

EF7920F-100H User's Guide

Suisei Electronics System Co., Ltd
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1. General Description

The EF7920F-100H parallel writing unit is specially designed for the EFP-I and is mounted on the EFP-I.

Using the EF7920F-100H enables you to write and read to/from the 7900 Series Mitsubishi Electric flash memory built-in MCU.

The EF7920F-100H is mounted with an IC socket for a 100-pin 0.65mm-pitch QFP (100P6S-A).

The appearance of the EF7920F-100H is shown in Fig. 1.1.

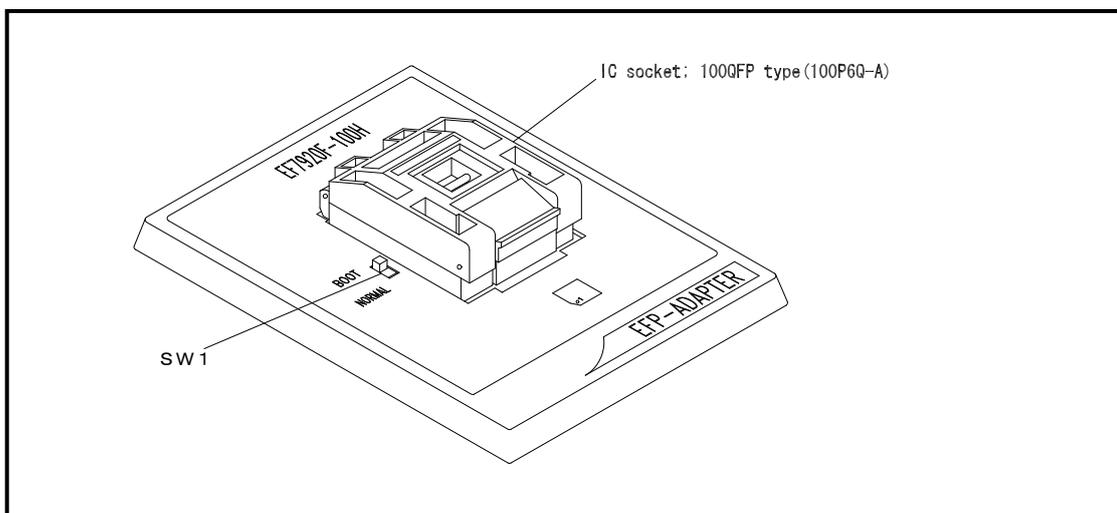


Fig. 1.1: Appearance of EF7920F-100H

2. MCU Insertion Method

To insert MCU, match pin No.1 of the IC socket on the EF7920F-100H with pin No. 1 of the MCU. Incorrect insertion will cause irreparable damage to the MCU, so be careful when doing so. The way to insert the MCU is shown in Fig. 2.1.

