

FMC-8L (OTP) PC Serial Writer Specifications

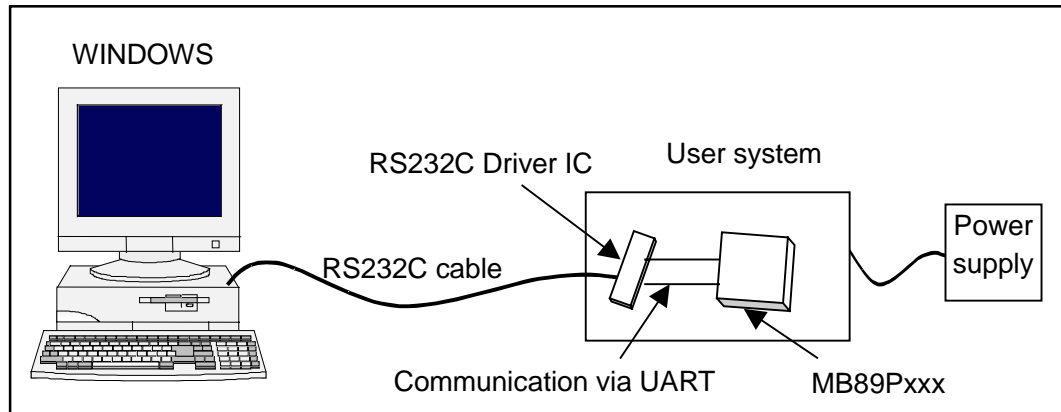
FMC-8L (OTP) PC Serial Writer
Specifications
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1. CONFIGURATION DIAGRAM



The connection of a personal computer (Windows) to a user system via the RS232C cable permits writing data to the OTP memory.

2. COMPATIBLE MICROCONTROLLERS

This software is compatible with the following microcontroller:

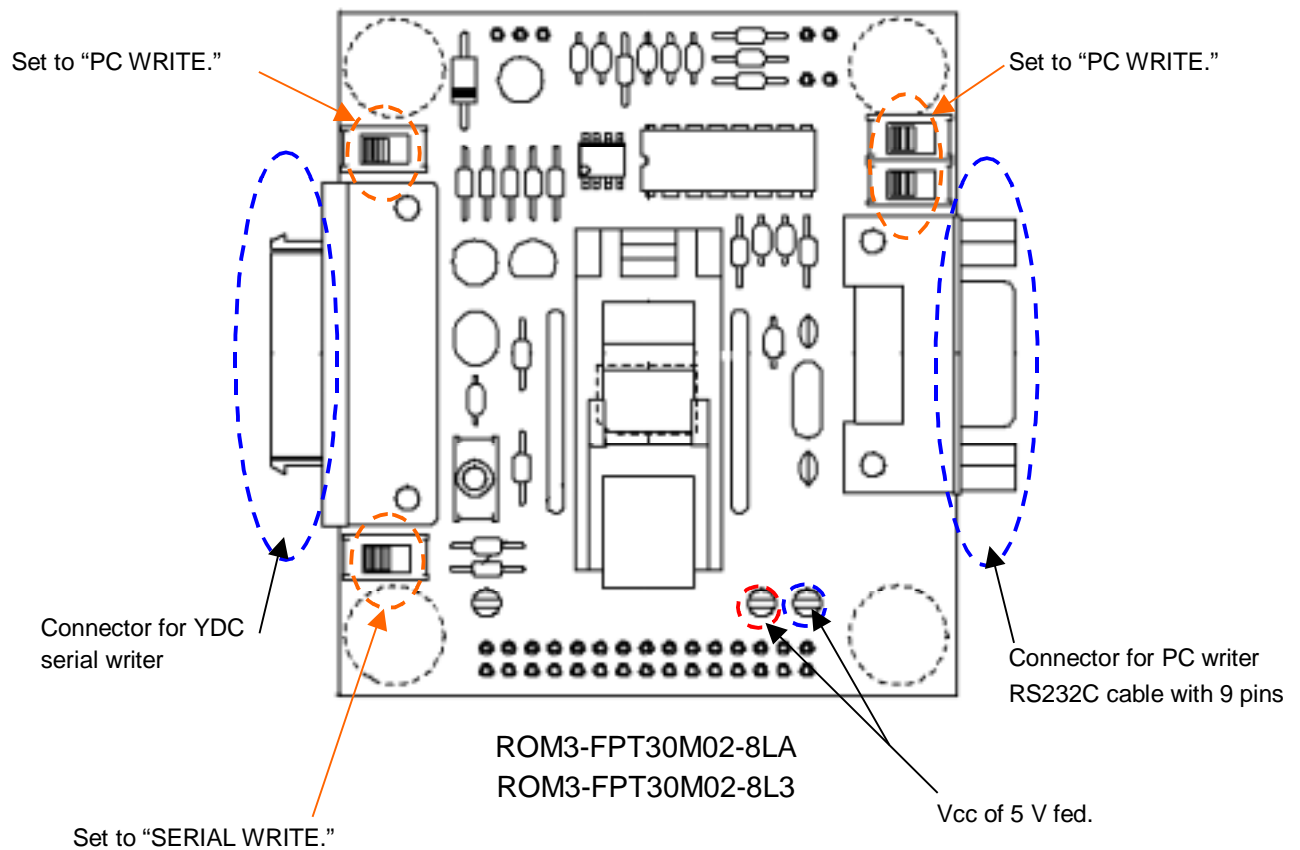
MB89P953B

MB89P215

3. EXAMPLE OF SETTING OF USER SYSTEM

- Setting of ROM3-FPT30M02-8LA (for MB89P935B) and ROM3-FPT30M02-8L3(for MB89P215)

