smart meters for residences and businesses are key elements of this grid transformation. According to a new report by Pike Research, the installed base of smart meters in China will grow from 139 million units in 2012 to 377 million units by 2020. Smart meter market penetration in China will also reach 74 percent by 2020.

Silicon Labs engineered the Si4438 transceiver to meet the performance, energy efficiency, system cost and regulatory requirements of smart meters operating in the 470-510 MHz band in China. Featuring an efficient on-chip power amplifier (PA), the Si4438 IC provides extended range and robust communication links for smart metering by leveraging best-in-class specifications in transmit output power (+20 dBm), sensitivity (-124 dBm), link budget (144 dB) and adjacent channel rejection (58 dB). Built-in antenna diversity and support for frequency hopping further extends range and enhances wireless performance. Tightly integrated into the Si4438 transceiver, antenna diversity can improve the system link budget by 8-10 dB, resulting in substantial range increases even under adverse environmental conditions.

The Si4438 transceiver is the most energy-efficient sub-GHz wireless solution available for China's smart metering market. The Si4438 IC's 50 nA sleep/standby current (with register retention) is 40 times lower than competing transceivers in the China market. From its 50 nA sleep mode, the Si4438 transceiver can transition to either receive (RX) or transmit (TX) mode in only 450 microseconds. The device's active mode TX current consumption of 75 mA at +20 dBm and active RX current consumption of 14 mA, coupled with its ultra-low standby current and fast wake times, maximize battery life for power-sensitive wireless applications, resulting in fewer battery replacements and/or reduced battery size with the same lifetime cost savings.

Because of the Si4438 transceiver's high performance and integration, there is no need to add external PAs, low-noise amplifiers (LNAs) or surface acoustic wave (SAW) filters for most wireless applications, thereby reducing BOM cost. The on-chip PA can be used to compensate for the reduced performance of low-cost antennas while competing solutions require larger, costlier external PAs to achieve comparable performance. An integrated temperature sensor, power-on-reset and GPIOs further reduce system cost and board size. The Si4438 IC is designed to work with a low-cost MCU, a crystal and a few passive components to create a cost-effective wireless system. Its 4 mm x 4 mm package is also the smallest in its class, minimizing board real estate.

The Si4438 IC is pin compatible with Silicon Labs' Si446x EZRadioPRO transceivers, which can be used in worldwide sub-GHz ISM frequency bands for smart meter/smart grid products designed for global deployment. The EZRadioPRO family includes a complete line of transmitters, receivers and transceivers covering a wide range of wireless applications. In addition, Silicon Labs offers Ember® ZigBee® wireless networking solutions for smart energy and connected home applications in the 2.4 GHz band, as well as 32-bit Precision32 MCUs, mixed-signal 8-bit MCUs, wireless MCUs, and digital isolators for smart metering applications.

"Smart metering and other smart grid applications require highly sophisticated and yet cost-effective and easy-

to-deploy wireless technology," said Diwakar Vishakhadatta, vice president and general manager of Silicon Labs' Embedded Systems business. "China's fast-growing smart metering market will benefit from wireless connectivity solutions that deliver exceptional performance and ultra-low sleep current at minimal BOM cost. Silicon Labs' new Si4438 IC is the ideal sub-GHz transceiver to meet these application challenges for China's smart grid."

Developer-Friendly Wireless Development Environment

Silicon Labs provides an array of hardware and software development tools to help developers get their smart metering products to market faster. The 4438-490-PDK development kit provides all the essential tools to evaluate the Si4438 IC for smart metering designs operating at the 490 MHz frequency. The kit includes two C8051F930 MCU-based motherboards, two RF pico-boards and two antennas optimized for the 425-525 MHz frequency band, making it very easy to set up a wireless link. Silicon Labs' GUI-based Wireless Development Suite (WDS) software with sample code enables developers to quickly and intuitively create and deploy robust, cost-effective wireless applications with little or no specific RF design and configuration experience.

Pricing and Availability

The Si4438 EZRadioPRO transceiver is priced at $2.03 (USD) in 10,000-unit quantities, and samples are available now. The 4438-490-PDK development kit is available now for $299 (USD MSRP). For additional Si4438 product information and to purchase samples and development tools, please visit www.silabs.com/pr/EZRadioPRO.

Silicon Labs

Silicon Labs 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 patented semiconductor solutions offers customers significant advantages in performance, size and power consumption. For more information about Silicon Labs, please visit www.silabs.com.

Cautionary Language

This press release may contain forward-looking statements based on Silicon Labs' 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 Labs' financial results and cause actual results to differ materially from those in the forward-looking statements, please refer to Silicon Labs' filings with the SEC. Silicon Labs disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

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