

EF1SRP-01US2 Supplement (38D2/D5 Flash Edition)

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1. General Description

This supplement contains information required for reading, writing and clearing data to Renesas Technology 38D2/38D5 MCU with built-in flash memory. The supplement can be referred in case of using EF1SRP-01U in EFP-S2/EFP-S2V.

2. Operating Environment and Corresponding MCU

2.1 Operating Environment

Use the MCU mentions in this supplement in an environment as follows.

Table 2.1: Operating Environment List

MCU Group Name	EFP-S2 Monitor Version	WinEFP2 Version	TBL Version
38D2/38D5 GroupFlash edition	Ver.1.00.90 or later	Ver.1.02.37 or later	EF1SRP-01US2.TBL Version :Ver.1.02.54or later EF1SRP-01U.TBL Version :Ver.1.03.99a or later
Each S/W version number can be referred to [Help] ? [About] in WinEFP2 window menu. If your S/W version of EFP-S2 is old one, download the latest version data from the website below. <EFP-S2's latest S/W free download site > http://www.suisei.co.jp/verup/verup_e.htm			

2.2 Corresponding MCU

A corresponding MCU list is shown in Table.2.2.

Table2.2: Corresponding MCU list

Device type	Reading board	VDD Power supply method	Corresponding MCU name	Program Memory Area
M38D2xFF/M38D5xFF	User target board	EFP-S2/S2V 3.3V output	M38D29FFHP M38D29FFFP M38D59FFHP M38D59FFFP	1000h ~ FFFFh
		EFP-S2/S2V 5V output		
		User target Input		
M38D2xFF/M38D5xFF (MS Series)	MS series board *1	EFP-S2 5V output		

*1) about product type name, correspondence MCU of MS series board, please refer to 3.MS series boards.

Note at the time of the device type

Please use it by the device type and the combination of reading board.

If you use it by a wrong combination, the problem may occur like "an abnormality electric current drifts" and "reading is not possible" etc.

3. MS Series board

For reading of 38D2 /38D5 group Flash edition MCU, we sell MS series board for serial input and output modes.

Fig.3.1 shows a list of products of MS series board.

Fig.3.1 38D2,38D5 Group Flash edition MS series board for serial I/O mode

Name	Corresponding package	Corresponding M C U
MS38D2-64H	PLQP0064KB-A(64P6Q-A)	M38D29FFHP
MS38D2-64U	PLQP0064GA-A(64P6U-A)	M38D29FFFP
MS38D5-80H	PLQP0080KB-A(80P6Q-A)	M38D59FFHP
MS38D5-80F	PRQP0080GB-A(80P6N-A)	M38D59FFFP

* Please inquire for the prices of each MS series board to sales agent and us.

4. Pin Connection

Table 4.1 lists the connection of target connection cable pin of the 38D2/D5 Group.

Table 4.1: Connection of the Target Connection Cable Pin

Pin No. (EF1SRP-01U/ -01US2 side)	Target End Wire Color	Signal	4-Wire Cable Pin No.	MCU Connection Pin For Serial Input/Output	Input/Output (writer side)
1	Orange/red dotted 1	GND	1	Connects to VSS pin *4	-
2	Orange/black dotted 1				
3	Gray/red dotted 1	T_VPP	4	Unconnected	-
4	Gray/black dotted 1	T_VDD	5	Connects to VCC pin *1	Input
8	White/black dotted 1	T_PGM/OE/MD	8	Connects to CNVSS pin	Output
9	Yellow/red dotted 1	T_SCLK	6	Connects to SCLK pin	Output
10	Yellow/black dotted 1	T_TXD	7	Connects to RXD pin	Output
11	Pink/red dotted 1	T_RXD	2	Connects to TXD pin*2	Input
12	Pink/black dotted 1	T_BUSY	3	Connects to BUSY pin	Input
14	Orange/black dotted 2	T_RESET	9	Connects to RESETB pin *3	Output
15	Gray/red dotted 2	GND	10	Connects to VSS pin *4	-
16	Gray/black dotted 2				

Supplement of Pin Treatment:

1) Power supply connection

When you connect to the user target board (device type : M38D2xFF/M38D5xFF choice time)

You can choose method of VDD power supply from "EFP-S2/S2V 5V output", "EFP-S2/S2V 3.3V output", "user target input".

