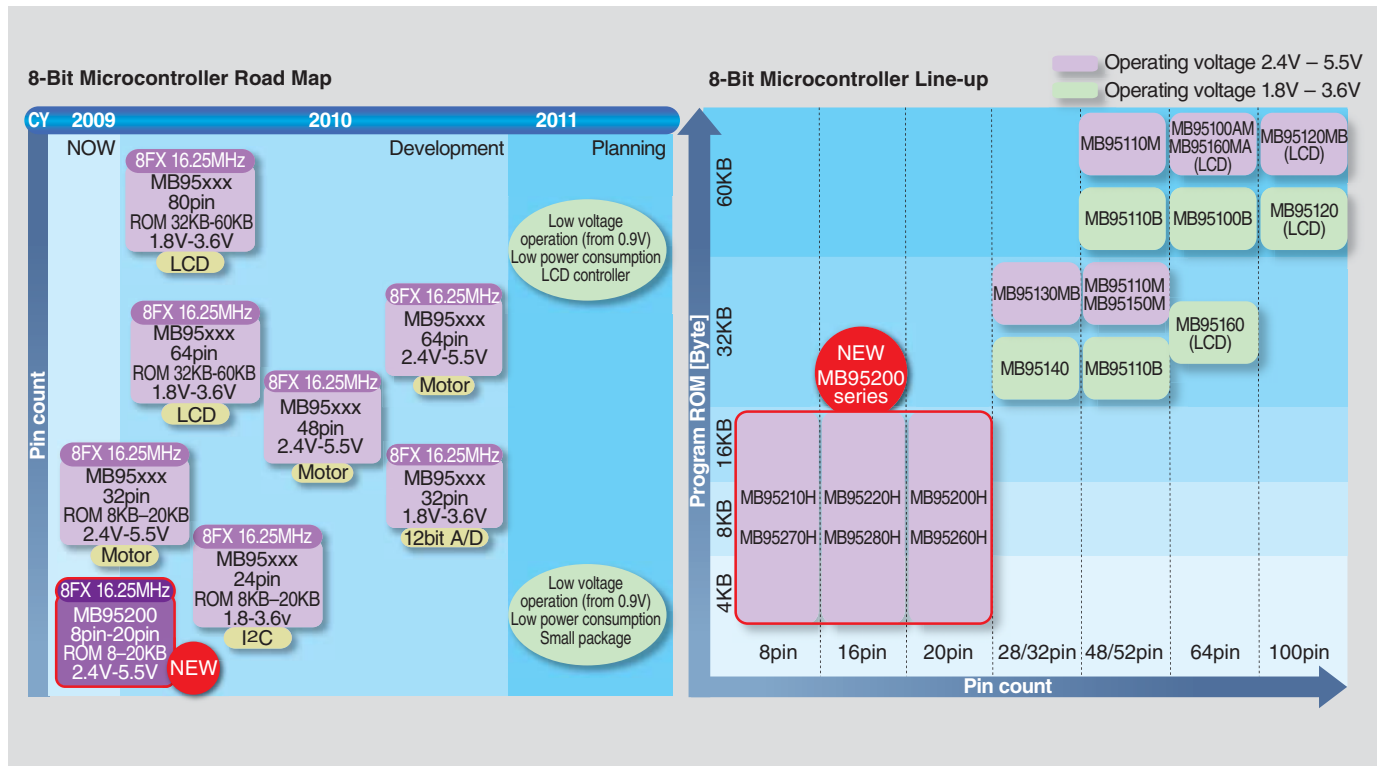


MB95200 Series

Low Pin Count Microcontrollers



Description

The Fujitsu F²MC-8FX Low-Pin Count series meets the growing demand of microcontroller use in small-scale, low-cost applications such as home appliances, electrical tools, consumer healthcare products and after-market car accessories.

