Silicon Labs Newsroom

Silicon Labs Unveils BG29: The Future of Bluetooth® LE in Miniature Devices

Ultra-small BG29 with expanded memory and ultra-low power is ideal for Connected Health devices

AUSTIN, Texas, March 12, 2025 /PRNewswire/ -- Silicon Labs (NASDAQ: SLAB), the leading innovator in low-power wireless, today announced its new Series 2 BG29 family of wireless SoCs, designed to bring high compute and connectivity to the smallest form factor Bluetooth Low Energy (LE) devices without compromising performance. BG29 is ideal for today's most intensive Bluetooth LE applications like wearable health and medical devices, asset trackers, and battery-powered sensors.

The BG29 is available in compact quad flat no-lead (QFN) and wafer-level chip scale packages (WLCSP), featuring substantial memory with significant RAM and Flash capacities. These extended memory resources enable advanced applications such as real-time data processing, complex algorithm execution, and high-speed communication protocols.

It features a DCDC boost for wide voltage range support, a Coulomb counter for accurate battery monitoring, andSilicon Labs Secure Vault™ High designed for PSA Level 3 to protect sensitive data.

Meeting The Evolving Needs of Connected Healthcare and Medical Devices

Smart medical devices are transforming healthcare globally, but miniaturization—building smaller connected devices without sacrificing performance or power—remains a key development obstacle. The BG29 represents a significant breakthrough. It integrates high-performance wireless, long battery life, large memory capacity, and multi-connection support in even the smallest devices, like blood glucose monitors, where it was previously extremely challenging.

"With the BG29, developers don't have to settle," saidJacob Alamat, senior vice president for the Home and Life business unit at Silicon Labs. "We're combining high connectivity and performance with small size and exceptional security – empowering device makers to break records in tiny connectivity."

BG29 Pushes Envelope of What's Possible in Tiny Devices

The new BG29 family of SoCs is equipped with key features such as:

- **Compact Footprint:** With a compact size, the BG29 is available in both WLCSP and QFN packages delivering industry-leading connectivity for a wide range of wireless devices like connected health, asset trackers, and building automation. The WLCSP can be used for tiny devices like battery powered sensors, insulin delivery patches, disposable continuous glucose monitors (CGMs) and other one-time use applications, and smart tooth implants. Meanwhile, the QFN package is ideal for non-size constrained device types such as pulse oximeters, access control, industrial automation and heart rate monitors.

- **High Memory and Compute with Ultra-Low Power**: With 1 MB Flash and 256 kB RAM, BG29 delivers superior performance and processing capabilities for advanced, demanding applications while ensuring low power consumption. The large memory keeps data tracking going even during long smartphone connection breaks. The BG29 enables Bluetooth LE for IoT devices such as portable medical devices, wearables, smart home sensors, asset trackers, and more.

- **Integrated DCDC Boost and Coulomb Counter**: The integrated DCDC Boost on BG29 provides IoT device makers a wide voltage range, enabling single-cell alkaline, Silver-Oxide, and button cells and reducing the device's form factor. The integrated Coulomb Counter enables accurate battery level monitoring on portable medical devices to avoid battery depletion during critical health application usage and enhance the user experience of other wearables and devices.

- **Industry-Leading Security**: Secure Vault High with Virtual Secure Engine provides robust security capabilities protecting the device against scalable local and remote software and hardware attacks by providing advanced encryption, secure key management, and authentication**.**

The BG29 family of devices is expected to become generally available in Q3 of this year.

Learn More About Silicon Labs Low-Power Bluetooth LE Solutions

The BG29 packs more power into a tinier SoC to help device makers build secure, reliable designs to improve lives and patient outcomes. To learn more about Silicon Labs Low-Power Bluetooth devices and how customers are using Silicon Labs to advance Connected Health, visit:

- Blog: Silicon Labs BG29 Bluetooth LE SoC Packs More Compute and Security for the Smallest of Medical and Health Devices
- Learn more about BG29
- Case Study: Powering Lura Health's Tooth-Mounted Salivary Health Monitor

About Silicon Labs

Silicon Labs (NASDAQ: SLAB) is the leading innovator in low-power wireless connectivity, building embedded technology that connects devices and improves lives. Merging cutting-edge technology into the world's most highly integrated SoCs, Silicon Labs provides device makers with the solutions, support, and ecosystems needed to create advanced edge connectivity applications. Headquartered in Austin, Texas, Silicon Labs has operations in over 16 countries and is the trusted partner for innovative solutions in the smart home, industrial IoT, and smart cities markets. Learn more at www.silabs.com.

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