When there are much consumption electric currents of user target board, (more than MCU, 20mA) please input VDI power supply from user target side without letting you output a VDD power supply from EFP-S2/S2V.

About VDD power supply change method, please refer to "5.VDD power supply I/O change methods".

When you connect to MS series board (Device type : M38D2xFF/M38D5xFF(at the time of choice for MS Series),VDI power supply input from MS series board side is unnecessary to output VDD power supply from EFP-S2/S2V.

2) Mode entry terminal

Entry to serial I/O mode has to maintain H state.

When it is implemented pull-down resistance in the user target side, in consideration of inside pulling up resistance (15 O) of EF1SRP-01US2, please sort the resistance value that H level is maintained.

3) RESET connection

It does not perform the RESET cancellation of MCU at the time of the writer use. When you operate a user's program please separate writer and user target.

About RESET output of the writer side, please refer to 3 pages of notes 2.

4) GND connection

The signal GND prepares four terminals of 1, 2, 15,16Pin of EF1SRP-01U/-01US2 side connector.

When it is connected to the target board, It does not a problem to be connected with 1 terminal, but recommend that it i connected in more than 2 terminals.

5) Connection to dispatch circuit

Connect the MCU's Xin and Xout terminals to the oscillator circuit.

4.1. User target recommendation circuits

User target recommendation circuit is shown in fig. 4.1.

