

Silicon Labs Simplifies IoT Connectivity with Multiprotocol Wireless Gecko SoCs

New Wireless SoC Portfolio Provides Scalable Solutions Supporting ZigBee®, Thread, Bluetooth® Smart and Proprietary Protocols

“ From Bluetooth Smart to Thread and ZigBee to proprietary stacks, our Wireless Gecko SoCs offer the industry’s most balanced set of protocol combinations to address diverse customer use cases. ”

NUREMBERG, Germany--([BUSINESS WIRE](#))--[Silicon Labs](#) (NASDAQ: SLAB) has introduced its [Wireless Gecko portfolio](#) of multiprotocol system-on-chip (SoC) devices, providing flexible connectivity and price/performance options for Internet of Things (IoT) devices. Silicon Labs’ new Wireless Gecko SoCs integrate a powerful ARM® Cortex®-M4 core, energy-friendly Gecko technology, a 2.4 GHz radio with up to 19.5 dBm output power, and advanced hardware cryptography. Wireless Gecko SoCs speed wireless design with best-of-breed [Thread](#) and [ZigBee®](#) stacks for mesh networks, intuitive radio interface software for [proprietary protocols](#), [Bluetooth® Smart](#) for point-to-point connectivity, and [Simplicity Studio™](#) tools to simplify wireless development, configuration, debugging and low-energy design.

Get all the details about Silicon Labs’ Wireless Gecko portfolio including pricing and availability, development tools and data sheets at www.silabs.com/WirelessGecko.

The Wireless Gecko portfolio features three families of multiprotocol SoCs optimized for real-world IoT use cases and the most popular wireless protocols:

- Blue Gecko family – Bluetooth Smart connectivity with unmatched output power and range
- Mighty Gecko family – Best-in-class ZigBee and Thread connectivity for mesh networks
- Flex Gecko family – Flexible proprietary wireless protocol options for diverse applications

“The Wireless Gecko portfolio provides customers with a much-needed one-stop-shop approach to multiprotocol IoT connectivity with flexible cost/performance options supported by best-in-class software stacks and a common development environment that greatly simplifies wireless design,” said Daniel Cooley, vice president of marketing for IoT products at Silicon Labs. “From Bluetooth Smart to Thread and ZigBee to proprietary stacks, our Wireless Gecko SoCs offer the industry’s most balanced set of protocol combinations to address diverse customer use cases.”

Silicon Labs’ pin- and software-compatible Wireless Gecko families enable customers to leverage their development tool and software investments. Developers can select the wireless protocol to meet their application needs today and can easily migrate to other protocols within the portfolio with the assurance of hardware/software reuse.

Wireless Gecko SoCs combine Silicon Labs’ energy-friendly [Gecko MCU technology](#) with a multiprotocol 2.4 GHz RF transceiver in a single-die solution with scalable memory options (up to 256 kB flash and up to 32 kB RAM). Hallmarks of Gecko technology include well-architected energy modes, ultra-fast wake-up/sleep transitions, and the Peripheral Reflex System (PRS), enabling autonomous operation of low-power peripherals while the MCU core sleeps. Based on an ARM Cortex-M4 processor with powerful floating point and DSP capabilities, the Gecko MCU consumes only 63 µA/MHz in active mode. The Wireless Gecko SoCs also integrate a software-programmable power amplifier (PA) and balun to reduce bill of materials (BOM) cost and design complexity while providing scalable output power ranging from -30 dBm up to +19.5 dBm for applications requiring long-range connectivity.

“Low-power connectivity is a key factor in the deployment of IoT nodes at scale, and Silicon Labs’ new Wireless Gecko SoC portfolio offers a broad choice of connectivity standards,” said John Ronco, vice president, product management, ARM. “Silicon Labs already has an impressive range of highly efficient ARM-based MCUs, and we see the addition of wireless interoperability as a key step in enabling developers to realize the potential of the IoT market.”

Further enhancing energy efficiency and application code footprint, Wireless Gecko SoCs feature a built-in hardware cryptographic accelerator providing fast, energy-efficient autonomous encryption and decryption of

Internet security protocols such as TLS/SSL with minimal CPU intervention. The on-chip accelerator supports advanced algorithms such as AES with 128- or 256-bit keys, elliptical curve cryptography (ECC), SHA-1 and SHA-224/256. Hardware cryptography enables developers to meet evolving IoT security requirements more efficiently than with software-only techniques required by competing solutions.

Wireless Gecko Portfolio Highlights

EFR32BG Blue Gecko Family

- Supports Bluetooth Smart (Bluetooth Low Energy or “BLE”) including the BLE 4.2 specification as well as proprietary wireless protocols
- Offers the highest output power for BLE designs (up to +19.5 dBm), enabling BLE products to deliver excellent range and long battery life regardless of the chosen output power
- Supported by Silicon Labs’ market-proven Bluetooth Smart software stack and easy-to-use BGScript scripting language, enabling customers to get to market quickly
- Enables customers to migrate from Silicon Labs’ pre-certified Blue Gecko BLE module to SoC-based designs while preserving their software and engineering investments

EFR32MG Mighty Gecko Family

- Provides a best-in-class multiprotocol SoC solution for low-power 802.15.4 mesh networking
- Supports Silicon Labs’ industry-leading ZigBee PRO software stack for ZigBee applications and Silicon Labs’ pre-certified Thread protocol stack for IP-based mesh networks
- Offers a seamless migration path for customers needing to support connected devices using ZigBee or Thread
- Gives developers the flexibility to select the optimal protocol (ZigBee, Thread, Bluetooth Smart or proprietary) for their IoT applications

EFR32FG Flex Gecko Family

- Supports popular proprietary protocol options for diverse applications including M2M links, building automation, security and electronic shelf labels, giving developers the freedom to optimize their designs without constraints from industry alliances and standards
- Provides a flexible SoC architecture with built-in support for a variety of differentiated physical layer and packet formats and modulation schemes
- Features Silicon Labs’ new, intuitive radio abstraction interface layer (RAIL) software, easing the complexity of proprietary wireless development by simplifying radio configuration and enabling developers to migrate their application code across Silicon Labs’ Wireless Gecko products and future wireless ICs

Simplifying Wireless Gecko Development

The Wireless Gecko SoC portfolio is supported by Silicon Labs’ [Simplicity Studio development platform](#), a unified environment for concurrent MCU and RF design. Simplicity Studio tools include AppBuilder, allowing developers to easily configure wireless applications while ensuring software reuse across Wireless Gecko SoC-based designs; Desktop Network Analyzer, providing full visibility and debugging of wireless networking activity by using the SoC’s packet trace port; and Energy Profiler, enabling developers to minimize the energy consumption of their code and extend battery life.

Pricing and Availability

Engineering samples for Wireless Gecko SoCs are available now in 5 mm x 5 mm QFN32 and 7 mm x 7 mm QFN48 packages; production parts are planned for Q2 2016. USD pricing in 100,000-unit quantities begins at \$2.11 for Mighty Gecko SoCs; \$2.06 for Flex Gecko SoCs; and \$0.99 for Blue Gecko SoCs. The full-featured SLWSTK6000A Mighty Gecko Mesh Development Kit, supporting ZigBee, Thread, Bluetooth Smart and proprietary protocols, is priced at \$499. The SLWSTK6066A Flex Gecko Proprietary Starter Kit is priced at \$229. The SLWSTK6020A Blue Gecko Starter Kit is priced at \$99. (All kits USD MSRP.) To order Wireless Gecko SoC product samples and development kits, visit www.silabs.com/WirelessGecko.

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Silicon Labs

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