

# EF3062F-100H User's Guide

Second edition issued May, 1999

## 1. General Description

The EF3062F-100H parallel writing unit is specially designed for the EFP-I and is mounted on the EFP-I. Using the EF3062F-100H enables you to write and read to/from the Mitsubishi Electric flash memory built-in MCU. The EF3062F-100H is mounted with an IC socket for a 100-pin 0.5 mm pitch QFP (100P6Q-A). The appearance of the EF3062F-100H is shown in Fig. 1.1.

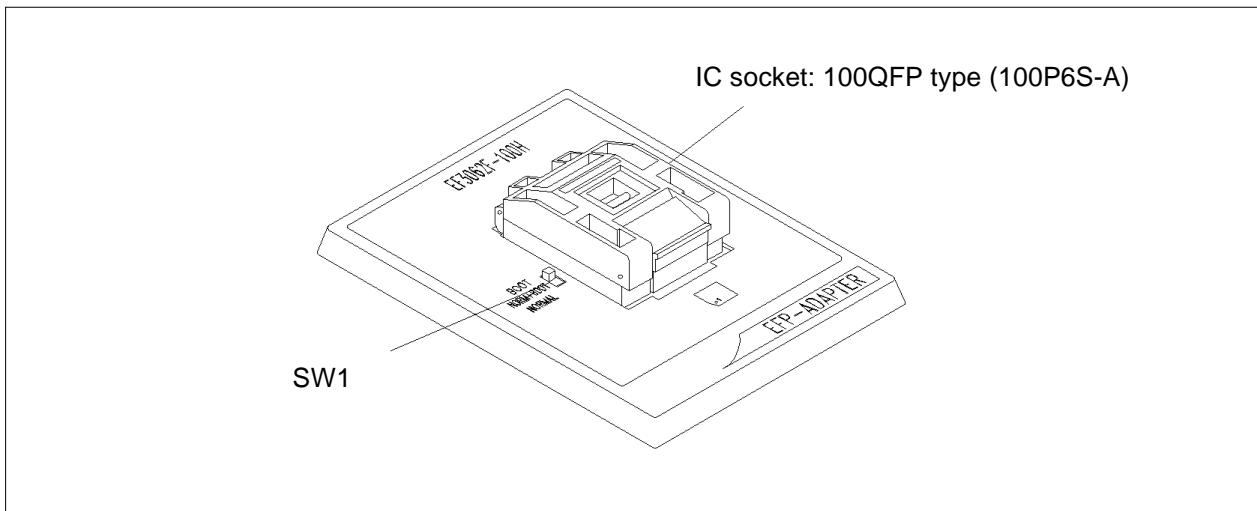


Fig. 1.1: EF3062F-100H

## 2. MCU Insertion Method

To insert the MCU, match pin No. 1 of the IC socket on the EF3062F-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.

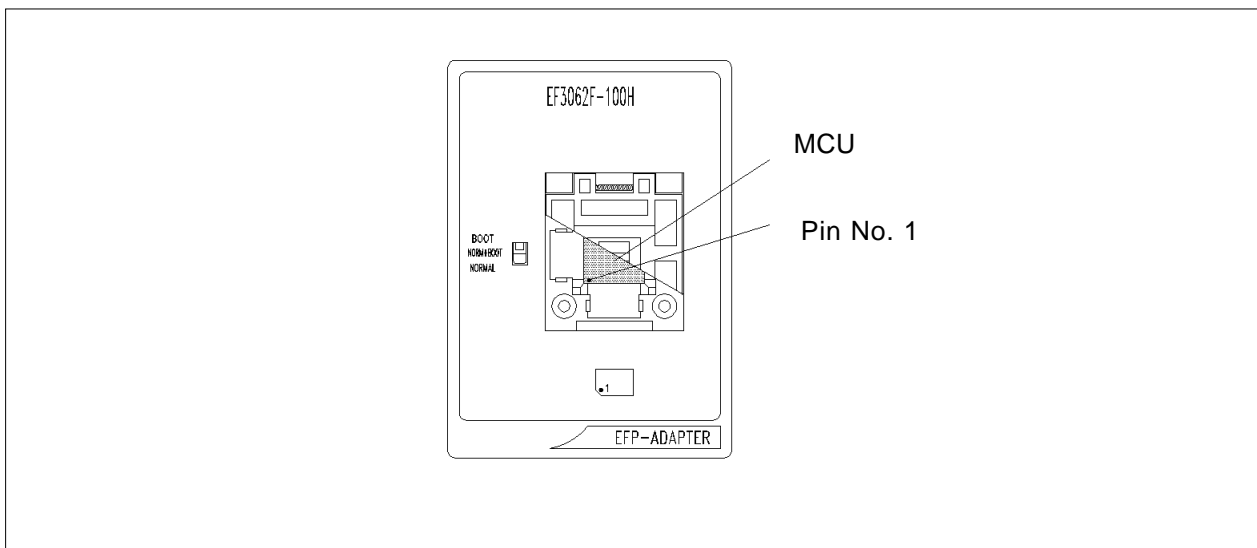


Fig. 2.1: MCU Insertion Method

### 3. Specifications

Specifications of the EF3062F-100H are given in Table 3.1.