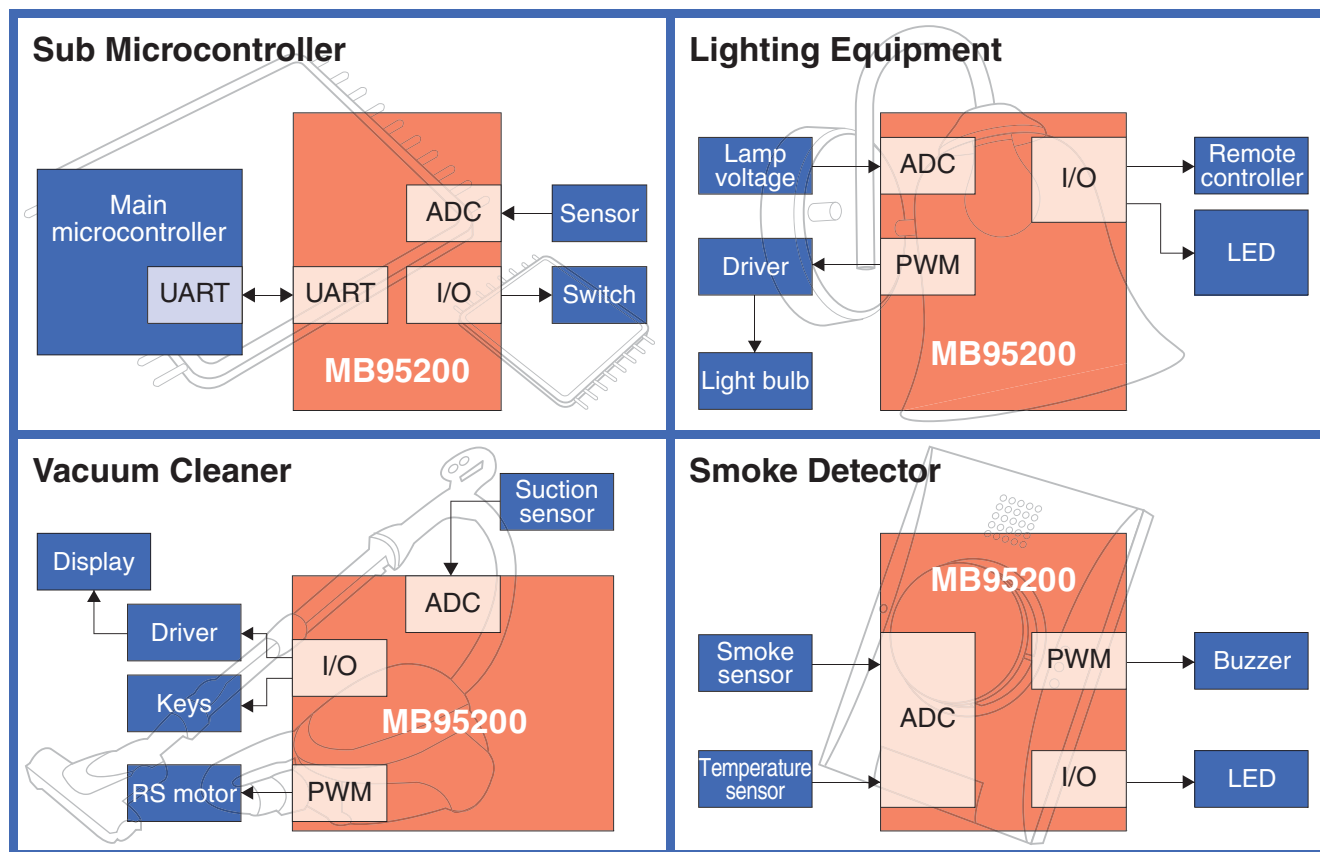
Flexible and highly functional, the MB95200 can be used for system control and as a sub microcontroller. For example, if I/O ports or A/D converters in the main microcontroller are insufficient due to system specification changes, the MB95200 microcontroller can support these functions as a sub-microcontroller. Or, if the standby current of the main microcontroller is too large, it can be utilized to manage the power supply.

The MB95200 features high performance, low voltage, embedded flash, precision on-chip RC oscillator and on-chip debug feature. The dual operation FLASH memory supports a boot loader implementation as well as a cost-effective emulation of an on-chip EEPROM by simultaneously executing program code while erasing/writing one of the Data Flash sectors.

The MB95200 series is easy to use and provides an optimal environment at each stage of the development process from program development to writing to Flash memory. The “BGM adapter” in-circuit emulator delivers one-wire on-chip debugging all the way through on-board writing during mass production.

MB95200 Series

► Applications



► Features

High Quality and Reliability

- 100K erase cycles
- 20-year data retention
- -40°C to 85°C operation range
- Built-in EEPROM Emulation with Dual Flash Memory