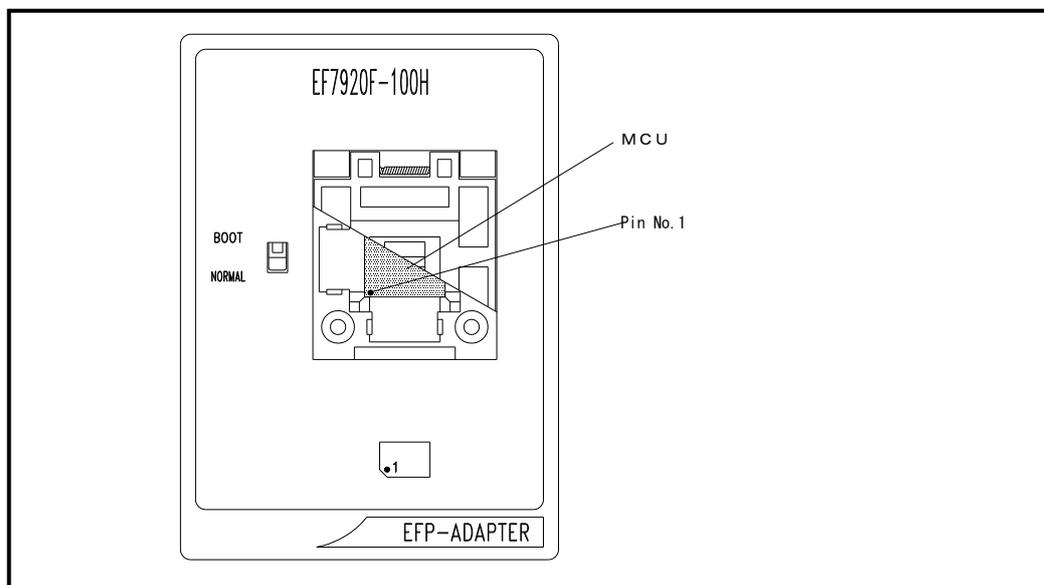


Fig. 2.1: MCU Insertion Method

3. Specifications

Specifications of the EF7920F-100H are listed in Table 3.1.

MCU Type	Memory Type	Corresponding MCU Name	Program Memory Area	SW1
M37902F8 (NORMAL)	Flash memory	M37902F8xHP	1000H-FFFFH	NORMAL
M37903F8 (NORMAL)	Flash memory	M37903F8xHP	1000H-103FFH	NORMAL
M379xxFC (NORMAL)	Flash memory	M37902FCxHP M37920FCxHP	2000H-1FFFFH	NORMAL
M379xxFG (NORMAL)	Flash memory	M37902FGxHP M37920FGxHP	2000H-3FFFFH	NORMAL
M379xxFx (BOOT)	Flash memory	M37902F8xHP M37902FCxHP M37920FCxHP M37920FGxHP	0H-3FFFH	BOOT
M37903F8 (BOOT)	Flash memory	M37903F8xHP	0H-1FFFH	BOOT
Remarks				
Operation clock: 4MHz (Supplied from ceramic oscillator on EF7920F-100H)				
Power source: Supplied from EFP-I				

Table 3.1: EF7920F-100H Specifications

4. Cleaning MCU Unit

To prevent faulty connections of the IC socket on the MCU unit, clean connector pins in the IC socket with a brush etc. at regular intervals according to the number of using.

5. SW1 Setting

Setting the SW1 of the EF7920F-100H enables you to read and write from/to BOOT area and NORMAL area. The method of setting each area is as follows:

(1) BOOT area setting

Set the SW1 of the EF7920F-100H to BOOT, and set the device parameter in the WinEFP environment settings dialog to "M379xxFx (BOOT)".

(2) NORMAL area setting

Set the SW1 of the EF7920F-100H to NORMAL, and set the device parameter in the WinEFP environment settings dialog to "M379xxFx (NORMAL)".

* Do not change the setting of the SW1 switch when the EFP-I's device LED (red) is lit.

6. ID Code Area (Only 7903 groups)

ID code area is provided in the internal flash memory of 7900 Series MCUs.

Write an optional ID code and its byte into the ID code area. MCUs for which an ID code has been written in the ID code area carry out ID code collation and the MCU's internal flash memory cannot be read, written in or cleared unless the ID code matches.

* Does not include when the ID code area is blank..

ID code area configuration is shown in Fig. 6.1.

