Fujitsu Expands its Line of 8-bit Microcontrollers to Include Products with Built-in Touch Sensor and Controller Functions

Optimized for touch key and touch panel applications in digital equipment and household appliances

Yokohama, Japan, June 19, 2012 — Fujitsu Semiconductor Limited today announced the addition of new products with touch sensor and controller functionality to its "New 8FX" family of high-performance 8-bit microcontrollers. These new products include two products from the 48-pin MB95870 Series, one product from the 32-pin MB95860 Series, and two products from the 24-pin MB95850 Series. At the initial stage, Fujitsu will begin shipping sample quantities of products in the MB95870 Series starting today.

The MB95870 Series, MB95860 Series, and MB95850 Series are being offered as low-cost, low-power microcontroller options for controlling the touch keys and touch panels used in a wide range of equipment, such as worldwide home electronics, office automation equipment, and digital equipment.

Touch sensor technology has traditionally been used in such applications as bank ATMs, automated ticket machines in train stations and restaurants, and also in office automation equipment, such as copiers and printers. In recent years, however, touch sensor technology has experienced rapid growth accompanying the spread of touch key and touch panel applications in household electronics, such as air conditioners, refrigerators, and washing machines. When compared to mechanical switches or resistive film touch key technology, capacitive touch key technology not only achieves smoother operation, but is also more resistant to dust, moisture, and wear. This array of features has made the capacitive method the preferred choice in touch-key technology. As the

Figure 1. Products Roadmap

marketplace for touch key and touch panel technology expands, the demand for touch sensors and controllers that govern their operations is also increasing. Furthermore, because of this widespread expansion, there is a strong demand for the microcontrollers for such systems to be equipped with touch sensor and controller functionality.

The MB95870 Series, MB95860 Series, and MB95850 Series meet these demands. These three series offer power-efficient microcontrollers with 36KB of built-in flash memory. In addition to highly sensitive and highly reliable capacitive touch sensor and controller functionality, these microcontrollers include various timers and communications functions that are useful for general-purpose applications, as well as peripheral circuits, such as A/D converters and analog comparators. New additions will include two products from the MB95870 Series, one product from the MB95860 Series, and two products from the MB95850 Series. Samples of new products from the MB95870 Series will begin shipping today.

At the same time, samples of 24 new products in the MB95650 Series will also begin shipping in phases starting today. With 1KB of flash memory capacity in a 24-pin package, these products are also equipped with peripheral circuits, such as 12-bit high-precision A/D converters, I^2C-bus interfaces, and LIN-UART. The MB95650 Series can also handle a wide range of operating voltages, with the ability to function on power supply voltages ranging from 1.8V to 5.5V.

Product Overview

1. **Highly sensitive and highly reliable touch technology (MB95870 Series, MB95860 Series, MB95850 Series)**
   These three series employ Adjacent Pattern Interference Suppression (APIS™) and Automatic Impedance Calibration (AIC™) features. By enabling precise settings to be implemented in the hardware, the burden on software is reduced while also enabling operation in a variety of different environments.
   In each series, the number of channels for touch sensors with controllers ranges from 5 to 12, offering an abundance of options to meet a variety of operational methods.

2. **Embedding external components reduces number of components**
   Because the internal CR oscillating circuit that runs the operating clock, the low-voltage detection circuit that detects a drop in voltage, and an analog comparator with reference voltage are built into the microcontrollers, the need for an external oscillator, reset IC, and operational amplifier is eliminated, thus contributing to a reduction in external components. The CR oscillator has a precision level of ±2%.

3. **High-performance flash memory with industry-leading re-write/read ability**
   The microcontrollers are embedded with industry-leading high-performance flash memory that can be re-written/read 100,000 times. Furthermore, a flash security function protects the customer's software from unauthorized external program reading.