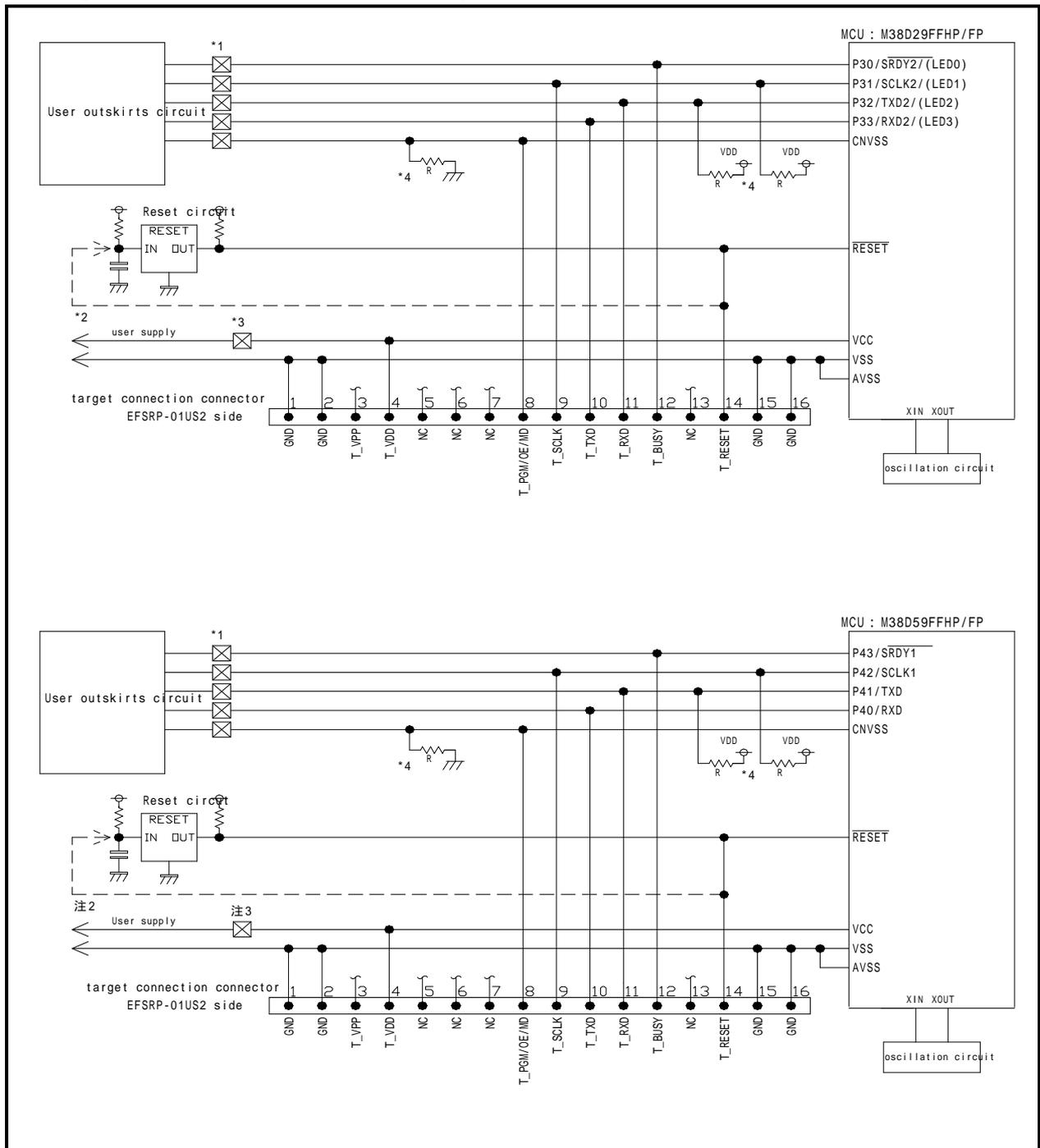


Fig.4.1: User Target Peripheral Circuit Example (recommended)

Notes:

- 1: If the user peripheral circuit is an output circuit, you should disconnect by jumper to avoid output collision when executing serial I/O mode. (See Fig. 4.2)
- 2: EFP-S2/S2V side reset output is an open collector, therefore connect to the RESET pin with 1kO pull-up resistor for open collector output. If the reset circuit is CMOS output, disconnect by jumper as described in Notes 1, or connect the EFP-S2/S2V side T_RESET signal to reset circuit input. Make reset delay within 30ms.
- 3: When you connect to user target board (device type : M38D2xFF/M38D5xFF), you can choose the supply method of VDD power supply from "EFP-S2/S2V 5V output", " EFP-S2/S2V 3.3V output", "user target input".
When there are much consumption electric currents of user target board (more than 20mA except MCU), please input VDD power supply from user target side without letting you supply VDD power supply from EFP-S2/S2V.
About VDD power supply change method, please refer to "5.VDD power supply I/O change methods".
- 4: T_SCLK, T_TXD is used as a mode entry terminal.
MCU inputs the output signal of this terminal and does a mode entry in serial I/O mode.
Please do not implement the part that a delay occurs to the output signals such as condensers.
In addition, please make pulling up by resistance of 5kO from 1kO on these terminals. Please make pull-down by resistance of 4.7k O on a T_PGM/OE/MD terminal.

4.2 Collision prevention circuits example

An example of a collision prevention circuit when user peripheral circuit outputs is shown in Fig. 4.2.