**Table 3.1: EF3062F-100H Specifications**

MCU Type	Memory Type	Corresponding MCU Name	Program Memory Area	SW1
M3062XFG(BOOT)	Flash memory	M30624FGXGP	FE000H - FFFFFH	BOOT
M3062XFG(Normal)	Flash memory	M30624FGXGP	C0000H - FFFFFH	Normal
Remarks <ul style="list-style-type: none"><li>• Operation clock: 2MHz (Supplied by ceramic oscillator on EF3062F-100H)</li><li>• Power source: Supplied from EFP-I</li></ul>				

### 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 SW1 of the EF3062F-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 SW1 of the EF3062F-100H to BOOT, and set the device parameter in the WinEFP environment settings dialog to "M3062xFG (BOOT)."

(2) Normal area setting

Set SW1 of the EF3062F-100H to NORMAL, and set the device parameter in the WinEFP environment settings dialog to "M3062xFG (NORMAL)."

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

\* If you want to set SW1 to "NORM + BOOT" and read and write in the normal and boot areas all at once, see "9. Device batch Macro Command".

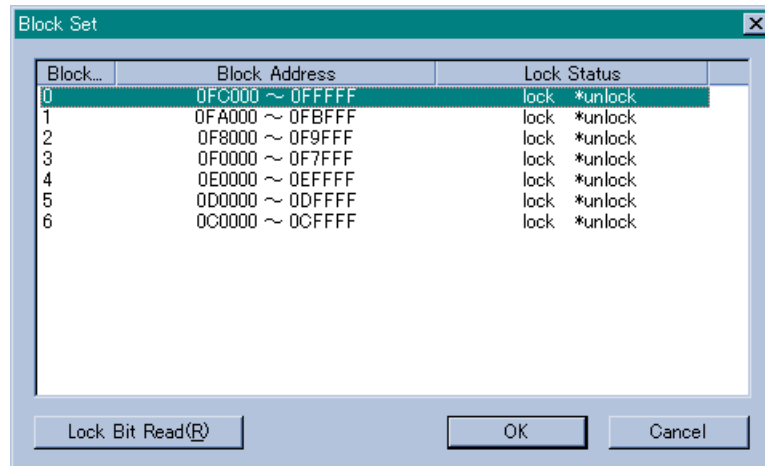
## 6. Block Set Command

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).

### 6.1 Screen Configuration

The screen configuration for the block set command is shown in Fig. 6.1.



**Fig. 6.1: Block Set Command Screen Configuration**

**(1) Block No.**

Indicates block No. for each block.

**(2) Block address**

Indicates top and end address for each block.

**(3) Lock status**

Indicates lock bit status for each block.

\* lock          unlock    ← Lock bit is locked.  
lock          \* unlock   ← Lock bit is unlocked.

**(4) Lock bit read button**

Reads lock bit data from target MCU, and indicates lock bit status according to data contents.

**(5) OK button**

Clicking the OK button writes lock bit data of block set to lock in target MCU.

**(6) Cancel button**

Cancels command.

## 6.2 Lock Bit Setting

The procedure for setting lock bit to lock is as follows:

- (1) Position the mouse cursor on the desired line and double-click to switch lock bit status in lock bit status, and set to lock side.
- (2) Click the OK button to write lock bit data of block set to lock in target MCU.

\*After writing lock bit data in the MCU with the OK button, the block set to lock status will not revert to unlock status by block set command.

\*To change a locked lock bit back to unlocked, see “7. Erase Command”.

## 7. 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. 7.1.

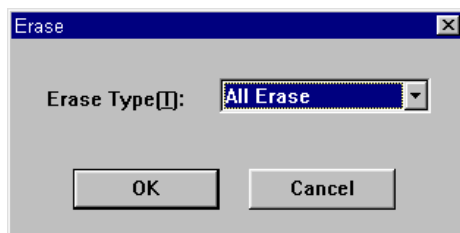


Fig. 7.1: Erase Command Parameter Input Dialog

### (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

Executes block erase.

