New USBXpress Controller from Silicon Labs Simplifies USB Connectivity for Embedded Designs

Highly Integrated, Low-Power CP2102N Bridge Device Delivers Advanced Functionality in Small Packages for Turnkey USB Design

" *Silicon Labs' newest USBXpress bridge devices provide a highly integrated, turnkey solution for adding USB to new embedded designs and for updating existing designs to USB, especially for portable applications where space, power and battery life matter.* "

AUSTIN, Texas--([BUSINESS WIRE](#))--[Silicon Labs](#) (NASDAQ: SLAB) has added a smaller, lower-power member to its family of [USBXpress™ bridge devices](#), providing a simpler, faster way to add Universal Serial Bus (USB) connectivity to new and legacy embedded designs. Silicon Labs' new CP2102N USB controller eliminates complex, time-consuming firmware development and provides advanced functionality in QFN packages as small as 3 mm x 3 mm. The CP2102N device simplifies USB-to-UART connectivity and speeds time to market for a wide range of portable, power-sensitive and space-constrained applications such as USB dongles, point-of-sale (POS) terminals, data loggers, gaming controllers and personal medical devices.

For additional CP2102N USBXpress product information, to order product samples and evaluation kits, and to try out the new Xpress Configurator USB configuration tool, visit [www.silabs.com/usbxpress](#) .

With the rapid adoption of USB in embedded designs, developers are seeking faster, economical ways to add USB connectivity to their applications. Silicon Labs' highly integrated CP2102N USB-to-UART bridge controller provides a simple, drop-in solution for adding USB to new designs and also for updating existing RS-232 designs to USB using minimal components and printed circuit board (PCB) space. Based on Silicon Labs' proven architecture that eliminates the need for costly external crystals, resistors and other external components, the fixed-function bridge device integrates a USB 2.0 Full Speed controller and UART interface in a single-chip solution that helps reduce bill of materials (BOM) cost for space-constrained applications.

The CP2102N device is Silicon Labs' lowest power USB connectivity solution, delivering a low operating current of <10 mA and extending battery life for power-sensitive applications. Advanced, integrated features such as a remote wake-up capability and USB battery charger detection allow the device to wake-up a suspended host and to detect the type of charger connected to the system, further reducing BOM cost.

The CP2102N bridge controller eliminates the need for USB protocol expertise or time-consuming firmware and driver development, enabling developers to focus their time and resources on their end applications. Pin- and software-compatible with Silicon Labs' existing CP210x USB devices, the CP2102N provides an easy migration to the latest USB-to-UART bridge technology. These fixed-function devices are ideal for embedded designs that require USB connectivity with minimal development effort or for any application that needs to be upgraded to USB from legacy serial interfaces such as UART.

"USB is the interface of choice for countless embedded applications, and yet from a developer standpoint, USB is a complex protocol that can require considerable firmware expertise and development effort," said Tom Pannell, director of marketing for MCU products at Silicon Labs. "Silicon Labs' newest USBXpress bridge devices provide a highly integrated, turnkey solution for adding USB to new embedded designs and for updating existing designs to USB, especially for portable applications where space, power and battery life matter."

Silicon Labs is a leading provider of [USB connectivity solutions](#), offering a broad and flexible USB portfolio including fixed-function devices and general-purpose [8-bit and 32-bit MCUs](#) with on-chip USB controllers.

CP2102N USBXpress Product Highlights

- Data transfer rates up to 3 Mbaud
- Industry-leading energy efficiency: low active current of <10 mA
- Remote wake-up capability to wake up a suspended host device
- USB battery charger detection capability (USB BCS 1.2 specification) to detect the type of charger connected to the system
- Crystal-less operation and integrated regulator to reduce BOM cost
- Small-footprint package options: 3 mm x 3 mm QFN20, 4 mm x 4 mm QFN24 and 5 mm x 5 mm QFN28

- Royalty-free Virtual COM port drivers
- Advanced, easy-to-use software tools including Xpress Configurator to simplify development

Simplicity Studio Tools Speed Time to Market

Silicon Labs simplifies the addition of USB connectivity to embedded designs with native support for USBXpress bridge devices within a new early release of the Simplicity Studio development environment. Using the easy-to-use, GUI-based Xpress Configurator tool, developers can quickly configure and program desired USB-to-UART parameters, generate required customizations and take advantage of factory programming options. Royalty-free Virtual COM Port (VCP) device drivers enable the product to appear as a COM port to PC applications. To further speed development, Silicon Labs supports the CP2102N USB bridge controller with the CP2102N-EK evaluation kit, which includes an integrated debugger for configuration, headers for easy access to GPIOs and UART, battery charger detection pins and a remote wake-up pushbutton.

Pricing and Availability

Samples and production quantities of the CP2102N USBXpress device are available now. Pricing for the CP2102N device begins at $0.91 (USD) in 10,000-unit quantities. The CP2102N-EK evaluation kit is available now and priced at $25.00 (USD MSRP). For additional USBXpress product information and to order samples and evaluation kits, please visit www.silabs.com/usbxpress.

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Silicon Labs

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