Silicon Labs Launches Industry's Smallest PCI Express Clock IC for Consumer Electronics

New MEMS-Based Si50122 Clock Generator Leverages CMEMS® Technology to Reduce the Size, Cost and Complexity of PCIe System Designs

"As today's power- and space-constrained consumer and embedded products continue to adopt the PCIe standard, developers need next-generation PCIe clocking solutions that minimize power consumption, BOM count and board size"

AUSTIN, Texas--(BUSINESS WIRE)--Silicon Labs (NASDAQ: SLAB), a leader in high-performance, analog-intensive, mixed-signal ICs, today introduced the industry's smallest PCI Express (PCIe) compliant clock generator targeting consumer and embedded applications where reliability, board space, component count and power consumption are critical design factors. Designed to meet the stringent specifications of the PCIe Generation 1/2/3 standards, the new Si50122 clock leverages Silicon Labs' low-power PCIe and CMEMS® technologies to provide an energy-friendly, crystal-less timing solution for a wide range of applications. The PCIe clock is ideal for digital video and still cameras, IP set-top boxes, HD streaming video players, high-definition digital TVs, home entertainment and audio systems, multi-function printers, consumer and small-business storage, and home gateway and wireless access equipment.

The Si50122 is the first clock generator to incorporate Silicon Labs' patented CMEMS technology. The internal CMEMS resonator provides a stable frequency reference to the device's CMOS clock circuitry, eliminating the need for a bulky, discrete quartz crystal. By leveraging CMEMS technology, the Si50122 PCIe clock provides the benefits of shock and vibration immunity, exceptional reliability and guaranteed performance under harsh conditions such as extreme temperature swings. Because handheld consumer electronics products are susceptible to being bumped or dropped, using a robust CMEMS PCIe clock generator rather than a crystal-based solution eliminates the risk of system failure caused by a broken quartz resonator.

Offered in a tiny 2 mm x 2.5 mm 10-pin TDFN package, the Si50122 is the smallest PCIe clock generator available, as well as the industry's lowest power crystal-less PCIe clocking solution. This industry-leading combination of small size and ultra-low power makes the Si50122 a best-in-class solution for space-constrained, handheld and battery-powered consumer and embedded applications that are adopting the PCIe interconnect standard.

To reduce system cost, power consumption and component count and to simplify board design, the Si50122 PCIe clock generator uses a low-power "push-pull" HCSL output buffer, which eliminates the need for all external termination resistors at the HCSL outputs. Competing devices use a legacy output buffer architecture that requires up to four termination resistors per output and a current source resistor, forcing designers to manage up to nine external resistors for a two-output device. By eliminating numerous external components, push-pull technology enables designers to create a continuous transmission line from the output pin to the receiver, resulting in cleaner signal integrity. Push-pull technology at the output buffer reduces power consumption by more than 60 percent compared to traditional constant-current technology used by almost all other PCIe clock suppliers.

The Si50122 PCIe clock provides two low-power 100 MHz differential HCSL outputs and one 25 MHz LVCMOS clock output. Since it is a crystal-less solution, it does not require an external 25 MHz frequency source. As with Silicon Labs' entire PCIe timing IC portfolio, the Si50122 device exceeds the jitter requirements for the PCIe Gen 1/2/3 standards and supports optional spread spectrum modulation for electromagnetic interference (EMI) reduction.

"As today's power- and space-constrained consumer and embedded products continue to adopt the PCIe standard, developers need next-generation PCIe clocking solutions that minimize power consumption, BOM count and board size," said James Wilson, director of marketing for timing products at Silicon Labs. "We designed our new CMEMS-based crystal-less Si50122 PCIe clock to provide the utmost in integration, energy efficiency, reliability and design simplicity for the rapidly expanding PCIe market."

Pricing and Availability

Samples and production quantities of the Si50122 PCIe clock generator are available now. Pricing in 10,000-unit quantities begins at $0.77 (USD). To accelerate PCIe application development, Silicon Labs offers Si50122-Ax-EVB evaluation boards priced at $125 (USD MSRP). For more information about the Si50122 PCIe clock generator and to order samples and evaluation boards, visit www.silabs.com/pci-express-clocks.

Silicon Labs

Silicon Labs (NASDAQ: SLAB) is a leading provider of silicon, software and system solutions for the Internet of Things, Internet infrastructure, industrial control, consumer and automotive markets. We solve the electronics industry's toughest problems, providing customers with significant advantages in performance, energy savings, connectivity and design simplicity. Backed by our world-class engineering teams with unsurpassed software and mixed-signal design expertise, Silicon Labs empowers developers with the tools and technologies they need to advance quickly and easily from initial idea to final product. www.silabs.com

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