Silicon Labs Newsroom

New Secure Bluetooth 5.2 SoCs Enable Ten-Year Coin Cell Battery Operation

-- Silicon Labs Delivers Bluetooth® Low Energy, Mesh Networking and Sub-One-Meter Direction Finding Accuracy in an Optimized Single-Chip Solution --

LAS VEGAS, Jan. 7, 2020 /PRNewswire/ -- **CES 2020** -- Silicon Labs (NASDAQ: SLAB) announces a new Bluetooth® system-on-chip (SoC) solution delivering a market-leading combination of security features, wireless performance, energy efficiency, and software tools and stacks to meet the market demand for high-volume, battery-powered IoT products. Expanding Silicon Labs' secure, ultra-low-power Wireless Gecko Series 2 platform, the EFR32BG22 (BG22) SoCs provide developers with an optimized Bluetooth connectivity solution supporting the new Bluetooth 5.2 specification, Bluetooth direction finding and Bluetooth mesh.

According to the Bluetooth SIG, total annual Bluetooth device shipments are forecast to grow 26 percent by 2023 (from 4 billion units in 2019 to 5.4 billion units), and 90 percent of all Bluetooth devices will include Bluetooth Low Energy by 2023. Secure connectivity and extremely low power consumption will be fundamental requirements for these IoT devices. Silicon Labs designed the BG22 SoCs to meet these requirements and growth projections for the billions of Bluetooth-enabled IoT devices coming in the next few years.

The BG22 family's combination of best-in-class ultra-low transmit and receive power (3.6 mA TX at 0 dBm, 2.6 mA RX) and a high-performance, low-power Arm® Cortex®-M33 core (27 µA/MHz active, 1.2 µA sleep) delivers industry-leading energy efficiency that can extend coin cell battery life up to ten years. Target applications include Bluetooth mesh low-power nodes, smart door locks, personal healthcare and fitness devices. Asset tracking tags, beacons and indoor navigation also benefit from the SoCs' versatile Bluetooth Angle of Arrival (AoA) and Angle of Departure (AoD) capabilities and sub-one-meter location accuracy.

The new portfolio offers a choice of three Bluetooth SoC products designed to address a wide range of price/performance requirements for smart home, consumer, commercial and industrial IoT applications including those requiring multi-year battery life.

- The EFR32BG22C112 SoC targets high-volume, cost-sensitive applications, providing access to 1 Mbps and 2 Mbps Bluetooth PHYs, along with a 38.4 MHz Arm Cortex-M33 core, 18 GPIOs and 352 kB of flash memory with radio characteristics of 0 dBm transmit (TX) and an industry-leading -99 dBm receive (RX) (1M PHY) sensitivity.
- The EFR32BG22C222 SoC targets applications requiring more compute power (with a 76.8 MHz M33 core), more I/O's (26 GPIOs) and higher TX power (+6 dBm).
- The EFR32BG22C224 SoC provides IQ sampling for direction finding applications and access to 125 kB and 500 kB Bluetooth LE Coded PHYs, which can increase RX sensitivity to -106 dBm. The SoC increases operating temperature to +125 °C and extends flash memory up to 512 kB to support applications requiring direction finding capabilities or low-power mesh nodes.

"As the leader in low-power wireless technology for the IoT, we've significantly strengthened our offering for existing and growing Bluetooth markets. Our secure Bluetooth solution enables our customers to reduce BOM cost, power and time-to-market," said Matt Johnson, senior vice president and general manager of IoT products at Silicon Labs. "We were first to market with Bluetooth mesh and Bluetooth 5.1 direction finding, and we continue to lead the industry with new innovations including Bluetooth 5.2. Our new BG22 SoCs give developers the right balance of features, security and performance at low cost points to help drive adoption of Bluetooth across a wide array of IoT products."

Silicon Labs delivers an optimized level of security in a cost-effective Bluetooth SoC solution. One of the toughest challenges IoT developers face today is ensuring connected devices will run only genuine, trusted firmware. BG22 SoCs address this need simply and efficiency through Silicon Labs' Secure Boot with Root of Trust and Secure Loader capability. The SoCs support comprehensive failure analysis by allowing developers to investigate problems without erasing flash since the software itself may be part of the root cause. Developers achieve this through Silicon Labs' Secure Debug with lock/unlock cryptographic capability.

Pricing and Availability
EFR32BG22 SoCs in a 5 mm x 5 mm QFN40, 4 mm x 4 mm QFN32 and a slender 0.3 mm x 4 mm x 4 mm TQFN32 package are planned to be available in March. EFR32BG22 SoC pricing enables cost-effective Bluetooth 5.2 applications with high-volume pricing as low as $0.52 (USD). The EFR32BG22 SoC starter kit and Thunderboard EFR32BG22 evaluation kit are planned to be available in March, with kit pricing starting at $19.99 (USD MSRP). Developers can download Simplicity Studio including network analyzer and energy profiler tools, Bluetooth stacks, demos and mobile apps at silabs.com/simplicity-studio.

For additional information, visit silabs.com/bg22.

Silicon Labs will demonstrate the EFR32BG22 family's low-power direction finding capabilities at its public suite in the Venetian Sands Expo in Las Vegas during CES, Jan. 7-10, 2020.

Silicon Labs
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Connect with Silicon Labs
Silicon Labs PR Contact: Dale Weisman +1-512-532-5871, dale.weisman@silabs.com
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