Audio Software from Silicon Labs Strikes the Right Note for Automotive Radio Market

Combination of Advanced Software and Tuner ICs Provides Complete Audio Post-Processing Solution for Car Radio Systems

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AUSTIN, Texas--(BUSINESS WIRE)--Silicon Labs (NASDAQ: SLAB) has introduced new audio software products that give automotive radio developers greater flexibility to incorporate advanced audio post-processing algorithms in Silicon Labs’ Global Eagle Si47911/12 radio ICs with audio system devices. The new software products make it easy and cost-effective for developers to implement audio post-processing functions such as tone control, cabin equalization and chime generation using the Si47911/12 ICs’ integrated Tensilica HiFi EP DSP. Developers can use Silicon Labs’ development tools to port their proprietary audio algorithms, design custom audio processing flows using Silicon Labs’ library of audio functions, or combine their audio algorithms with Silicon Labs’ audio post-processing functions.

For details about Silicon Labs’ audio post-processing software and development tools for the Global Eagle Si47911/12 automotive audio system family, visit www.silabs.com/globaleagle .

According to IHS Markit, global light vehicle sales will reach nearly 90 million units this year. Many of these vehicles will feature sophisticated automotive infotainment systems with multiple tuner ICs and antennas to support FM phase diversity reception, Radio Data System (RDS), and digital radio standards such as HD Radio™ and Digital Audio Broadcast (DAB). The combination of Silicon Labs’ new audio software products and Global Eagle tuner ICs addresses the global demand for advanced car radio technology by supporting all worldwide broadcast radio bands while enabling flexible and powerful approaches to audio post-processing.

“Automotive OEMs are demanding ever-higher audio performance at a lower system cost while consumers expect CD-quality audio from their car radios,” said Brian Mirkin, General Manager of broadcast products at Silicon Labs. “Silicon Labs is addressing this need for higher quality audio at lower cost by providing new software products that work in harmony with our Global Eagle audio system ICs. This hardware/software combination provides the utmost in design flexibility while enabling a state-of-the-art automotive listening experience.”

Silicon Labs’ fixed-function audio software provides a complete audio post-processing solution for all analog and digital audio functions in the automotive radio head unit. The audio software includes an extensive set of user-programmable parameters that enable developers to configure the audio post-processing algorithms for different car models. The software supports the following features:

- Three independent audio post-processing paths:
  - Main cabin: 4-channel or 6-channel audio
  - Auxiliary: 2-channel audio (for rear seat headphones)
  - Voice: audio processing for two microphone inputs
- Two tone sequence generators
- Two wave generators played from internal memory

Audio software development kit (SDK)

The SDK enables developers to port their audio algorithms to the Global Eagle Si47911/12 audio system and unlock the capabilities of the audio DSP. The SDK includes the following:

- Development board with software tools for real-time debugging
- A library of building blocks that can be used by the developer’s algorithms
- An encryption utility that secures the audio processing IP

Silicon Labs Audio Topology Editor (SLATE)

SLATE is a graphical editor running in MathWorks’ Simulink® environment that enables developers to design a custom audio

processing flow using Silicon Labs' library of software modules. SLATE also enables developers to reuse and modify the Silicon Labs audio design used in the fixed-function audio processing. Together, SLATE and the audio SDK enable developers to combine their own algorithms with Silicon Labs' audio processing blocks to create new audio processing topologies. The SDK enables developers to port their IP to the audio DSP and format the new IP as a SLATE module, which can then be easily manipulated in SLATE to make powerful and complex audio processing development easy and fast.

Silicon Labs introduced its first RF-in-CMOS broadcast audio IC products nearly 12 years ago. These single-chip solutions redefined how AM/FM tuner ICs were designed into consumer electronics products by reducing component count by more than 90 percent and board space by more than 60 percent. To date, Silicon Labs has shipped more than 1.3 billion "radio-on-a-chip" ICs, culminating with the Global Eagle family, the industry's most advanced automotive radio system solution. Global Eagle designs can scale from low-cost, single-tuner AM/FM radios to high-performance systems with multiple tuners and antennas, enabling radio suppliers to leverage their R&D across multiple product lines, all with a common software API.

Audio Software Availability

Silicon Labs' audio software products for the Global Eagle Si47911/12 tuner IC family are available now to automotive radio suppliers through a software licensing agreement. Contact your local Silicon Labs sales representative or an authorized distributor. For additional information, visit www.silabs.com/globaleagle.

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Silicon Labs

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