Silicon Labs Simplifies Digital Class D Audio Development for 32-Bit Embedded Designs

ToolStick Evaluation Kit for Precision32™ MCUs Reduces the Cost and Complexity of Adding Voice, Sound Clips and Streaming Audio

"*With our new Class D ToolStick, developers can quickly and easily add Class D audio capabilities and capacitive touch buttons and sliders to any 32-bit embedded product using Silicon Labs' SiM3U1xx MCUs.*"

AUSTIN, Texas--(BUSINESS WIRE)--Silicon Laboratories Inc. (NASDAQ: SLAB), a leader in high-performance, analog-intensive, mixed-signal ICs, today introduced a cost-effective USB-based evaluation kit that enables developers to add digital Class D audio capabilities to 32-bit embedded designs based on Silicon Labs' feature-rich SiM3U1xx Precision32™ microcontrollers (MCUs). The new Class D ToolStick kit demonstrates how easy and economical it is to upgrade basic "buzzer/beeper" alert sounds used in personal medical devices, fitness equipment, high-end toys, small appliances and other consumer electronics products to more sophisticated voice prompts, music, sound clips and even streaming audio.

Silicon Labs' highly integrated SiM3U1xx MCUs are well suited for digital Class D power amplification applications without the hassle and expense of adding discrete Class D amplifiers. The SiM3U1xx MCUs include a 300 mA high-drive I/O capable of directly driving a small speaker, a crystal-less USB transceiver compatible with the USB audio interface, two 250 ksps 12-bit analog-to-digital converters (ADCs), and an I2S receiver that supports audio streaming from a PC, a portable music player or a wide range of I2S-enabled audio devices. The only external components required to drive Class D audio from SiM3U1xx MCUs are inexpensive inductors, some capacitors and ferrite beads.

In addition to supporting Class D audio capabilities, the new ToolStick also enables developers to add capacitive touch buttons and sliders to their 32-bit embedded systems or use the SiM3U1xx MCU's high-drive I/Os with pulse-width modulation (PWM) to directly drive other components such as small motors, eliminating the need for separate power field-effect transistors (FETs).

The Class D ToolStick board is powered from USB using the SiM3U1xx MCU's internal 5 V regulator, and it can play music from a stereo jack, a computer or a recorded message using a simple speaker. The Class D ToolStick provides four modes of operation: sampling data from a portable music player using the MCU's on-chip ADCs, USB audio streaming from a PC, playing pre-recorded sound clips stored from on-chip flash memory using a common audio compression algorithm, and a voice recorder that stores data in flash using an audio compression algorithm. Developers can easily handle mode transition through capacitive touch buttons and control volume with a capacitive touch slider.

The Class D ToolStick evaluation kit comes complete with hardware Gerber files and software to streamline the process of adding Class D audio to embedded applications. In addition, the ToolStick can serve as a cost-effective, general-purpose development platform for Precision32 MCUs. It features a built-in USB-based debugger/programming interface and accessible pins for easy prototyping. The Class D ToolStick debug interface is fully operational with Silicon Labs' complimentary Precision32 IDE, compiler and AppBuilder crossbar configuration software, as well as Keil tool chains.

"Audio feedback provides developers with a useful, cost-effective and appealing way to differentiate their embedded products in today's competitive market," said Keith Odland, director of marketing for Silicon Labs' microcontroller products. "With our new Class D ToolStick, developers can quickly and easily add Class D audio capabilities and capacitive touch buttons and sliders to any 32-bit embedded product using Silicon Labs' SiM3U1xx MCUs."

Pricing and Availability

The Class D ToolStick evaluation kit is available now and priced at $35 (USD MSRP). The kit includes full source code and implements a Class D amplifier demonstration using a small-footprint 40-pin 6 mm x 6 mm package SiM3U1xx MCU.

For more information and to order Silicon Labs' Class D ToolStick evaluation kit, please visit http://www.silabs.com/pr/toolstickclassd. For additional Precision32 MCU product information, samples and other development tools, visit www.silabs.com/pr/32bit-mcu.

Silicon Laboratories Inc.

Silicon Laboratories 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 Laboratories' 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 Laboratories' financial results and cause actual results to differ materially from those in the forward-looking statements, please refer to Silicon Laboratories' filings with the SEC. Silicon Laboratories 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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