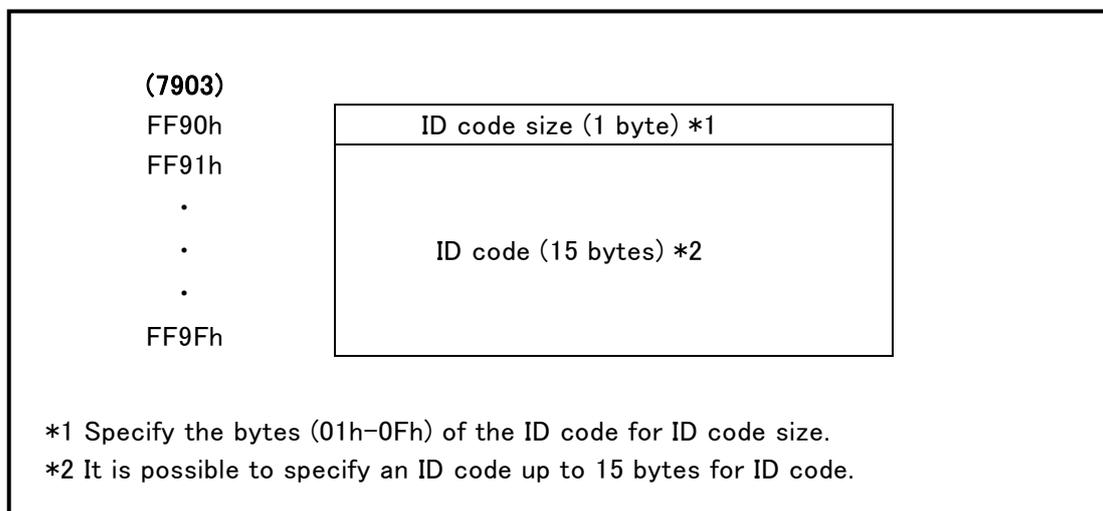


Fig. 6.1: ID Code Area Configuration

7. ID Collation Function (Only 7903 groups)

The ID code collation is carried out by inputting the ID code etc. for the ID collation parameter of the WinEFP environment setting dialog. Be sure to carry out the ID code collation if an ID has been written in the ID code area of the target MCU.

The commands of [Device] of the WinEFP window menu cannot be used if the ID code does not match.

* If the ID code area is blank, the ID collation is not carried out even if you input the ID code.

The ID collation parameter configuration is shown in Fig. 7.1.



Fig. 7.1: ID Collation Parameter Configuration

(1) Input format

The ID code input format is specified as ASCII or HEX.

(2) Top address

Specifies the top address of ID code area.

The top address is fixed at FF90h for the 7903 groups.

(3) ID code

Input the ID code.

(4) Save button

Saves input ID collation parameters in a file. When the save button is clicked, the file section dialog appears, so input the file name of your choice.

(5) Refer button

Reads the file in which ID collation parameters are saved and sets parameters according to the contents of the file. When the refer button is clicked, the file section dialog appears, so select the file of your choice.

- An example of the operating procedure for ID collation is shown below. The ID code area of the target MCU's internal flash memory is set as follows.

Device type	7903 groups
ID code (FF91h-FF96h)	53h, 55h, 49h, 53h, 45h, 49h
ID code size (FF90h)	06h

1) Check if FF90h is set for the top address parameter. If the device type parameter is set to "M37903F8", FF90h is automatically set as the top address of the code collation parameter. The ID code will not match if an address other than FF90h is set.

2) Set ASCII or HEX for the input format parameter, and input an ID code for the ID code parameter.

An example of ID code parameter setting is given below.

- * As the ID code size is calculated automatically, it is not necessary to input into the ID code parameter.

For ASCII:

ID Code: SUISEI

For HEX:

ID Code: 53 55 49 53 45 49
S U I S E I

8. Block Set Command (Only 7920, 7902 groups)

The block set command handles the lock bit of each block.

Setting a block's lock bit to "Lock" allows you to protect the block from being written to or erased (i.e. the block is locked).

8.1 Screen Layout

Fig. 8.1 shows the screen layout of the block set command.

