Silicon Labs Introduces Industry's Most Sensitive, Power-Efficient Proximity Sensors

Next-Generation Si114x QuickSense™ Infrared and Ambient Light Sensors Enable Advanced Gesture Control for "Touchless" Human Interfaces

AUSTIN, Texas--(BUSINESS WIRE)-- Silicon Laboratories Inc. (NASDAQ: SLAB), a leader in high-performance, analog-intensive, mixed-signal ICs, today announced its next-generation infrared (IR) and ambient light sensors for human interface (HI) applications. The new Si114x family, the latest addition to Silicon Labs' QuickSense™ HI portfolio, features the industry's most sensitive, power-efficient and longest range proximity sensors. Available in a tiny 2 mm x 2 mm package, the Si114x sensors enable sophisticated proximity sensing and touchless interfaces for handsets, eReaders, netbooks, tablets, personal media players, toys, office equipment, industrial controls, security systems, point-of-sale stations and many other products.

A proximity sensor's detection range and sensitivity is determined by the system's signal-to-noise ratio (SNR); the higher the SNR, the longer the range. Numerous variables contribute to a system's SNR including ambient noise/light compensation, photo-diode sensitivity, filtering and analog-to-digital converter (ADC) architecture. While competing solutions may address one or two of these variables, the patent-pending Si114x architecture addresses all of these parameters to minimize noise and maximize performance. The Si114x family's combined architectural optimizations result in very high system SNR, enabling the Si114x proximity sensors to achieve the industry's longest range, highest sensitivity and fastest data acquisition speed.

The Si114x family's industry-leading sensitivity gives developers the flexibility to locate IR sensors behind semi-opaque product overlays. The robust IR sensing architecture also operates in direct sunlight and includes an ambient light sensor capable of sensing light levels up to 128 kilolux. In addition, the Si114x family's advanced architecture enables proximity measurements in only 25 microseconds, minimizing the on-time of power-hungry infrared LEDs and resulting in the industry's lowest system power consumption — up to 20 times lower than competitive solutions.

The Si114x family includes sensor options with up to three infrared LED drivers, giving developers the freedom to implement one-dimensional HI systems with a detection range of more than 50 cm or multi-dimensional systems capable of gesture sensing with ranges of up to 15 cm. The Si1142 and Si1143 devices, with two and three infrared LED drivers respectively, enable advanced motion and gesture sensing. With its two integrated LED drivers, the Si1142 supports z- and x-axis motion sensing for touchless slider interfaces. The Si1143, which supports three LED drivers, enables innovative 3D motion sensing for the ultimate in multi-dimensional touchless control.

When coupled with the intelligent control of a Silicon Labs capacitive touch-sense microcontroller (MCU) such as an F700, F800 or F99x MCU, the Si114x sensors can enable a wide range of motion and gesture detection and expected-object distance correction applications. The Si114x devices' sensing modes provide valuable information to the MCU to determine the background light type, such as sunlight, fluorescent or incandescent. This information is useful in many applications to improve IR proximity sensing, optimize infrared sensing power, enhance backlight dimming functions in a display, and control other devices within the system.

"The new Si114x family is the most sophisticated single-chip proximity sensing solution available, delivering unmatched sensitivity, range and power efficiency in a tiny footprint," said Mark Thompson, vice president and general manager of Embedded Mixed-Signal products at Silicon Labs. "As the only semiconductor supplier to offer both proximity sensors and touch-sense MCUs in the same portfolio, we offer developers the benefits of single-source solutions to streamline the design of next-generation human interfaces."

QuickSense Studio and Board Support

Like all members of the QuickSense portfolio, the Si114x family is supported by the QuickSense Studio, an intuitive, easy-to-use software environment that enables developers to program, debug and analyze proximity, ambient light and capacitive touch-sense applications. QuickSense Studio streamlines the configuration of infrared proximity and ambient light sensors through a library of APIs. The graphical environment offers the ability to generate C code for proximity and motion detection, gesture detection and algorithmic identification of background light types.

Complete evaluation and development kits, including the IRSLIDER2EK evaluation kit for Si1142-based touchless sliders and the Si1140DK development kit for Si1143 3-LED evaluation, are available at www.silabs.com/pr/QuickSense.

Silicon Labs offers an online optical sensor current estimator utility that helps developers evaluate power consumption levels

required for a proximity and ambient light sensing application. To access the utility, visit www.silabs.com/sensor-current-estimator.

Pricing and Availability

The Si114x proximity sensors are available today in an exceptionally small, optically clear 2 x 2 x 0.75 mm 10-pin QFN package. Pricing ranges from $1.22 for single LED to $1.98 for multiple LED implementations in 10,000-unit quantities. The IRSLIDER2EK evaluation kit is priced at $49.99, and the Si1140DK development kit is available for $59.99. (All prices in USD.) For more information or to request samples, please visit www.silabs.com/pr/QuickSense.

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.

Cautionary Language

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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