When using the PC serial writer, connect a PC to this adapter via the RS232C cable (straight cable with 9 pins). Set each switch as follows.



4. PINS USED FOR ON-BOARD REPROGRAMMING

(1) Setting of pins for MB89P9535B

Pin	Function	Supplemental remarks
MOD0	Mode pin	This pin controls the Serial Write mode.
MOD1	Mode pin	This pin controls the Serial Write mode. In a write operation, it serves as the input pin of a write voltage of 9 V.
P40, P41, P43	Pins to start write program	When a High signal is input to P40, P41 and P43 and a Low to P42 and P37, the serial write program is started.
P42	Pins to start write program	
P37	Pins to start write program	
RSTX	Reset pin	A reset signal is input when a serial write operation is started.
SI	Pin for input of serial data	UART is used for a serial write operation.
SO	Pin for output of serial data	
Vcc	Pin to feed supply voltage	—
Vss	GND pin	—

(2) Setting of pins for MB89P215

Pin	Function	Supplemental remarks
MODA	Mode pin	This pin controls the Serial Write mode. In a write operation, it serves as the input pin of a write voltage of 9 V.
P07	Pins to start write program	When a High signal is input to P22 and a Low to P07 and P23, the serial write program is started.
P22,P23	Pins to start write program	
RSTX	Reset pin	A reset signal is input when a serial write operation is started.
UI	Pin for input of serial data	UART is used for a serial write operation.
UO	Pin for output of serial data	
Vcc	Pin to feed supply voltage	—
Vss	GND pin	—

5. INSTALLATION AND EXECUTION OF SOFTWARE

Uninstall the old version before installation.

When the installer is started and operated as directed, the installation is completed. Note that the installation might not be performed when a directory in a deep nest is specified as the install directory.

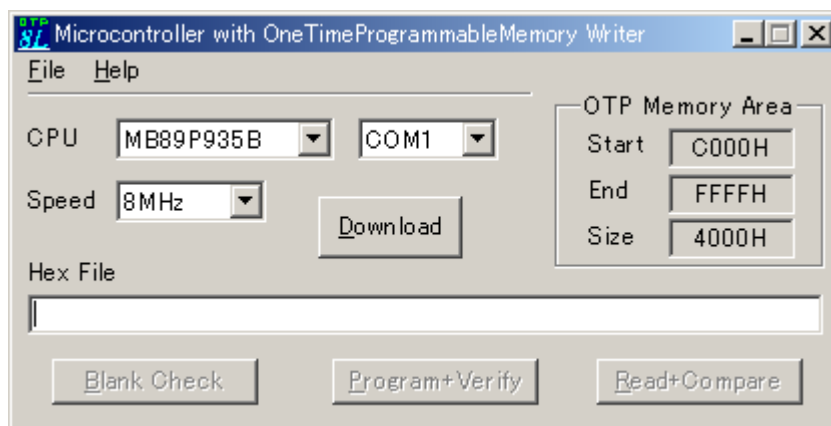
After installation, click the Windows **Start** button => **Program** => **FUJITSU FLASH MCU Programmer** => **FMC-8L (OTP)** to start the programmer software.

6. PROGRAMMER FUNCTIONS

The programmer can perform each operation of **Blank Check**, **Program + Verify**, and **Read + Compare** for OTP memory contained in the microcontroller.

- Main dialog box

Programmer software is started to open the dialog box as shown below.



- Overview of operating procedure

First, complete setting of the user system (microcontroller board) that data is programmed to (see **Chapter 3**). When starting program or changing the setting, it is necessary to reset the microcontroller on the user system and perform downloading (described later).

After terminating downloading normally, perform procedures such as BlankCheck and Programming.

6.1 Downloading

This section describes the operating procedure for downloading and the operating state of the program.

- (a) Specify the type of microcontroller used in the user system in the CPU. Select the type of microcontroller from the drop-down menu in the combo box.

The currently selectable type is:

MB89P935B

MB89P215

Note: Moving the focus over the combo box with the **Tab** key enables the settings in the combo box to be changed just by moving the cursor up and down.

- (b) Specify the frequency of the crystal oscillator input to the microcontroller. Select the frequency from the drop-down menu in the combo box.

The frequency of the crystal oscillator that can be specified for each type of microcontroller is limited as follows.

Product Type	Frequency of Crystal Oscillator (MHz)
MB89P935B	2, 4, 8
MB89P215	2, 4, 8

Notice: This program will not operate normally if the microcontroller uses a crystal oscillator frequency not listed in the above table.

