

Fujitsu Semiconductor Releases 18 New 8-bit Low-Voltage Operation Microcontrollers in Three Series

For use in home healthcare devices, appliances, and industrial equipment

Yokoyama, Japan, April 20, 2010 – Fujitsu Semiconductor Limited today announced the development of three new series in its F²MC-8FX family of high-performance 8-bit microcontrollers with embedded flash memory. The new products, which feature very low voltage requirements, operating on just 1.8 V of power, will be available in sample quantities from early May 2010 and in production quantities from July 2010.

The new products include six models with embedded LCD controllers in the 64-pin MB95370L series, six models in the 80-pin MB95310L series, and six with an I²C interface that has up to two channels in the 24-pin MB95350L series, for a total of 18 models in the three series.

These new products are designed to meet the demand for microcontrollers with low-cost LCD controllers. Applications include home healthcare devices, including blood-pressure meters and blood-glucose meters - a market that is growing quickly throughout Asia - as well as home appliances, such as washing machines and microwave ovens, and factory automation equipment, such as thermometers and pressure meters.

Growing health awareness has led many households to have at least one blood-pressure meter, blood-glucose meter, or other similar devices. As demand in this market has increased, so too has the variety of products available, ranging from desktop models to portable models. At the same time, unit prices have dropped 20% to 30% over the past few years, putting equipment manufacturers under pressure to reduce part counts and shrink systems as ways to cut costs.

To meet these demands, Fujitsu Semiconductor has augmented its F²MC-8FX family of 8-bit microcontrollers, which already boasts secure embedded flash memory, adding the 64-pin MB95370L series and the 80-pin MB95310L series. These series have embedded LCD controllers and, with power requirements of just 1.8 V, can operate on the dry-cell batteries.

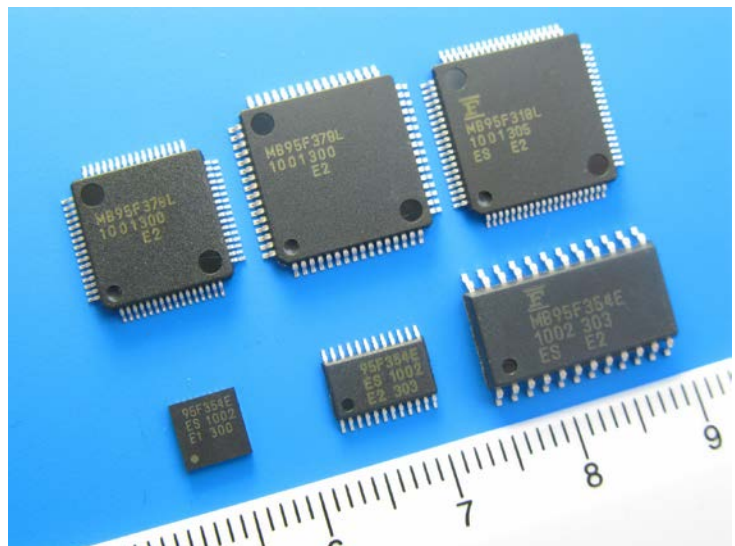


Figure 1. MB95370L series, MB95310L series, MB95350L series

All the new models use 1-line on-chip debugging, minimizing the number of pins customers need to reserve for debugging when developing their products.

Sample Price and Availability

Series name	Sample price	Availability
MB95370L series	JPY300	From early May 2010
MB95310L series	JPY400	
MB95350L series	JPY250	

Line-up

MB95370L Series

Series name	ROM capacity	RAM capacity
MB95F374L, MB95F374E	20 Kbyte	496 Byte
MB95F376L, MB95F376E	36 Kbyte	1008 Byte
MB95F378L, MB95F378E	60 Kbyte	2032 Byte

MB95310L Series

Series name	ROM capacity	RAM capacity
MB95F314L, MB95F314E	20 Kbyte	496 Byte
MB95F316L, MB95F316E	36 Kbyte	1008 Byte
MB95F318L, MB95F318E	60 Kbyte	2032 Byte

MB95350L Series

Series name	ROM capacity	RAM capacity
MB95F354L, MB95F354E	8 Kbyte	240 Byte
MB95F356L, MB95F356E	12 Kbyte	496 Byte
MB95F358L, MB95F358E	20 Kbyte	496 Byte

Sales Target

6 million units (total for three series combined) in fiscal 2010 (April 2010 – March 2011)

Series Features

1. Onboard LCD controller (MB95370L, MB95310L series)

These product series include the necessary functionality to drive a LCD, with a variety of products to suit different LCD segment counts.

2. Incorporates other components to help reduce costs

With a CR oscillator circuit, low-voltage detection circuit, watchdog timer, and other features, these microcontrollers obviate the need for two or three other parts, such as external oscillators and reset ICs, helping to keep overall system costs low.

The CR oscillator is guaranteed to achieve $\pm 2\%$ cycle accuracy characteristics after mounting without calibration.

3. High-performance flash memory

The microcontrollers embed high-performance flash memory which can be rewritten/read 100,000 times even while running a program, and is guaranteed to retain the data for 20 years. Furthermore, a flash security function protects the customer's software from unauthorized external programming.