Sample: Reference Price and Release Schedule

Product Name	Price (With TAX)	Delivery
MB95F876KPMC-G-SNE2	JPY230	From June 2012
MB95F866KPMC-G-SNE2	JPY190	From July 2012
MB95F856KPF-G-SNE2	JPY150	From July 2012
MB95F656EPF-G-SNE2	JPY90	From June 2012

Sales Target

1,800,000 pieces per month when in mass-production. (Total of 4 series)

For more information:

- [Fujitsu Semiconducutor](#)

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, please see: : http://jp.fujitsu.com/fsl/en/

Press Contacts

Fujitsu Semiconductor Limited
Public Relations Department

Inquiry:https://www-s.fujitsu.com/jp/group/fsl/en/release/inquiry.html

[Line-up]

MB95870 Series (6 Products)

Operating Frequency (Max.)	Package Lead-pitch / Size	Flash Memory/RAM
		36KB/1024B
16.25MHz	LQFP-48pin 0.5mm, 7.00mm x7.00mm	MB95F876KPMC-G-SNE2
	LQFP-52pin 0.65mm, 10.00mm x10.00mm	MB95F876KPMC1-G-SNE2

MB95860 Series (1 Product)

Operating Frequency (Max.)	Package Lead-pitch / Size	Flash Memory/RAM
		36KB/1024B
16.25MHz	LQFP-32pin 0.8mm, 7.00mm x7.00mm	MB95F866KPMC-G-SNE2

MB95850 Series (2 Products)

Operating Frequency (Max.)	Package Lead-pitch / Size	Flash Memory/RAM
		36KB/1024B
16.25MHz	SOP-24pin 1.27mm, 7.50mm x15.34mm	MB95F856KPF-G-SNE2
	TSSOP-24pin 0.65mm, 4.40mm x7.80mm	MB95F856KPFT-G-SNE2

MB95650 Series (24 Products)

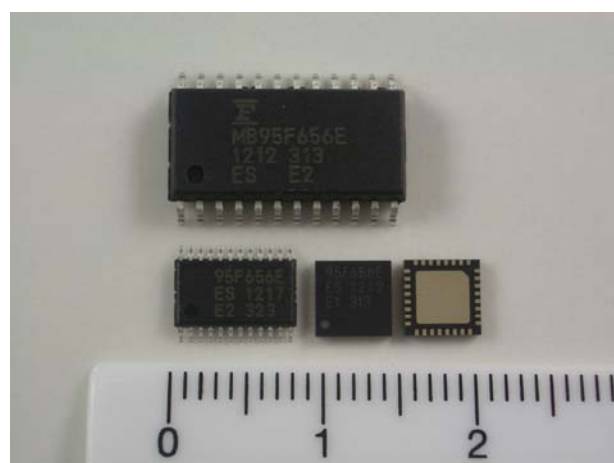| Operating Frequency (Max.)	Package Lead-pitch / Size	Optional reset function	Flash Memory/RAM 8KB/256B	12KB/512B	20KB/1024B	36KB/1024B
16.25MHz	SOP-24pin 1.27mm, 7.50mm x15.34mm	Dedicated reset input	MB95F652LPF-G-SNE2	MB95F653LPF-G-SNE2	MB95F654LPF-G-SNE2	MB95F656LPF-G-SNE2
		Low-voltage reset	MB95F652EPF-G-SNE2	MB95F653EPF-G-SNE2	MB95F654EPF-G-SNE2	MB95F656EPF-G-SNE2
	TSSOP-24pin 0.65mm, 4.40mm x7.80mm	Dedicated reset input	MB95F652LPFT-G-SNE2	MB95F653LPFT-G-SNE2	MB95F654LPFT-G-SNE2	MB95F656LPFT-G-SNE2
		Low-voltage reset	MB95F652EPFT-G-SNE2	MB95F653EPFT-G-SNE2	MB95F654EPFT-G-SNE2	MB95F656EPFT-G-SNE2
	QFN-32pin 0.5mm, 5.00mm x5.00mm	Dedicated reset input	MB95F652LWQN-G-SNE1	MB95F653LWQN-G-SNE1	MB95F654LWQN-G-SNE1	MB95F656LWQN-G-SNE1
		Low-voltage reset	MB95F652EWQN-G-SNE1	MB95F653EWQN-G-SNE1	MB95F654EWQN-G-SNE1	MB95F656EWQN-G-SNE1

[Figures]

Figure 1. MB95F876

Figure 2. MB95F656

shaping tomorrow with you