Silicon Labs Tunes into Audiophile Market with High-Performance Radio Receivers

Si477x AM/FM Receivers Deliver Superior RF Performance While Reducing System Cost for High-End Consumer and Professional Audio Equipment

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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 a family of advanced AM/FM receivers tuned for the high-end consumer and professional audio equipment market. The new Si477x AM/FM receivers provide industry-leading RF performance and exceptional configurability while reducing system cost and complexity for consumer audio/video receivers (AVRs), FM receiver monitors and pro-audio receivers.

To optimize audio performance, high-end consumer and pro-audio equipment makers typically build discrete AM/FM receiver designs from manually tuned inductors and multiple active components. These complicated, hand-crafted receiver designs result in limited configurability, fewer end-customer features, higher cost, and extensive manufacturing overhead and test time. The discrete approach also suffers from overload in strong signal environments, causing degradation in audio quality, particularly for weaker signals. In contrast, Silicon Labs’ highly integrated AM/FM receiver design improves robustness and delivers superior audio quality in all reception conditions while reducing system cost and complexity.

Silicon Labs’ Si477x family includes two feature-rich, single-chip devices: the Si4770, a global multiband AM/FM receiver, and the Si4777, an AM/FM receiver supporting HD Radio tuner functionality. Silicon Labs designed the Si477x receivers to reduce the bill of materials (BOM) for high-end consumer and pro-audio applications while enhancing design flexibility and delivering outstanding performance. The Si477x family leverages Silicon Labs’ patented digital low-intermediate-frequency (low-IF) architecture to deliver superior audio quality under the most demanding environments.

The Si477x family offers unsurpassed RF sensitivity, adjacent and alternate channel selectivity, linearity and audio fidelity through advanced DSP algorithms. With -3.5 dBµV sensitivity, the Si477x receivers can tune to signals down to 0.67 µV, picking up stations up to 100 miles away. Featuring a highly linear RF front end and sophisticated RF and IF automatic gain control (AGC) coupled with a state-of-the-art dynamic bandwidth control algorithm, the Si477x receivers optimize sensitivity and selectivity in strong signal environments, enabling outstanding reception at all times and conditions. The Si477x family’s best-in-class selectivity (65 dB at ±100 kHz and 72 dB at ±200 kHz frequency offset from the desired station) sets a new standard for tuning weaker stations buried among stronger ones in today’s crowded spectrum.

The Si477x receivers also feature an on-chip “prosumer” FM channel equalizer designed to eliminate multipath fading and deliver optimal performance under complex multipath interference conditions present in urban settings. The equalizer’s patented adaptation algorithm corrects for multipath fading, which occurs when a radio station’s signal reaches the receiver along with time-shifted versions of the station’s same signal reflected off of buildings and other large objects. The equalizer significantly reduces audio distortion with fewer sound-compromising mitigation fixes applied to the audio. This high-performance FM channel equalizer is the first of its kind in the audio industry.

The Si477x family provides excellent performance with Silicon Labs’ recommended default property settings, and it also delivers outstanding flexibility, allowing developers to customize audio and system performance according to their individual preferences. This high level of configurability enables developers to tweak their audio designs to achieve a particular “sound” that is unique to their audio product brand.

“Silicon Labs’ high-performance Si477x receiver family provides the best value and system cost savings for high-end consumer and pro-audio audio systems without compromising one decibel of radio performance.” said James Stansberry, vice president and general manager of Silicon Labs’ broadcast products. “Audio equipment developers evaluating radio receiver solutions will appreciate the exceptional RF performance, single-chip integration, design simplicity and configurability that the Si477x family offers.”

The Si4770 and Si4777 receiver products are pin compatible, simplifying system design efforts across multiple high-end audio equipment platforms. Since the device footprints are identical, developers can design one board and use either the Si4770 or Si4777 with a different back end to scale between HD Radio and non-HD Radio solutions.

Pricing and Availability

Samples and production quantities of the Si477x AM/FM receivers are available now in a compact 6 mm x 6 mm 40-pin QFN package. The Si4770 receiver is priced at $5.26, and the Si4777 receiver supporting HD Radio is priced at $6.31, both in 10,000-unit quantities. To ease radio system design, Silicon Labs offers the Si4770-A-EVB evaluation board priced at $500 and the Si4770Module-A-EVB priced at $150. (All prices are in USD.) For more information about Silicon Labs' Si477x AM/FM receivers and to purchase samples and development tools, please visit www.silabs.com/pr/radio-receiver.

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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