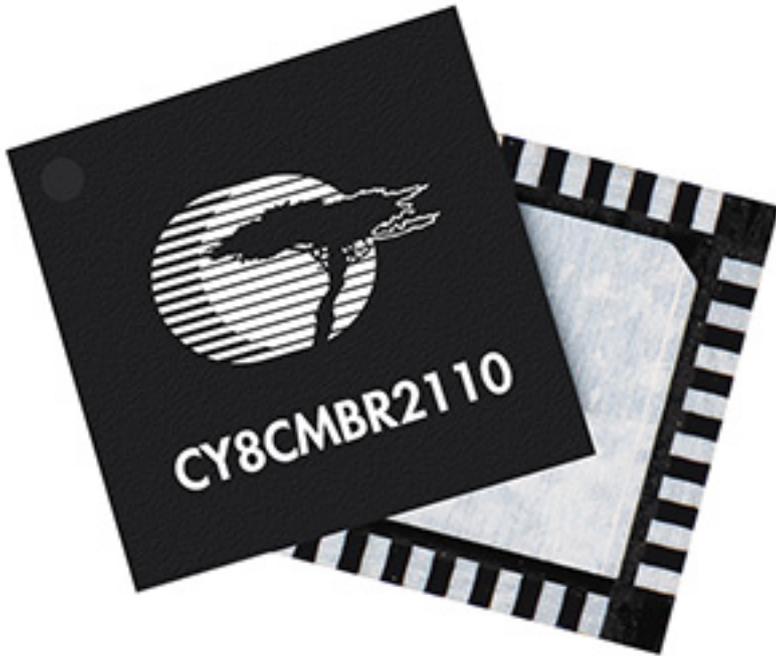


Capacitive touch-sensing controller drives up to 10 LEDs



Cypress Semiconductor announced a new CapSense Express capacitive touch-sensing controller optimized to replace mechanical buttons in front panels for industrial and consumer applications, portable medical devices, gaming devices and home automation systems. The new low-power CY8CMBR2110 device supports up to 10 buttons and drives up to 10 LEDs with fully configurable LED effects.

Cypress also introduced the EZ-Click customizer tool, GUI-based software that combines device configuration, visual feedback, and production line testing for streamlined register configuration of the CY8CMBR2110 controllers, thereby accelerating time-to-market. Designers can use the tool to implement customized LED effects and buzzer output for audio feedback. Controllers in the Mechanical Button Replacement (MBR) family leverage Cypress's SmartSense auto-tuning algorithm, which completely eliminates the requirement for manual system tuning and is the only solution that maintains optimal button performance during run-time. More information is available at www.cypress.com/go/capsense [1].

The CapSense Express MBR family includes the CY8CMBR2016 matrix keypad solution, the CY8CMBR2010 ten-button controllers and the CY8CMBR2044 four-button hardware configurable controllers. Devices in the family offer the industry's lowest power consumption with supply current in run mode of 15 uA per button and a 100 nA Deep-Sleep mode. The devices operate over a 1.71V to 5.5V range, making them ideal for a wide range of regulated and unregulated battery

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applications, and enabling them to operate from a single coin cell battery. The family delivers robust sensing in noisy environments using Cypress's patented CapSense Sigma Delta (CSD) sensing method, ensuring superior immunity to conducted and radiated noise. These devices also feature an integrated voltage regulator to address power supply noise, as well as filters for any spurious noise.

The MBR family features SmartSense auto-tuning, which dynamically optimizes the capacitive baseline and detection threshold for each button. The algorithm adjusts for the optimal capacitance sensing range at power-up and during runtime as environmental conditions change, including noise, temperature, and humidity. Eliminating the need to tune is a significant advantage for large and small manufacturers alike, as it saves engineering time and yield loss that can occur with even slight variations in manufacturing tolerances. This savings is greatly multiplied for customers with a global factory footprint and multi-sourced supply chain. SmartSense auto-tuning can eliminate the need for additional test steps required by competing solutions to address manufacturing variations in PCBs and overlays.

Cypress offers the CY3280-MBR2 CapSense Express with SmartSense Auto-Tuning Evaluation Kit to support the CY8CMBR2110 controller. The MBR family's accompanying Design Toolbox is a simple, interactive spreadsheet that provides detailed resources to ensure optimal performance and validate CapSense systems. The toolbox delivers advanced system debug features and offers application specific guidelines for capacitive buttons, allowing customers to take designs directly to production for significantly shorter time-to-market.

Availability

The CY8CMBR2110 CapSense Express MBR controller is currently in production in a 32-pad QFN package.

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Links:

[1] <http://www.cypress.com/go/capsense>