- (c) Specify the COM port of the PC connected to the user system in COM.

Select the COM port from the drop-down menu in the combo box

The currently selectable ports are

COM1, COM2, COM3, COM4

(d) Downloading

Click the **[Download]** button in the center of dialog.

Then, the following dialog is opened.

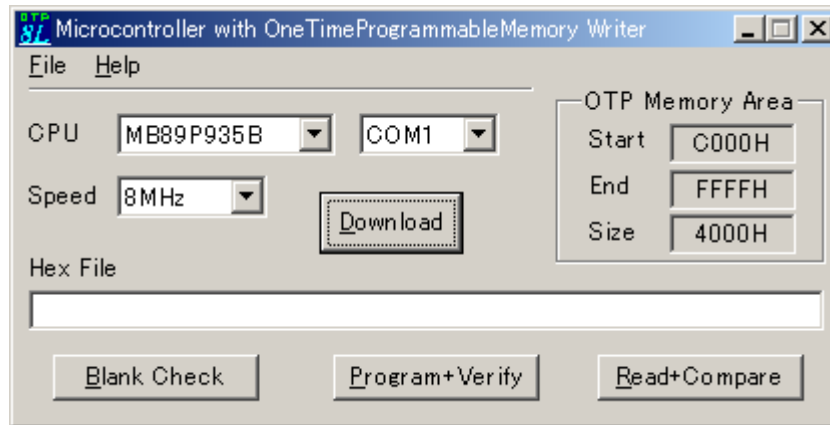


Input a reset signal to the microcontroller in this timing and click the **OK** button in the dialog.

When downloading is continued and processing is terminated normally, the **Blank Check**, **Program + Verify** and **Read + Compare** buttons in the main dialog becomes active and are enabled.

6.2 Blank Check, Erasing and Programming

This section describes how to specify **Hex File** and the processing and operation performed when the **[Blank Check]**, **[Program + Verify]**, and **[Read + Compare]** buttons are clicked.



(a) **Hex File:** Specifying of the file to be programmed to OTP memory

Specifies the Motorola S-format file to be programmed to OTP memory in the microcontroller. Drag and drop the file directly from Internet Explorer or select **[Hex File Select ...]** from the menu bar **[File]** to specify the S-format file from the file select window.

Be sure to specify Hex File to execute [Program + Verify] and [Read + Compare].

(b) **Blank Check:** Checking of all OTP memory areas

Checks whether all OTP memory is in the blank state (0xff).

(c) **Program + Verify:** Programming of data to OTP memory

Converts the Motorola-S format file specified in **[Hex file]** to a binary (work) file, and programs to memory in the microcontroller and verifies.

(d) **Read + Compare:** Comparing **Hex File** with data in OTP memory in microcontroller

Compares data in the Motorola-S format file specified in **[Hex file]** with data in the OTP memory in the microcontroller.

6.3 Specification for internal motorola S decoder

to be done.

7. STATUS OF OPERATION CHECK

- Specifications for PC used for operation check

PC: FMV 6450TX2
CPU: Pentium 450 MHz
OS: Japanese and English versions of Windows 98 SE, Windows Me, Windows NT4.0 SP6,
Windows 2000 SP3, Windows XP SP1
Memory: 192 MB

- Example of programming times

MB89P953B

Original Oscillation	Time to Program 16 KB of Data "Program + Verify"
8 MHz	Approx. 21 s

8. OTHERS

Error messages

No.	Message	Cause	Action
No.001	Download error	Downloading failed	Return the folder and file configurations to their original conditions as installed.
No.003	Timeout error	The microcontroller does not respond	Review connected conditions and settings of wiring.
No.006	Unable to open COM port	The COM port is disabled.	Check number of COM port connected.
No.007	Unable to open download file	Absence of the download file	Return the folder and file configurations to their original conditions as installed
No.008	Unable to gain file size	File access failed	Check whether the PC is unstable.
No.009	Unable to gain COM port info	The COM port is disabled.	Review the connection of COM port
No.010	Unable to change COM port setting	The COM port is disabled	Review the connection of COM port
No.011	Communication error	The microcontroller returned a communication error.	Re-execute the command or replace the microcontroller
No.015	COM port write error	The COM port is disabled	Review the connection of COM port
No.016	COM port read error	The COM port is disabled	Review the connection of COM port
No.017	File access error	The download file not read	Return the folder and file configurations to their original conditions as installed
No.018	Device error	Microcontroller returned device error.	Replace the microcontroller
No.020	Sum error	Microcontroller returned sum error.	Re-execute command or replace the microcontroller.
No.021	Coordination error	Communication matching was not found with microcontroller.	Reset and retry from beginning.

9. CAUTIONS

Fujitsu is not responsible for any trouble resulting from the use of this software.

No operation of this software on the NEC PC98 series of personal computers is assured.

This software is not intended for writing to mass-produced products.

When using this program, there are restrictions on frequencies that are input to the microcontroller as original oscillations. For details, see **(b)** of **Section 6.1**.