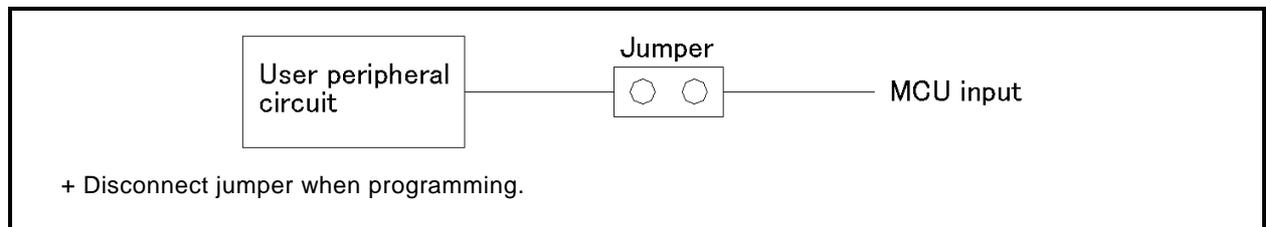


Fig.4.2: Collision Prevention Circuit Using Jumper

5. VDD power supply I/O change method

When you connect to the user target board (a device type : M38D2xFF/M38D5xFF choice time), you can choose the supply method of VDD power supply from "EFP-S2/S2V5V output", "EFP-S2/S2V 3.3V output", "user target input".

The choice procedure of the supply method of VDD power supply is shown as follows.

<The supply method setting procedure of VDD power supply>

Choose Input or Output in "T_VDD Voltage " of the "Mcu Voltage Setting" tab in the WinEFP2 "Environment Setting" dialogue. (Cf. figure 5.1)

When you choose Input, it uses VDD power supply of the user target board.

In "Output Voltage (O)" parameter, please set 3.3V, 5V.

It can choose 3.3V output or 5V output from EFP-S2/S2V when you choose Output.

Note : The electric current which can output from EFP- S2/EFP-S2V is MAX50mA.

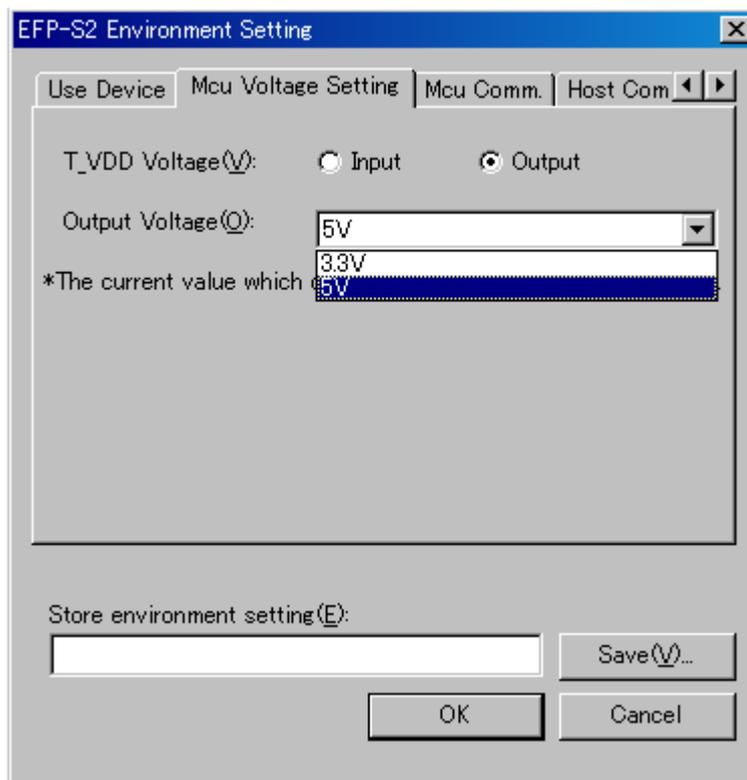


Fig5.1 The supply method setting of VDD power supply

6. ID Code Field

ID code field is provided in the internal flash memory of M32C/83 Group MCUs. Fulfilling the following condition enables you to prohibit writing and reading of MCU's internal flash memory.

Condition for working ID Code Protect Function:

Condition 1: Writes data except FFh to FFFCh or FFFDh of the flash memory.

Condition 2: Writes ID code of your choice in ID code field.

Condition 3: Fulfills condition 1 and 2, and then turn on MCU again.

MCU protected by writing ID code, can be released protected status by ID collation function of WinEFP2.