### (3) Cancel button.

Cancels command.

\* To erase locked blocks, use the following procedure. The procedure can also be used to unlock locked blocks.

- (1) Select [Option] —> [Environment settings] from the WinEFP window menu and open the environment settings dialog. Set the lock type parameter in the device used to “Lock bit ineffective” and click the OK button.
- (2) Select [Device] —> [Erase] from the WinEFP window menu and open the erase command parameter input dialog. Set the erase type parameter to locked block and click the OK button.

## 8. Parameter Input by Device Command

M16C/60 Series parallel I/O MCUs write data by the page, and read by the word. Address area parameter input formats for reading and writing from/to the MCU by device command are as follows:

### (1) Writing to MCU

Specify address area by the page to write data from the MCU. Because one page of data is 256 bytes, input format for start and end address of program and device commands is set as follows.

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

Input format:

Start address      XXXX00H

End address        XXXXFFH

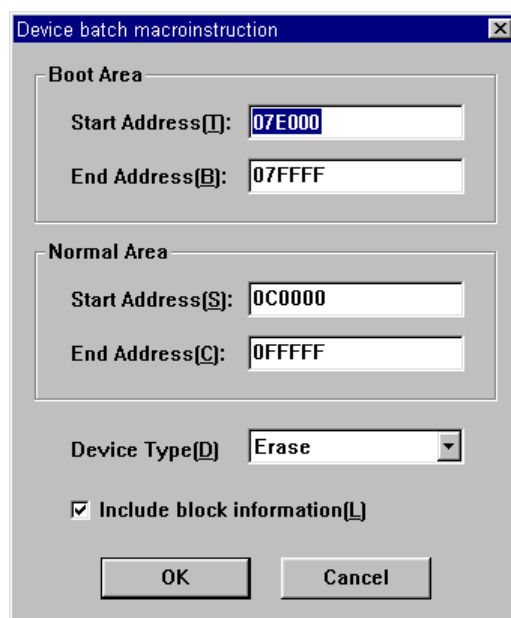
### (2) Reading from MCU

Specify address area by the word to read data from the MCU. Input an even numbered address for starting addresses for blank, read and verify, and an odd numbered address for end address. A parameter error results if addresses outside the word unit are input for start and end address.

## 9. Device Batch Macro Command

The device batch macro command is used for simultaneous reading and writing in the normal and boot areas of the MCU. To use the device batch macro command, set SW1 of the MCU unit to "NORM + BOOT."

Use the command to read data from an MCU in which data has already been written and write read data into a blank MCU. The parameter input dialog of the device batch macro command is shown in Fig. 9.1.



The dialog box titled "Device batch macroinstruction" contains two main sections: "Boot Area" and "Normal Area". The "Boot Area" section has input fields for "Start Address(I):" with the value "07E000" and "End Address(B):" with the value "07FFFF". The "Normal Area" section has input fields for "Start Address(S):" with the value "0C0000" and "End Address(C):" with the value "0FFFFFFF". Below these sections is a "Device Type(D)" dropdown menu currently set to "Erase". At the bottom, there is a checked checkbox labeled "Include block information(L)" and two buttons: "OK" and "Cancel".

Fig. 9.1: Device Batch Macro Command Parameter Input Dialog

### (1) Start and end address (boot area)

Specifies area for reading and writing from/to boot area. For this parameter, specify the area from 7E000H to 7FFFFH.

\*Because normal area and address space overlap for boot area, a work area of 7E000H to 7FFFFH in the EFP-I's internal RAM is allotted to the boot area. Fig. 9.2 shows a sketch drawing of the work area.

