

Energy Micro EFM32 Gecko MCU minimizes power consumption



Energy Micro announces an agreement with Pervasive Displays Inc. (PDI) for using the EFM32 Gecko MCU to control low power e-paper (EPD) displays. The collaboration between the two companies will enable developers to reduce development time for applications based on the energy friendly EFM32 EPD platform.

Energy Micro's Taiwan distribution and design partner, Retronix, provided technical and commercial support during the development of a new reference design to support the alliance.

Electronic paper is the lowest power display technology because the devices do not consume energy after they have been updated, however long the image is displayed. PDI's e-paper displays, which are ruggedly designed for industrial and commercial applications, reflect light like ordinary paper, making them easy to read in both outdoor and indoor applications. They are currently available in sizes from 1.44-inch to 10.2-inch (37mm to 260mm), the largest with a resolution of 1280 x 1024 (160dpi).

Energy Micro's EFM32G890F128 Gecko MCU combines ultra-low power and high processing capabilities based on the powerful 32-bit ARM Cortex-M3 processor. The EFM32 MCU was chosen for PDI's e-paper because it combines low active power of 180 μ A/MHz at 3V with the world's lowest power standby modes, down to 20nA at 3V in shut-off mode, further augmenting the intrinsic low energy consumption characteristics of the display.

Efficient energy modes, a low energy UART and the device's Peripheral Reflex

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Published on Electronic Component News (<http://www.ecnmag.com>)

System make the EFM32 the ideal controller for e-paper applications. The Gecko MCU delivers the processing power needed to refresh the EPD display very quickly. The “EPD-On SK2” reference design uses the standard EFM32 Gecko starter kit (STK) to handle waveform library functions, image transmission via a USB and UART bridge, driving the electrophoretic display’s chip-on-film controller, and displaying the optimized result. The complete reference design from Retronix is powered by USB or a CR2032 coin cell battery.

“Using Energy Micro’s EFM32 Gecko microcontrollers, a single lithium battery cell can power a PDI display for several years in a typical application,” said Andrea Marchi, Energy Micro’s VP Sales and Marketing Asia Pacific. “This is exactly the kind of application for which the EFM32 Gecko MCU was developed.”

Damon Hess, VP of Worldwide Sales at PDI added: “E-displays are creating new applications that were not possible with conventional display technologies. In every case, minimal energy consumption is a key requirement.

Programmable shelf labels in retail stores are just one example. Most applications are battery-powered and, after exhaustive research across the microcontroller market, we found Energy Micro’s MCU to be the lowest power solution by a considerable margin. Also, its processing power optimizes the performance of our displays.”

You can see a video demonstration of e-paper technology powered by the EFM32 Gecko MCU series here <http://youtu.be/n9AslbxxTIs>

The Retronix “EPD-On SK-2” reference design is available now from http://www.retronix.com.tw/tec_epd.htm. Pervasive Display products and samples can be ordered through its network of worldwide distributors, found at www.pervasivedisplays.com.

www.energymicro.com [1]

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