

Fujitsu Launches New Chip for High-Frequency RFID Tags with Industry-Leading 9 KB FRAM

Large memory capacity and serial interface expand potential uses for RFID tags

Yokohama, Japan, June 28, 2012 – Fujitsu Semiconductor Limited today announced a new addition to its FerVID Family™ of chips for RFID tags, the MB89R112, a chip for high-frequency RFID tags that includes 9 KB of FRAM storage. The FerVID Family uses ferro-electric memory, or FRAM, for fast write speeds, high-frequency rewritability, radiation tolerance, and low-power operation. The new chip will be available in sample quantities beginning in August 2012.

The MB89R112 boasts an industry-leading memory capacity for RFID tags operating in the HF band, as well as a serial interface SPI, opening up new possibilities for RFID in the embedded and industrial sectors.

Fujitsu Semiconductor developed FRAM products with two frequency bands to serve as chips for high-functionality RFID tags operating in the HF band (13.56 MHz) and UHF band (860 to 960 MHz), which it has offered as the FerVID family since 2004. Today, its products serve a wide range of applications, including chips for data-carrier tags in the factory automation and maintenance sectors that take advantage of FRAM's fast write speeds and high memory capacity, chips for the medical and pharmaceutical sectors that withstand gamma radiation and electron beams, and chips with serial interfaces for embedded applications.

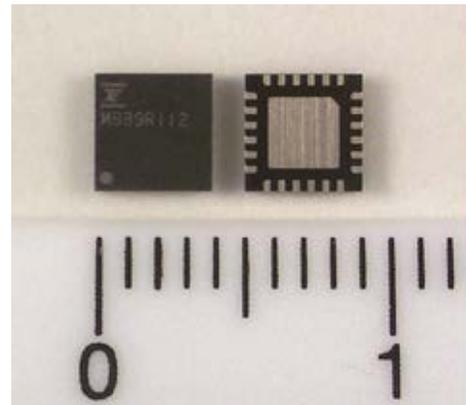


Figure 1. MB89R112

In addition to these uses, a new need has arisen for larger memory capacities and the ability to connect RFIDs to sensors and microcontrollers as a way to change product operating parameters wirelessly or to wirelessly capture a log of environmental factors during distribution. These features would benefit manufacturing control in automotive and electronics manufacturing, as well as maintenance applications in aircrafts, roadways, buildings, and public works.

Fujitsu Semiconductor has responded to this need with the MB89R112 chip for RFID tags, which includes a serial interface SPI and 9 KB of memory capacity, an amount not found in any competing product for the HF band. The MB89R112 is designed as a near-field passive RFID that complies with the industry standard ISO/IEC 15693. The product will be available in sample quantities beginning in August 2012.

The addition of the MB89R112 to the FerVID Family means that the product line now includes HF-band chips covering a range of capacities from 256 bytes to 9 KB, and UHF-band chips covering a range from 4 KB to 64 KB. In addition, for chips with serial interfaces for embedded

applications, the line now includes a 4-KB UHF-band chip and a 9-KB HF-band chip. Together with its varied line of microcontrollers, Fujitsu Semiconductor can meet practically any need.

Features of the MB89R112

1. Industry-leading memory capacity in an HF-band RFID

This product includes 9 KB of FRAM, the greatest amount available in an RFID chip operating in the HF band as defined in ISO/IEC15693. Of that 9 KB, 8 KB is available for use as user memory, structured as 256 blocks of 32 bytes per block, which permits read and write operations access to the entire 8-KB region defined in ISO/IEC 15693. Writing 8 KB of data takes approximately 4 seconds, a high-speed operation six times faster than in products using E²PROM. Having more data stored on RFID tags, it will enable more efficient use as a data-logger, for such applications as traceability of food or medical equipment from production to logistics, use and disposal.

2. Serial interface SPI for embedded applications

This product includes a serial interface SPI for connecting to microcontrollers. Because the 8 KB of user memory in FRAM can be accessed from the microcontroller via SPI, shared memory regions can be used as a data logger, and can also be used as a parameter region for changing the microcontroller's operating parameters. As examples, this can be used to log environmental readings of logistics [01], to detect equipment errors, to change electronic displays, to change sensor threshold values, to change firmware settings, and in many other novel and innovative uses that were previously unattainable.