For More Information

<http://jp.fujitsu.com/group/fsl/en/> (Fujitsu Semiconductor)

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About Fujitsu Semiconductor

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/>

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Attachment**Key Specifications, MB95370L Series**

	MB95F374L	MB95F376L	MB95F378L	MB95F374E	MB95F376E	MB95F378E
ROM capacity	20 Kbyte	36 Kbyte	60 Kbyte	20 Kbyte	36 Kbyte	60 Kbyte
RAM capacity	496 Byte	1008 Byte	2032 Byte	496 Byte	1008 Byte	2032 Byte
Low-voltage detection reset	No			Yes		
Reset input	Dedicated					
Operating voltage	1.8 to 3.6 V					
Clock	On-chip CR oscillator (guaranteed accuracy $\pm 2\%$ after mounting) Selectable from external oscillator clock On-chip PLL					
LCD controller	Common signal outputs: Max 4 Segment signal outputs: Max 40					
Timers	Includes 8/16-bit composite timer (selectable from PWC, PWM, capture), 8/16-bit PPG timer, 16-bit reload timer, time-base timer					
Communication	Includes UART/SIO, I ² C					
A/D converter	4 channels (8-bit or 10-bit resolution)					
Packaging	64-pin LQFP					

Key Specifications, MB95310L Series

	MB95F314L	MB95F316L	MB95F318L	MB95F314E	MB95F316E	MB95F318E
ROM capacity	20 Kbyte	36 Kbyte	60 Kbyte	20 Kbyte	36 Kbyte	60 Kbyte
RAM capacity	496 Byte	1008 Byte	2032 Byte	496 Byte	1008 Byte	2032 Byte
Low-voltage detection reset	No			Yes		
Reset input	Dedicated					
Operating voltage	1.8 to 3.6 V					
Clock	On-chip CR oscillator (guaranteed accuracy $\pm 2\%$ after mounting) Selectable from external oscillator clock On-chip PLL					
LCD controller	Common signal outputs: Max 4 Segment signal outputs: Max 40					
Timers	Includes 8/16-bit composite timer (selectable from PWC, PWM, capture), 8/16-bit PPG timer, 16-bit reload timer, time-base timer					
Communication	Includes UART/SIO, I ² C					
A/D converter	4 channels (8-bit or 10-bit resolution)					
Packaging	80-pin LQFP					

Key Specifications, MB95350L Series

	MB95F354L	MB95F356L	MB95F358L	MB95F354E	MB95F356E	MB95F358E
ROM capacity	8 Kbyte	12 Kbyte	20 Kbyte	8 Kbyte	12 Kbyte	20 Kbyte
RAM capacity	240 Byte	496 Byte	496 Byte	240 Byte	496 Byte	496 Byte
Low-voltage detection reset	No			Yes		
Reset input	Dedicated			Selected by software		
Operating voltage	1.8 to 3.6 V					
Clock	On-chip CR oscillator (guaranteed accuracy $\pm 2\%$ after mounting) Selectable from external oscillator clock					
Timers	Includes 8/16-bit composite timer (selectable from PWC, PWM, capture)					
Communication	Includes LIN-UART, UART/SIO, I ² C					
A/D converter	6 channels (8-bit or 10-bit resolution)					
Packaging	24-pin SOP 24-pin TSSOP 32-pin QFN					

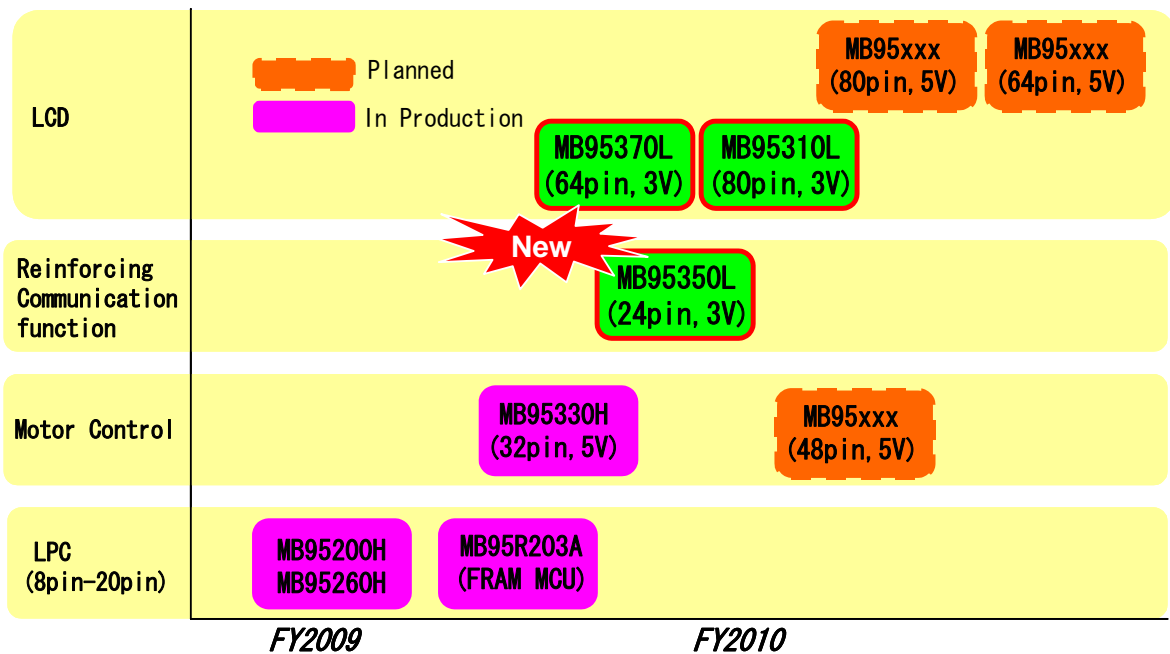


Figure 2. 8-bit Microcontroller Road Map