Silicon Labs USB-to-I2S Audio Bridge Chip Brings Plug-and-Play Simplicity to Audio Design

Highly Integrated CP2114 Device Supports Leading Codecs and DACs for USB Audio Applications

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AUSTIN, Texas--(BUSINESS WIRE)--

Silicon Laboratories Inc. (NASDAQ: SLAB), a leader in high-performance, analog-intensive, mixed-signal ICs, today introduced the industry’s first crystal-less USB-to-I²S audio bridge designed to support a wide range of codecs and digital-to-analog converters (DACs) used in USB-based audio applications. The new CP2114 audio bridge chip simplifies the process of transferring audio data from USB to I²S without time-consuming code development, speeding time to market for USB audio accessories such as speakers, headphones, music boxes, point-of-sale terminals, navigation systems and VoIP systems.

USB system development often involves significant expertise, design effort and cost to overcome implementation issues ranging from compatibility to poor performance. USB-to-I²S audio data transfer also requires sophisticated clock synchronization, which poses complex development challenges. To address these needs, Silicon Labs’ CP2114 audio bridge provides a highly-integrated, plug-and-play solution for streaming audio between USB and I²S.

The CP2114 audio bridge integrates a USB 2.0 full-speed function controller, a USB transceiver, crystal-less oscillator, one-time programmable ROM, UART, IIC and I²S interface into a single-chip solution. The device’s innovative crystal-less architecture eliminates the need for external clock crystals and associated components, reducing audio system BOM cost and design complexity. The CP2114 audio bridge also requires no external memory when combined with a codec or DAC, further minimizing system BOM cost.

The CP2114 audio bridge supports multiple mainstream DACs and codecs from Wolfson Microelectronics, Cirrus Logic and Texas Instruments, giving customers the flexibility to implement their own preferred audio chipset solution. Silicon Labs offers evaluation kits pre-populated with these popular DAC and codec platforms to further speed design time.

“Fast time to market and BOM cost reduction are critical requirements in today’s competitive audio market, and by collaborating with Silicon Labs, we are able to help our customers bring cost-effective USB audio solutions to market quickly,” said Eddie Sinnott, portfolio and strategy director at Wolfson Microelectronics. “Wolfson is a global leader in the supply of high-performance mixed-signal semiconductor devices and high-definition audio solutions to the consumer electronics market, and the combination of Wolfson multi-channel and stereo DAC products and Silicon Labs’ CP2114 audio bridge chip provides a best-in-class platform for an array of cost-sensitive consumer audio products.”

“Cirrus Logic and Silicon Labs have a long history of working closely together in the audio market to deliver compelling platforms that help our customers reduce cost and speed time to market,” said Carl Alberty, director of marketing for audio products at Cirrus Logic. “Cirrus Logic is recognized for our broad portfolio of ultra-low power, high-performance codecs, so together with Silicon Labs’ CP2114 audio bridge, OEMs benefit from a turnkey USB audio platform that allows them to differentiate and excel in the competitive audio market.”

The CP2114 audio bridge uses the standard USB audio device class that is natively supported by most operating systems. USB audio class compatibility eliminates the need to develop and install custom USB software drivers. Host programming capabilities also enable developers to configure practically any external codec or DAC and perform in-field upgrades.

“As a leading supplier of USB interface devices, we make it easy and cost-effective for our customers to implement USB connectivity in their embedded designs,” said Mike Salas, vice president and general manager of Silicon Labs’ microcontroller products. “Silicon Labs’ CP2114 device is the most developer-friendly USB-to-I²S audio bridge solution available, vastly simplifying USB audio peripheral design.”

Pricing and availability

Samples and production quantities of the CP2114 USB-to-I²S audio bridge are available now in small-footprint 5 mm x 5 mm QFN packages optimized for space-constrained portable audio applications. The CP2114 device is priced at $1.13 (USD) in 10,000-unit quantities.

The CP2114EK, priced at $49 (USD MSRP), enables developers to evaluate and customize their USB-to-I²S bridge applications through GPIO, UART and IIC peripherals. Silicon Labs also offers additional CP2114 evaluation kits, priced at $82 (USD MSRP), that are optimized for USB audio applications based on popular codec and DAC platforms.

For more information about the new CP2114 audio bridge device or to order samples and development tools, please visit www.silabs.com/usb.

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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