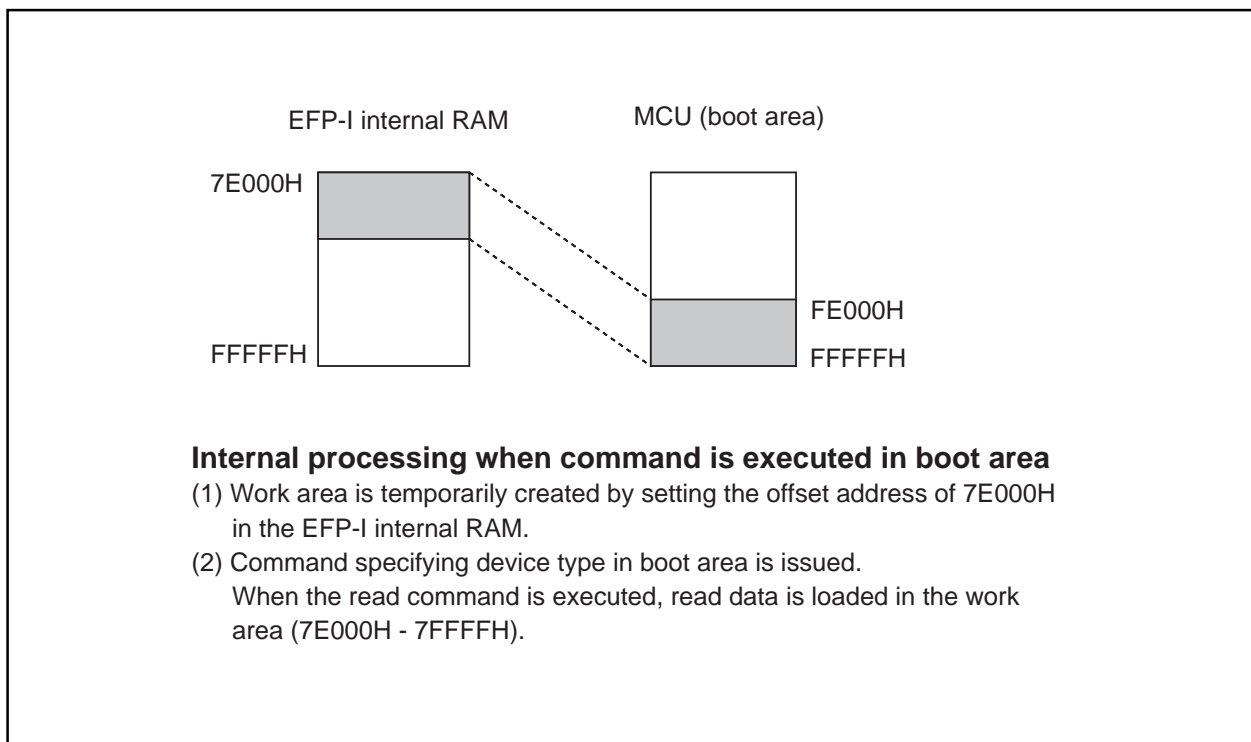


Fig. 9.2: Work Area

### (2) Start and end address (normal area)

Specifies area for reading and writing from/to normal area. Specify the area within the normal area of using device.

### (3) Device type

Specifies command to be issued. Select from the drop-down list to the right of the parameter display field (displayed by clicking the arrow pointing downward with the mouse).

### (4) Include block information

When the parameter's check box is set to ON, lock bit data of block specified by the start and end address parameter is automatically read and written. Valid commands for this parameter are as follows:

\* Erase

Erases specified area of data, and unlocks locked blocks of specified area.

\* Read command

Reads data of specified area and block lock bit data.

\* Program command

Writes data of specified area and block lock bit data. As for block lock bit data to be written, writes data read by read or block read.

**(5) OK button**

Executes device batch macro command.

**(6) Cancel button**

Cancels command.

**\* Usage example of device batch macro command**

An example of reading data from an MCU in which data has already been written and writing read data into a blank MCU is given below.

- (1) Set SW1 of the EF3062F-100H to "NORM + BOOT," and select [Device] —> [Device batch macro] from the WinEFP menu.
- (2) Insert the MCU into which data has already been written into the EF3062F-100H. Set the desired start and end address for the device batch macro command, set the device type to "read," and click the OK button. (When reading block lock bit, set the "Include block information" check box to ON.) If the command ends normally, remove the MCU from the EF3062F-100H.
- (3) Insert the blank MCU into the EF3062F-100H. Set the desired start and end address, set the device type to "program," and click the OK button. (If the "Include block information" check box is set to ON, block lock bit data read by "read" is automatically written.)

## **10. Automatic offset address for EFP-I's internal RAM**

The capacity of the EFP-I's internal RAM is 512 Kbytes, so the area from 0H to 7FFFFH can be used. The address area of the M30624FG's internal flash memory is C0000H to FFFFFH, so the area of the EFP-I's internal RAM is insufficient. WinEFP is therefore designed so that the 80000H HEX offset address is set automatically, 0H of the EFP-I's internal RAM becomes 80000H, and the end address becomes FFFFFH.

\* Specify address 80000H to FFFFFH for the command start and stop address parameter in [Edit] of the WinEFP window menu. Because of the automatic offset (80000H), addresses 0H to 7FFFFH cannot be used.

\* The automatic offset 80000H is not displayed for HEX offset address, etc. When the address is input for HEX offset, etc., the address input for 80000H is added and the offset is set.