Safety and Security

- Flash content protection
- Low voltage reset
- Clock supervisor

Easy

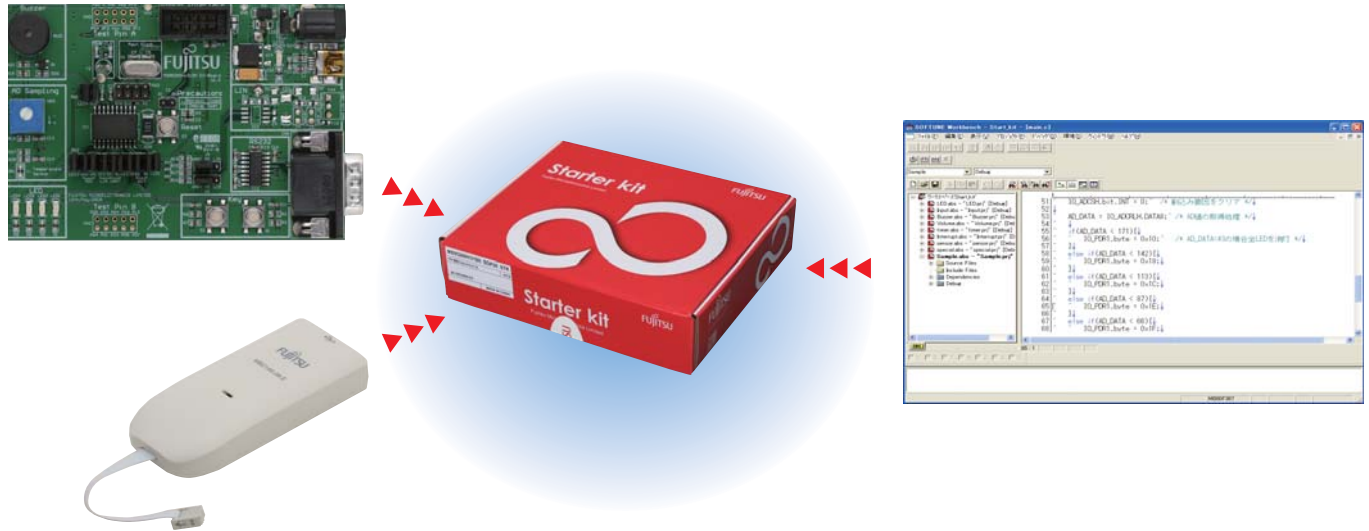
- +/- 3% On-chip RC oscillator
- Single-wire debug interface
- Low-cost development environment

Web Support

- Application note
- Discussion forum
- FAQ
- Hardware manual/datasheet
- Sample software
- IDE (Softune) free download
- WEB sales by catalog distributors
- ROHS report, ESD/Latch up report, and MSL report

Low Pin Count Microcontrollers

Development Tools



BGMA Overview

- Low cost
- Small size
- USB interface to PC/SOFTUNE™
- 1-Line UART interface to MB95200 series MCU (Total 5 pins needed to connect the target MCU board)
- Provide 2.9V to 5.5V power for evaluation application (Total current is limited to max 20mA)

Debug system platform

- Debug system platform consists of SOFTUNE, BGMA, MB95200 series MCU and user board

Starter Kit Overview Features

- Contains BGMA, evaluation board and sample codes
- User can easily study MB95200 series MCU and its peripherals based on starter kit board and sample codes
- Provide a platform for users to evaluate the MB95200 series MCU and its peripherals easily
 - Small size (about 100mm x 70mm)
 - Different start kit PCBs to support different MCU packages

MB95200 Series

Product Line-up

Series	MB95200H	MB95260H	MB95220H	MB95280H	MB95210H	MB95270H
Memory type	Flash memory					
CPU	CPU core					
	F2MC-8FX (8bit CISC CPU)					
	Number of basic instructions					
	136 instructions					
Internal CR oscillator	Minimum instruction execution time					
	61.5ns					
	Maximum operating frequency					
16.25MHz						
Main clock	1/8/10 MHz, Precision of $\pm 3\%$					
	Sub clock					
Typ: 100kHz, min: 50kHz, max: 200kHz						
Low power consumption mode	Sleep mode, stop mode, time base timer mode, watch mode					
Dual operation flash	-	o	-	o	-	o
Low voltage detection circuit	o					
Maximum number of I/O ports	17		13		5	
Watchdog timer	Hardware/software watchdog timer					
LIN-UART	1ch				-	
A/D converter	6ch		5ch		2ch	
	Selectable from 8-bit or 10-bit resolution Note: Precision guaranteed range: 4.0V to 5.5V					
Composite timer*	8bitx4ch		8bitx2ch			
	Selectable from 8-bit or 16-bit timer 2ch for 16-bit		Selectable from 8-bit or 16-bit timer 1ch for 16-bit			
External interrupts	6ch				2ch	
Clock supervisor	o					
Operating voltage	2.4V to 5.5V Note: 2.9V to 5.5V in debugging mode					
Guaranteed operating temp.	-40°C to +85°C					
Package**	SDIP-24/SOP-20/TSSOP-20		DIP-16/SOP-16		DIP-8/SOP-8	

Memory

Part number	ROM	RAM	Part number	ROM	RAM
MB95F262 MB95F272 MB95F282	8KB (4KB+4KB)	240B	MB95F202 MB95F212 MB95F222	4KB	240B
MB95F263 MB95F273 MB95F283	12KB (8KB+4KB)	496B	MB95F203 MB95F213 MB95F223	8KB	496B
MB95F264 MB95F274 MB95F284	20KB (16KB+4KB)	496B	MB95F204 MB95F214	16KB	496B

Products equipped with dual operation flash (MB95F262, MB95F272, MB95F282, MB95F263, MB95F273, MB95F283, MB95F264, MB95F274, MB95F284)
Notes: *Selectable from PMC, PWM, interval timer, or input capture. **QFN-32 in development.

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Printed in the U.S.A. MCU-FS-21306-4/2009