Sample Release Schedule

Product Name	Delivery
MB89R112	From Middle of August 2012

Please contact your sales representative for sample price.

Sales Target

1,000,000 pieces per month when in mass-production.

Trademarks

Company and product names mentioned herein are trademarks or registered trademarks of their respective companies.

FerVID Family™ is a trademark of Fujitsu Semiconductor Limited.

For More Information:

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About Fujitsu Semiconductor Limited

Fujitsu Semiconductor Limited designs, manufactures, and sells semiconductors, providing highly reliable, optimal solutions and support to meet the varying needs of its customers. Products and services include microcontrollers, ASICs, ASSPs, and power management ICs, with wide-ranging expertise focusing on mobile, ecological, automotive, imaging, security, and high-performance applications. Fujitsu Semiconductor also drives power efficiency and environmental initiatives. Headquartered in Yokohama, Fujitsu Semiconductor Limited (formerly named 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 Semiconductor offers semiconductor solutions to the global marketplace.

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

Appendix

Key Specifications of MB89R112

Items	Specifications
Memory Capacity	9 KB (User memory area : 8 KB)
Memory Block	32 Byte x 256 Block
Operating Frequency	13.56MHz ± 7KHz
Communication Standard	Based on ISO/IEC15693
Serial Parallel Interface	SPI 2MHz (max.)
Data Retention	10 Years (Operating Temp. : -40°C to 85°C)
No. of Rewritability	1 Trillion (10 ¹²) Times

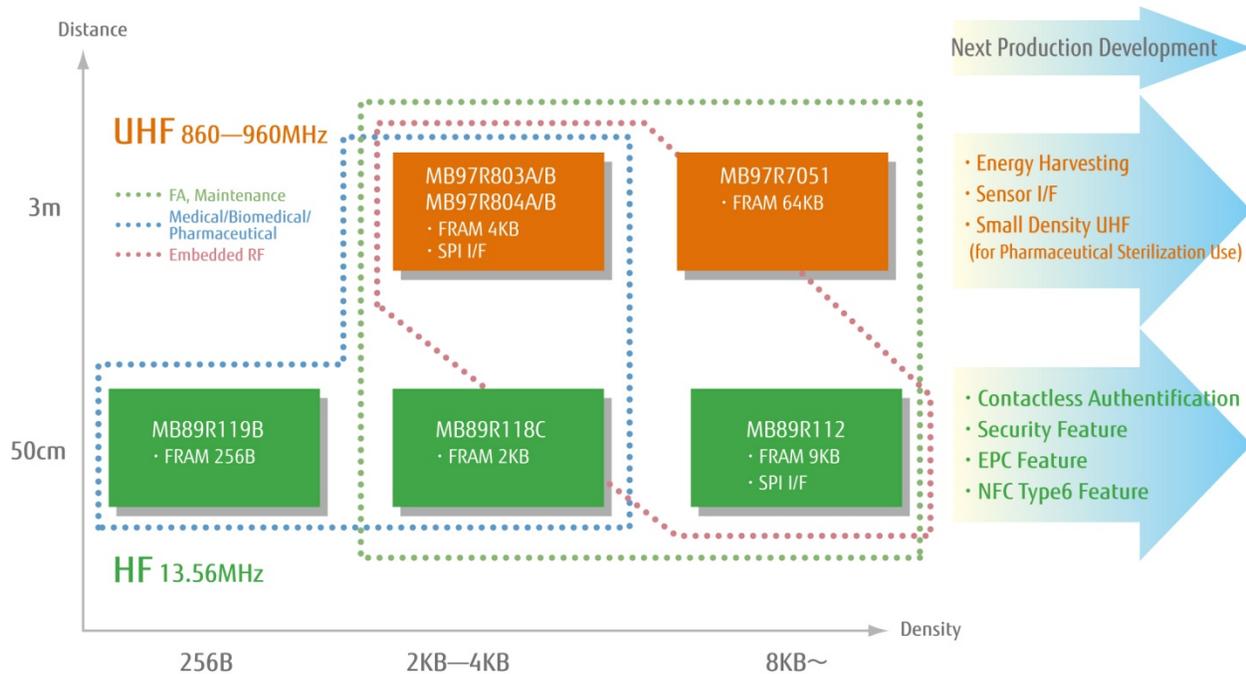


Figure 2. FRAM RFID Product Roadmap