

Fujitsu Develops New NOR Flash Memory Macro

- High-speed, low-current, high-reliability macro reduces environmental burden -

Yokohama, Japan, March 24, 2010 – Fujitsu Microelectronics Limited today announced the development of new flash memory macro that enables NOR flash memory circuits to achieve high-speed read operations while operating at low power currents. The new flash memory macro is guaranteed to retain program data storage for 20 years, or 100,000 write/erase cycles for data storage, while improving access speeds by 2.5 times to 10 nanoseconds (10 ns), and reducing the required operating current per cell by two-thirds to 9 microamperes (9 μ A), compared to Fujitsu's past technologies. This technology will be implemented in microcontrollers featuring embedded flash memory in automotive, industrial, and consumer electronics applications for which high speed, low current, and high reliability are all priorities, thus contributing to a reduction in the burden on the environment.

Background

Fujitsu has an established track record producing high-reliability microcontrollers featuring embedded NOR flash memory. However, with rising demand for microcontrollers that achieve even higher speeds while consuming less power, it becomes imperative to develop a new flash memory macro to accommodate these needs. Burst mode is one method of accelerating operation speeds of flash memory macros, but depending on characteristics of the CPU core, this can result in undesirable wait states while data is being processed, thereby lowering the overall performance of the microcontroller.

Overview of the new flash memory macro

The new flash memory macro uses circuit elements from Fujitsu's proprietary high-speed memory-access technology FCRAM (fast-cycle random-access memory) in its NOR flash memory circuit, resulting in high speed, low operating current, and high reliability.

By utilizing - as a key feature of FCRAM – an optimized cell array that reduces load during drive operation, and through innovations in power-supply management technology, the new flash memory macro can accelerate data-read methods. These innovations improve access speeds by 2.5 times to 10 ns, while cutting operating current for each cell by two-thirds to 9 μ A, compared to Fujitsu's past technologies (Figure 1). By utilizing microcontrollers embedded with this technology, it becomes possible to enhance the performance of battery-operated portable audio-visual devices and to extend battery life.

Press Contacts

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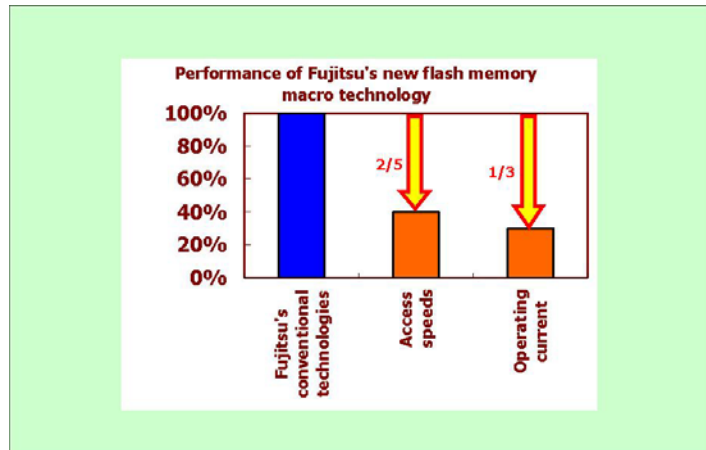


Figure 1: Performance of Fujitsu's new flash memory macro

Future Developments

The new flash memory macro will be used as a core technology for ecological technologies (Figure 2). By offering flash memory microcontrollers embedded with these ecological technologies, Fujitsu will be able to provide high reliability, high temperature tolerance and high-speed technologies that are particularly essential for automotive applications. The inclusion of these environmentally-friendly technologies in microcontrollers with embedded flash memory will contribute to a reduction in the environmental burden footprints of embedded systems.

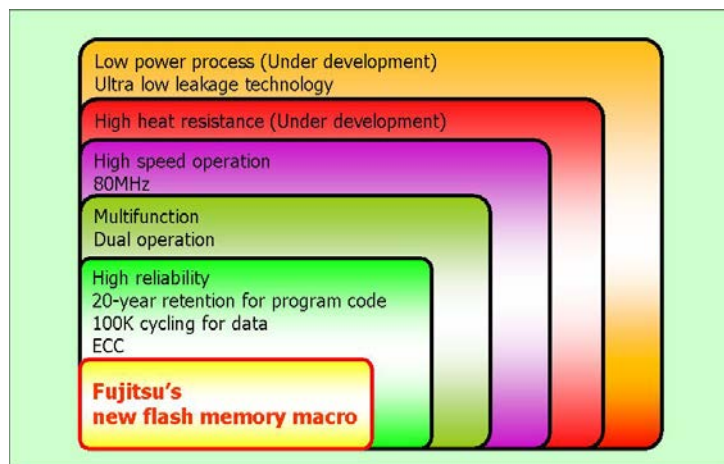


Figure 2: Fujitsu's flash memory technology roadmap

For more information

Fujitsu Microelectronics: <http://jp.fujitsu.com/group/fml/en/>

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About Fujitsu Microelectronics

Fujitsu Microelectronics Limited designs and manufactures semiconductors, providing highly reliable, optimal solutions and support to meet the varying needs of its customers. Products and services include ASICs/COT, ASSPs, power management ICs, and flash microcontrollers, with wide-ranging expertise focusing on imaging, wireless, automotive and security applications. Fujitsu Microelectronics also drives power efficiency and environmental initiatives. Headquartered in Yokohama, Fujitsu Microelectronics Limited was established as a subsidiary of Fujitsu Limited on March 21, 2008. Through its global sales and development network, with sites in Japan and throughout Asia, Europe, and the Americas, Fujitsu Microelectronics offers semiconductor solutions to the global marketplace.

For more information: <http://jp.fujitsu.com/group/fml/en/>

The company name will be changed to Fujitsu Semiconductor Limited as of April 1, 2010.

(Press release: <http://jp.fujitsu.com/group/fml/en/release/20100323.html>)

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