For the ID collation function, see "6. ID Collation".

* This function is for preventing of incorrect data loading etc. of user's program.

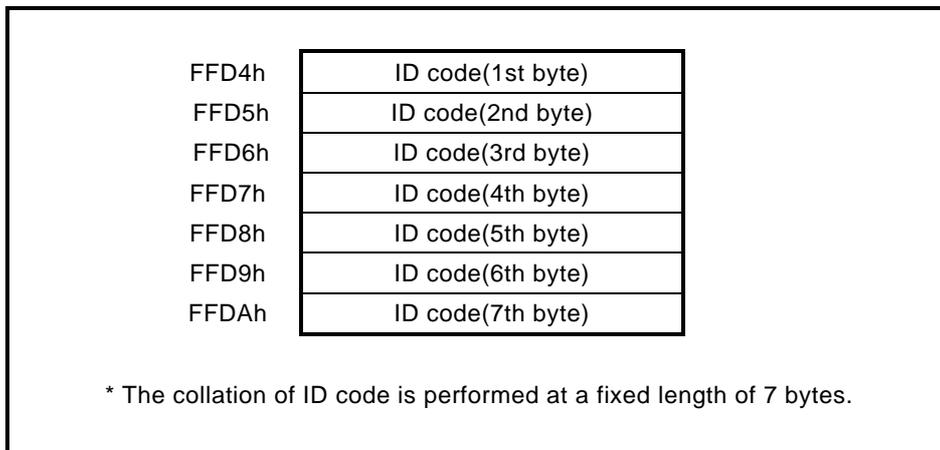


Fig. 6.1: ID Code Field Configuration

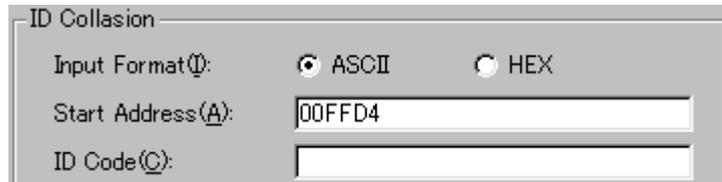
7. ID Collation Function

ID collation command enables you to reset protected MCU after written ID code.

The command is executed by inputting the ID input format and ID code for the ID collation parameter of the WinEFP2 environment setting dialog.

When ID code match after executing ID collation command, protect status is reset. However, all commands of [Device] of the WinEFP2 window menu cannot be used if the ID code does not match.

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



The image shows a dialog box titled "ID Collation". It has three main sections. The first section is "Input Format(I):" with two radio buttons: "ASCII" (which is selected) and "HEX". The second section is "Start Address(A):" with a text input field containing the hexadecimal value "00FFD4". The third section is "ID Code(C):" with an empty text input field.

Fig. 7.1: ID Collation Parameter Layout

1) Input format

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

2) Start address

Specifies the start address of ID code field.

For this parameter, the ID code start address of MCU is set automatically.

3) ID code

Inputs the ID code fixed at 7 bytes.

Procedure 3: Checking Protected Status and Resetting

When executing the each command in [Device] of WinEFP2 window menu to the MCU written in the ID code, the error message dialog shown in Fig.7.4 is appeared and stop executing a command.



Fig.7.4: ID Error

Executes to collate ID code with using the ID collation command, and resets protected status at MCU's side. ID code inputting by each input format is shown in Fig.7.5 and 7.6.



Fig. 7.5: ID Collation (Input Format: ASCII)

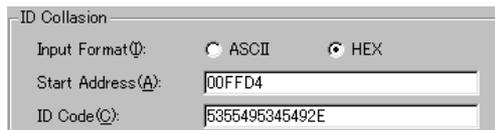


Fig. 7.6: ID Collation (Input Format: HEX)

If the ID code matches, protected status of MCU is reset and writing and reading to/from MCU are enabled. If error occurs after executing ID collation command, check ID code again and execute ID collation command.

