Silicon Labs Targets Internet of Things with Lowest Power and Smallest Form Factor Wireless MCUs

Highly Integrated Sub-GHz Si106x/8x Family Ideal for Power-Sensitive, Battery-Powered Systems with RF Connectivity

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AUSTIN, Texas--(BUSINESS WIRE)--Silicon Labs (NASDAQ: SLAB), a leader in high-performance, analog-intensive, mixed-signal ICs, today announced that it has expanded its family of 8-bit Si10xx wireless microcontrollers (MCUs) with two new options optimized for both cost-sensitive and performance-intensive designs. By combining its ultra-low-power MCU technology with its sub-GHz EZRadio® and EZRadioPRO® transceivers in a single-chip solution, Silicon Labs has created new energy-friendly wireless MCUs that achieve industry-leading RF performance with the lowest overall power consumption in their class. Supporting worldwide frequency bands from 142 to 1050 MHz with low-power sleep and active modes for extended battery life, the Si106x and Si108x wireless MCUs address the low energy and RF connectivity requirements of home automation, security and access control, sensor networks, asset tracking and long-range control applications for the Internet of Things.

The highest performance and smallest wireless MCU solutions on the market, the Si106x and Si108x devices integrate an energy-efficient 8051 MCU and a sub-GHz RF transceiver into a 5 mm x 6 mm QFN package. This compact footprint makes the Si106x/8x wireless MCUs an ideal fit for space-constrained applications that require wireless connectivity as well as ultra-low power for long battery life. The exceptional single-chip integration and small package help reduce system cost, design complexity, board size and component count. The devices also feature a priority crossbar decoder that gives designers complete control over a variety of functions including a 10-bit analog-to-digital converter (ADC), dual comparators, four 16-bit timers as well as UART, SPI and 12C serial interfaces. This flexible crossbar configurability eliminates the tradeoffs that often must be made with small packages.

Si106x/8x wireless MCUs based on the EZRadio transceiver provide a cost-effective, high-value solution for the majority of embedded wireless designs. Other more demanding connected device applications can benefit from the higher wireless performance offered by the Si106x/8x devices containing the EZRadioPRO transceiver, which offers greater sensitivity (-126 dBm) and higher output power (+20 dBm) for longer-range applications. The EZRadioPRO transceiver’s resulting 146 dB link budget maximizes wireless range, and its 60 dB adjacent channel selectivity with 12.5 kHz channel spacing ensures robust operation in harsh RF conditions. The EZRadioPRO transceiver is designed to comply with the industry’s most stringent wireless standards including FCC, ETSI and ARIB, while offering frequency coverage in all major bands up to 1050 MHz and supporting data rates from 100 bps to 1 Mbps.

The Si106x/8x family is the most energy-efficient sub-GHz wireless MCU offering available. Both wireless MCU family options feature ultra-low power consumption when the radio is active, 18 mA when transmitting at +10 dBm and 10.7 mA in low-power receive mode. Low power modes enable dramatically reduced power consumption when the radio is idle or off: 30 nA shutdown, 50 nA standby and 600 nA in sleep mode. Built-in dc-dc boost support allows operation down to 0.9 V for single-cell battery operation, which reduces system cost while extending the life of battery-powered products.

“Offering an unparalleled combination of extreme energy efficiency, industry-leading RF performance and link budget, and the smallest package size in its class, the Si106x/8x wireless MCU family provides an ideal sub-GHz connectivity solution for space-constrained, power-sensitive wireless applications,” said Geir Førre, senior vice president and general manager of Silicon Labs’ Microcontroller products. “The new wireless MCU family also gives developers the flexibility of choosing cost-effective and high-performance options, backed by a wireless development suite that brings unprecedented simplicity and ease of use to wireless design.”

The Si106x/8x wireless MCU family supports a range of device configurations including a choice of cost-effective EZRadio and high-performance EZRadioPRO transceivers, flash memory scaling from 8 to 64 kB, and 768 bytes to 4 kB of RAM. Additionally, wireless MCU devices are available with +13 dBm or +20 dBm maximum output power.

Simplified Wireless Development Support

Silicon Labs offers a rich set of hardware and software tools to accelerate the development of applications based on the Si106x/8x wireless MCUs. Designed to support RF evaluation, range testing and application code development, the kits include two wireless motherboards, two Si106x pico-boards, and all necessary antennas, cables and batteries.

Silicon Labs' Wireless Development Suite (WDS) greatly simplifies radio configuration for the entire Si106x/8x wireless MCU family. WDS software provides an intuitive interface that makes it easy to select design RF parameters and automatically generate the commands needed to configure the wireless MCU with the desired settings. The software also eases RF evaluation and range testing while providing code examples that accelerate application development.

Pricing and Availability

Samples and production quantities of the Si106x/8x wireless MCUs are available now in a 36-pin 5 mm x 6 mm QFN package. Si106x/8x product pricing starts at $2.25 (USD) in 10,000-unit quantities. Six wireless MCU development kits, spanning the 434 to 915 MHz frequency range, are available now for $299 each (USD MSRP). For additional Si106x/8x product information and to purchase samples and development tools, visit www.silabs.com/wirelessmcu.

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.

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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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