

Silicon Labs Launches Low-Power Digital Set-Top Box Tuner Family

World's Smallest Digital STB Tuner ICs with Integrated Loop-Through Technology Reduce BOM Cost and Enable Energy-Saving Modes

“ Our Si2144/24 tuners offer STB makers the optimal balance of RF performance, energy efficiency, tiny package size and BOM-saving integration, enabling them to reduce the cost, complexity and power consumption of their STB designs. ”

AUSTIN, Texas--([BUSINESS WIRE](#))--[Silicon Labs](#) (NASDAQ: SLAB), the leading provider of [silicon TV tuners](#), today introduced a new family of high-performance digital set-top box (STB) tuner ICs designed to reduce the cost, complexity and power consumption of cable, terrestrial, hybrid terrestrial/satellite and IP-based STB products. Silicon Labs' new Si2144 and Si2124 digital tuner ICs help STB designers reduce board space and bill of materials (BOM) cost through a combination of exceptional single-chip integration and the industry's smallest package size. The Si2144/24 tuner family's integrated loop-through technology also helps reduce system-level cost and power consumption.

Silicon Labs' Si2144/24 family offers a best-in-class digital tuner solution for the global cable, terrestrial and hybrid terrestrial set-top box market, which is forecast to exceed 100 million units this year. The world's largest STB market, China is a powerhouse in STB design and manufacturing for both domestic consumption and export. Silicon Labs' Si2144/24 digital tuners are supported by China's leading terrestrial and cable STB system-on-chip (SoC) suppliers.

Based on Silicon Labs' six generations of video tuner technology and proven digital low-IF architecture deployed globally in more than 400 million TVs, the Si2144/24 family is optimized for the performance, cost, footprint and green energy requirements of STB applications. The Si2144/24 family supports all worldwide cable and terrestrial STB standards (ATSC/QAM, DVB-T2/C2/T/C, ISDB-T/C and DTMB).

Loop-through (LT) technology – routing the RF input signal to an RF output and making it available to other video devices such as a legacy analog TV – is a key feature required by many STB designs. The Si2144/24 ICs are the smallest, most power-efficient STB tuners available with integrated LT technology, consuming less than 500 mW, which minimizes total STB power consumption and reduces power supply and thermal requirements as well as system cost for multi-tuner designs.

In addition to integrating active LT technology (available when the STB is powered on), the Si2144/24 tuners feature “off-through” passive LT technology, which delivers LT capability when the STB is powered off or even unplugged. Passive LT minimizes the STB's standby power consumption, enabling STB makers to promote their products as “eco-friendly” by helping consumers save energy. All competing CMOS STB tuners require costly external components to implement this “off-through” feature.

Available in a tiny 3 mm x 3 mm QFN package, the Si2144/24 ICs are the smallest STB tuners available today. This ultra-compact package, combined with minimal BOM count, enables the smallest footprint of any STB tuner solution in the market: 0.86 cm². The Si2144/24 tuners deliver the lowest BOM cost of any STB tuner in mass production. Unlike competing STB tuners, the Si2144/24 devices require no balun at the RF input, and they integrate all tracking filter inductors, dramatically reducing system cost and complexity.

Delivering unsurpassed linearity, sensitivity and robust reception over real-world scenarios, the Si2144/24 tuners offer improvements in noise figure across the band and greater immunity to undesired signals such as LTE transmissions without external filtering. The STB tuners deliver 13 dB margin to the industry's D-Book specification for superior LTE interference immunity, enabling pristine picture clarity proven in more than 400 million TVs worldwide without a single product return due to LTE interference.

“As the leading supplier of silicon tuners to the TV industry, we've engineered many years and six generations of architectural innovation into our Si2144/24 STB tuner family,” said James Stansberry, senior vice president and general manager of Silicon Labs' Internet of Things and broadcast products. “Our Si2144/24 tuners offer STB makers the optimal balance of RF performance, energy efficiency, tiny package size and BOM-saving integration, enabling them to reduce the cost, complexity and power consumption of their STB designs.”

The Si2144/24 STB tuner family shares a common application programming interface (API) with Silicon Labs' entire TV and STB tuner portfolio. This shared software API reduces the STB designer's learning curve when migrating from worldwide hybrid HDTVs to regionalized platforms and STB designs. A simple application circuit, common across all of Silicon Labs' TV and STB tuners, makes onboard installations straightforward with immediate cost savings.

Pricing and Availability

Samples and production quantities of the Si2144/24 digital STB tuners are available now in a 3 mm x 3 mm 24-QFN package. The Si2144 digital cable and terrestrial STB tuner is priced at \$0.74 in 10,000-unit quantities, and the Si2124 digital terrestrial STB is priced at \$0.70 in 10,000-unit quantities (all prices in USD). To help accelerate development, Silicon Labs offers the Si2144-A-EVB and the Si2124-A-EVB evaluation boards priced at \$395 (USD MSRP). For more information about Silicon Labs' STB tuner ICs and to purchase samples and development tools, please visit www.silabs.com/tv-tuner.

Silicon Labs

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