8. Lock bit protection function

This MCU arranges the protection function by the lock bit.

It can prohibit writing and elimination in the following procedures for a domain of FFFFh from 1800h.

<Lock bit protection function setting method>

- 1 : write in data except FFh at FFFCh of the flash memory or FFFDh.
- 2 : set a Lock Type parameter in the Environment Setting dialogue in Lock bit effective.

< lock bit protection function cancellation method >

- 1 : Protection function is removed when you set a Lock Type parameter in the Environment Setting dialogue in Lock bit ineffective

Lock Type parameter setting screen is shown in fig.8.1.

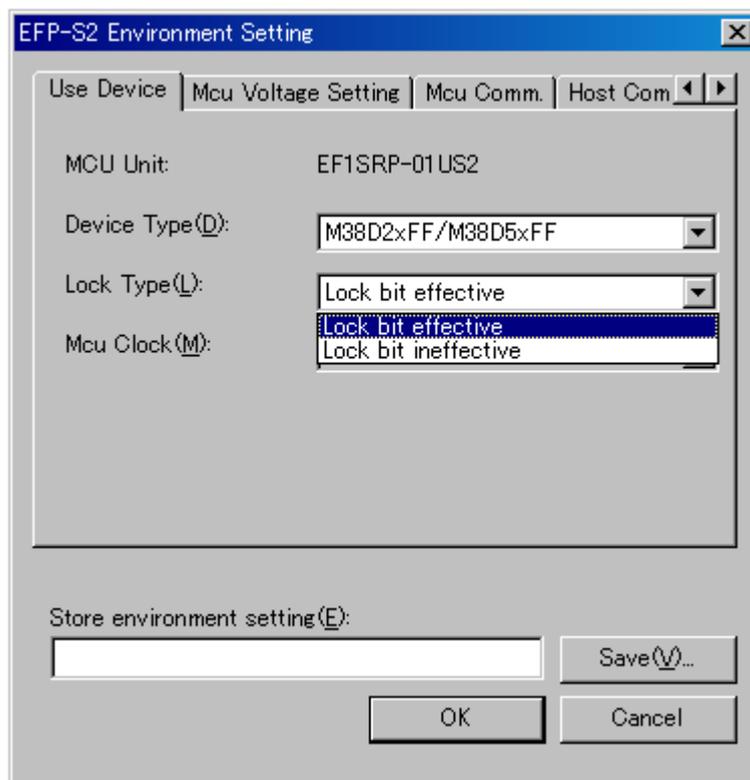


Fig.8.1 Lock Type parameter

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.

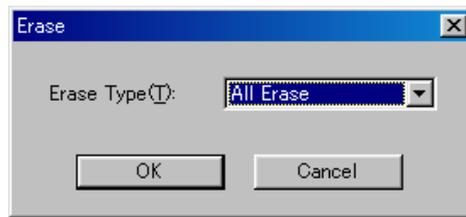


Fig. 9.1: Erase Command Parameter Input Dialog

1) Erase Type

All Erase and block address field (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 erase command.

3) Cancel Button

Cancels a command.

10. Boot Read

Reads the data of the MCU's boot field, and then writes in the EFP-S2/S2V's internal buffer RAM.

Input a boot field address for the start and end address to execute the boot read command. Unfixed data will be read if address outside boot field is specified and execute the command.

The boot field address in each group is given in Table 10.1.

Table 10.1: Boot Field Address List

MCU Group Name	Boot Field Address
38D2,38D Group Flash edition	F000h ~ FFFFh

11. Parameter Input by Device Command

When writing and reading are executed by device command, input command executing field by the page.

1 page of data size is 256 bytes. Start of each command, End Address obey the following input forms, and please input an address.

Start Address: xxxxooh

End Address : xxxxFFh

Parameter error occurs and cancels a command when you input an address except the page unit into Start, End Address.