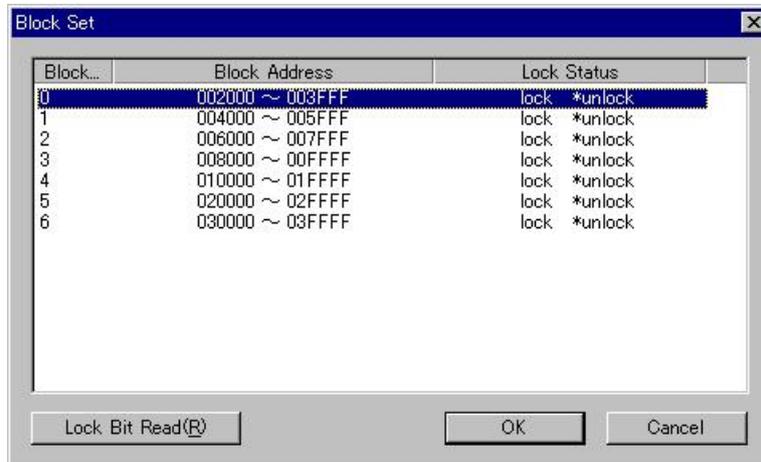


Fig. 8.1: Screen Layout of Block Set Command

- (1) Block number
Indicates the block number assigned to each block.
- (2) Block address
Indicates the start address and the end address of each block.
- (3) Lock status
Indicates the lock bit status of each block.
*Lock Unlock <-- The lock bit is locked.
Lock *Unlock <-- The lock bit is unlocked.
- (4) Read Lock Bit button
Reads the content of the lock bit from a target MCU, and indicates the lock bit status according to the content.
- (5) OK button
Clicking the OK button writes to the target MCU the contents of the lock bits of the blocks set to "Lock".
- (6) Cancel button
Cancels the command.

8.2 Setting the lock bit

Here follow the steps to set a lock bit to "Lock".

1) Position the mouse cursor on an arbitrary line and double-click. Then the lock bit status indicated in the lock status switches. Set it to "Lock".

2) Click the OK button. Then the content of the lock bit of the block set to "Lock" will be written to the target MCU.

* Once the content of the lock bit is written to the MCU by use of the OK button, the block set command cannot return a locked block back to the unlocked status.

* For unlocking a locked block, see 9. Erase Command.

9. Erase Command

The erase type parameter contained in the erase command enables you to erase by block or erase all blocks. The erase command parameter input dialog is shown in Fig. 9.1.

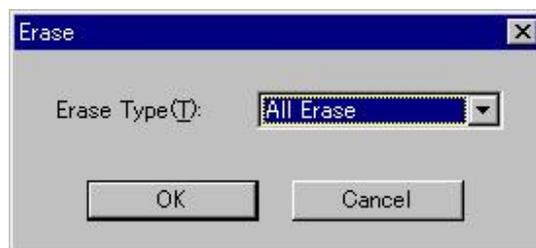


Fig. 9.1: Erase Command Parameter Input Dialog

(1) Erase type

All Erase and block address area (xxxxxxH - xxxxxxH) are displayed in the drop-down list to the right of the erase type parameter display field (displayed by clicking the arrow pointing downward with the mouse). Select the block erase method.

(2) OK button

Execute Block erase command.

(3) Cancel button

Cancel the command.

- To erase a locked block, follow the steps given below. These steps also allow you to unlock a locked block. (Only 7920, 7902groups)

1) Choose [Environment Settings] from the [Option] menu in the WinEFP window to open the environment settings dialog box.

Set the lock type parameter to "Lock bit ineffective", then click the OK button.

2) Choose [Erase] from the [Device] menu in the WinEFP window to open the erase command parameter input dialog box.

Set the erase type parameter to the locked block, then click the OK button.

10. Parameter Input by Device Command

Writing in MCU and the read area specification are different according to the MCU type. The parameter input format of address area when writing and reading data to/from the MCU by the device command is given below

10.1 7920, 7902 groups

(1) Writing into MCU

When writing data from MCU, specify the address area by the page. Because one page of data is 256 bytes, the input format for the start and end addresses is set as follows.

A parameter error results if addresses outside the page unit are input for the start and end addresses.

Input format:

Start address xxxx00h

End address xxxxFFh

(2) Reading from MCU

When reading data from MCU, specify the address area by the word. Input the even number into the start address of blank, read and verify command, and input the odd number into the end address.

A parameter error results if addresses outside the word unit are input for the start and end addresses.

10.2 7903 groups

Specify the address area when data is written and read to MCU by the word. Input the even number into the start address of blank, read and verify command, and input the odd number into the end address.

A parameter error results if addresses outside the word unit are input for the start and end addresses.