

EF306KF-144R User's Guide

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1. General Description

EF306KF-144R is a Flash MCU programming adapter designed for the programmer main unit, EFP-I. The adapter (EF306KF-144R) installed on the top of the programmer (EFP-I) allows user to program Mitsubishi 16-bit Flash MCUs, specifically for M16C/6K7 Group MCUs. The adapter is equipped with a 144-pin clamshell socket supporting 144-pin 0.4mm LQFP package (Type No: 144PFB-A).

Figure 1.1 shows the adapter appearance.

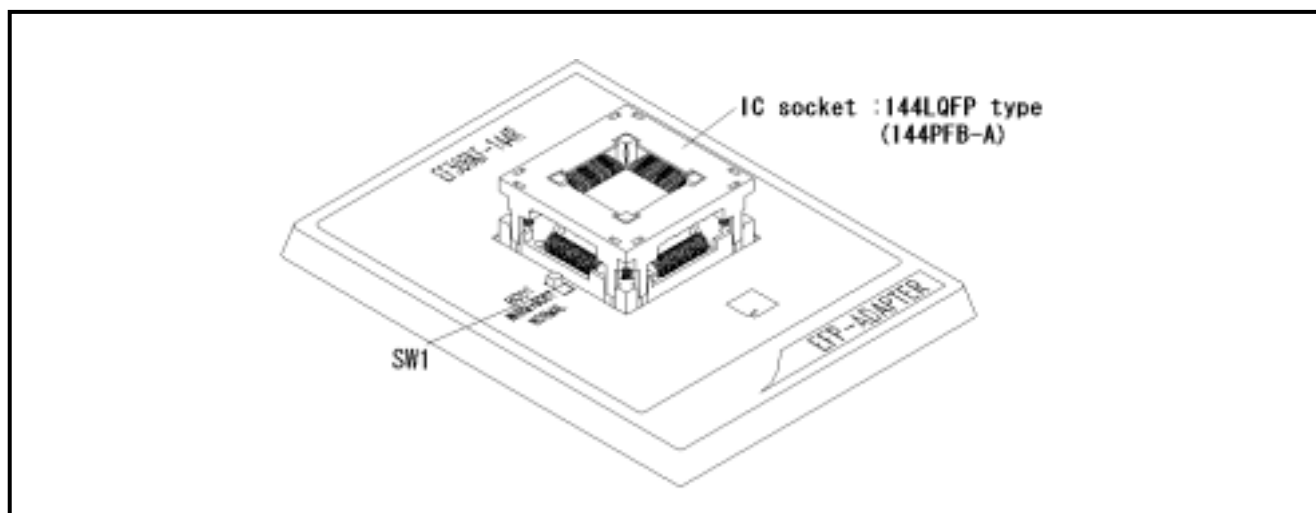


Figure 1.1: Appearance of EF306KF-144R

2. MCU Insertion Method

To program the MCU, the MCU must be mounted on the socket and latch the clamshell top. The MCU orientation must be properly matched to the socket. Figure 2.1 shows the location of pin No. 1 on the socket. Incorrect MCU insertion may damage the MCU.

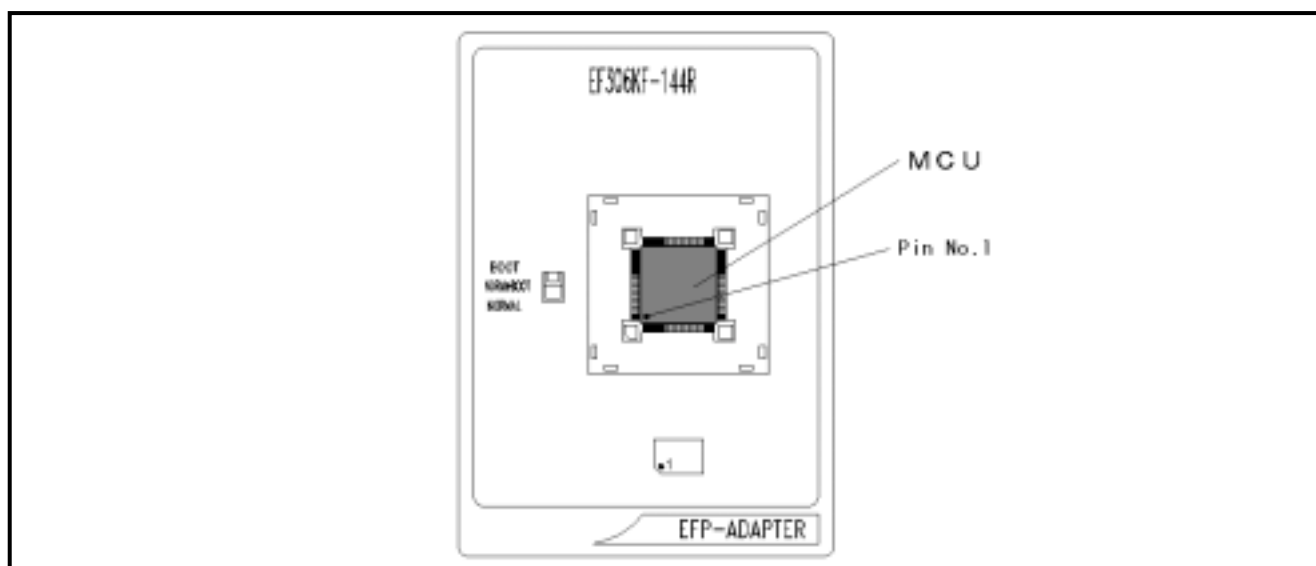


Figure 2.1: Pin Orientation of The socket

3. Specifications

Specifications of the EF306KF-144R are listed in Table 3.1.

Table 3.1: EF306KF-144R Specifications

MCU Type	Memory Type	Corresponding MCU Name	Program Memory Area
M306K7F8L (BOOT)	Flash memory	M306K7F8LRP	FF000H-FFFFFFH
M306K7F8L (NORMAL)	Flash memory	M306K7F8LRP	EF000H-FFFFFFH
Remarks · Operation clock: 2MHz (Supplied from ceramic oscillator on EF306KF-144R) · Power source: Supplied from EFP-I			

4. Socket Cleaning

To prevent faulty connection between the socket and MCU, periodical socket junction cleaning is recommended, especially junctions that contact to the MCU pins.

5. SW1 Setting

Setting SW 1 of the EF306KF-144R 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 EF306KF-144R to Boot, and set the device parameter in the WinEFP environment settings dialog to “M306K7F8LRP(BOOT)”.

(2) Normal area setting

Set SW1 of the EF306KF-144R to Normal, and set the device parameter in the WinEFP environment settings dialog to “M306K7F8(NORMAL)”.

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

6. 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 Figure 6.1.

*This command has not been described in the WinEFP manual.



Figure 6.1: 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 the block erase command.

(3) Cancel button

Cancels the command.

7. Parameter Input by Device Command

M16C/6K7 Series parallel I/O MCUs read and write by the word. Address area parameter input formats for reading and writing from/to the MCU by device command are as follows.

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

8. Automatic offset address for EFP-I'S internal RAM

The capacity of the EFP-I's internal RAM is 512Kbytes, so the area from 0H to 7FFFFh can be used. The address area of the M16C/6K7 series internal flash memory is EF000h 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.