EF1SRP-01US2 Supplement (R8C/10, 11, 12,13group edition)

First Edition issued April. 2006

.General Description

This supplement contains information on matters that require attention for reading, writing and cleaning data to Renesas Technology Corp. R8C/10 to 13 groups MCU with built-in flash memory. This supplement can be referred in case of using EF1SRP-01U in EFP-S2/S2V.
*In case of using R8C/Tiny series except R8C/10 to 13 group, please refer to EF1SRP-01US2 supplement (R8C/Tiny series 1-wire edition).

.Operating Environment

Please use the MCU mentioned in this supplement in the environment as follows.

Table 2.1 Operating Environment List

MCU group name	EFP-S2 Monitor Version	WinEFP2 Version	EF1SRP-01US2 TBL Version
R8C/10 group	Ver. 1.00.11 or later	Ver. 1.00.00 or later	Ver. 1.00.06 or later
R8C/11 group			
R8C/12 group			Ver. 1.02.09 or later
R8C/13 group			
Each S/W version can be referred to [Help]　[About] in WinEFP2 window menu. If S/W version of EFP-S2/S2V etc. which you use is old one, please download the latest version upgrade data from the website below. <EFP-S2's latest S/W free download site >　http://www.suisei.co.jp/download/efps2/efps2_down.htm			

. Pin Connection

Table 3.1 lists the Pin connection of target connection cable of the R8C/Tiny Series.

Table 3.1: List of Target Pin Connection

Connection Pin No. (F1SRP-01US2 side)	Target End Wire Color	Signal	4-Wire Cable Pin No.	MCU Connection Pin in Serial I/O Mode	I/O (writer side)
	Orange/red dotted 1	GND		Connects to VSS pin *3	
	Orange/black dotted 1				
	Gray/red dotted 1	T_VPP		Unconnected	Open
	Gray/black dotted 1	T_VDD		Connects to VCC pin *1	Input
	White/black dotted 1	T_PGM/OE/MD		Unconnected	Output
	Yellow/red dotted 1	T_SCLK		Connects to CNVSS pin	Output
	Yellow/black dotted 1	T_TXD		Connects to RXD	Output
	Pink/red dotted 1	T_RXD		Connects to TXD pin	Input
	Pink/black dotted 1	T_BUSY		Connects to MODE pin	Input/output
	Orange/black dotted 2	T_RESET		Connects to RESET pin *2	Output
	Gray/red dotted 2	GND		Connects to VSS pin *3	
	Gray/black dotted 2				

Supplement of Pin Treatment:

*1 Supply VCC from user side to match source voltage of output buffer used on EFP-S2/S2V side with user side source voltage (VCC).

*2 Reset cancel is not carried out during using a writer. To execute user program, you should therefore unplug the user target connection cable to the writer. As for RESET output at writer side, see Note 2 in the page 3.

*3 The signal GND has 4 pins (No.1, 2, 15 and 16) for EF1SRP-01US2 side connector. When connecting to the target board, you can connect with using only one pin, but connecting 2 pins or more is recommended.

Supplement of others:

*4 Connect the MCU's Xin and Xout terminals to the oscillation circuit. In case of the operation with ring oscillator clock, connection to the oscillation circuit is not necessary.

A recommended user target MCU circuit for R8C/Tiny Series is shown in　Fig　.1.
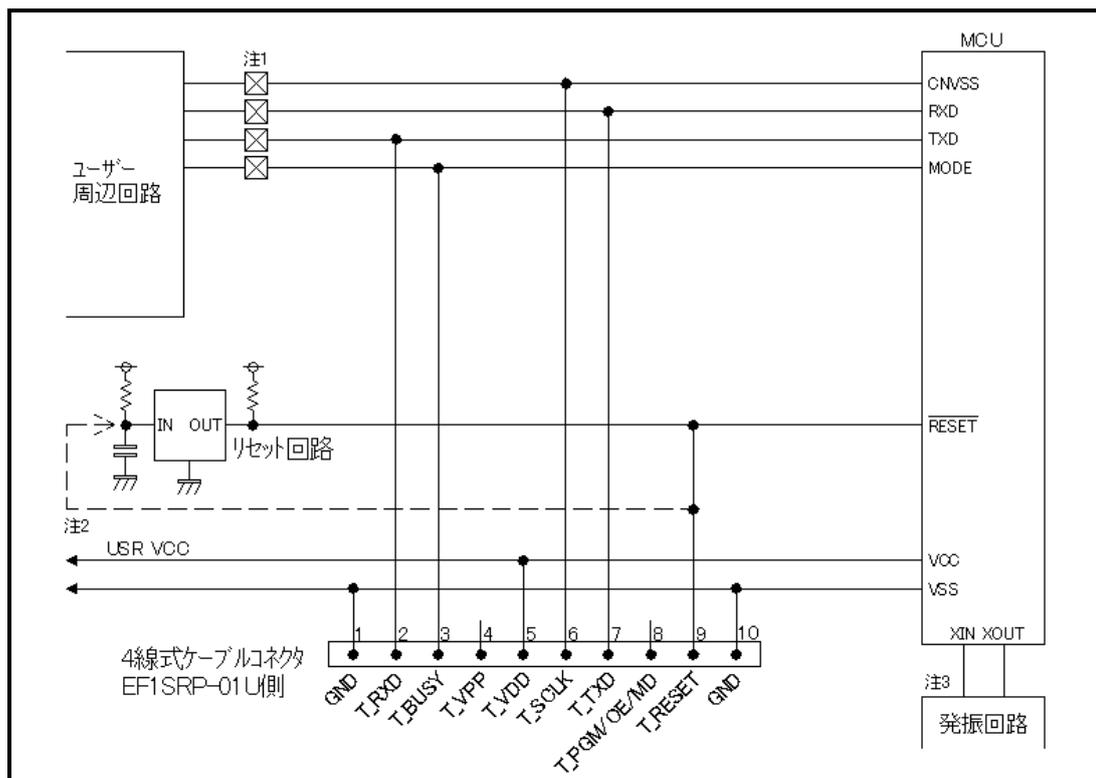
Fig　. 1:　Recommended User Target Circuit

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.

2: EFP-I side RESET output is an open collector; therefore connect to the RESET pin with 1kΩ pull-up processing if RESET circuit is open collector output.　If the RESET circuit is CMOS output, disconnect by jumper as described in Notes 1, or connect the EFP-I side T_RESET signal to RESET circuit input.　Serial I/O mode entry is conducted by combining signal output timing of MODE and RESET from the writer, and make L to H output timing of MODE and RESET signals 500 ns or below.

3: In case of the operation with ring oscillator clock, connection to the oscillator circuit is not necessary.

. ID Code Field

ID code field is provided in the internal flash memory of R8C/Tiny Series MCU. Fulfilling the following condition enables you to prohibit writing and reading of MCU internal flash memory.

Conditions for ID Code Protect Function:
Condition 1: Writes data except FFh to FFFEh 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 turns on MCU power again.

MCU protected by writing ID code, can be released protected status by ID collation function of WinEFP. For the ID collation function, see "5. ID Collation".
 * This function is for preventing incorrect data reading etc. of user's program.

FFDFh	ID Code (1st byte)
FFE3h	ID Code (2nd byte)
FFEBh	ID Code (3rd byte)
FFEFh	ID Code (4th byte)
FFF3h	ID Code (5th byte)
FFF7h	ID Code (6th byte)
FFFBh	ID Code (7th byte)

 * ID code field is discontinuous field divided 1byte.
   ID code collation is done by fixed length at 7 bytes.
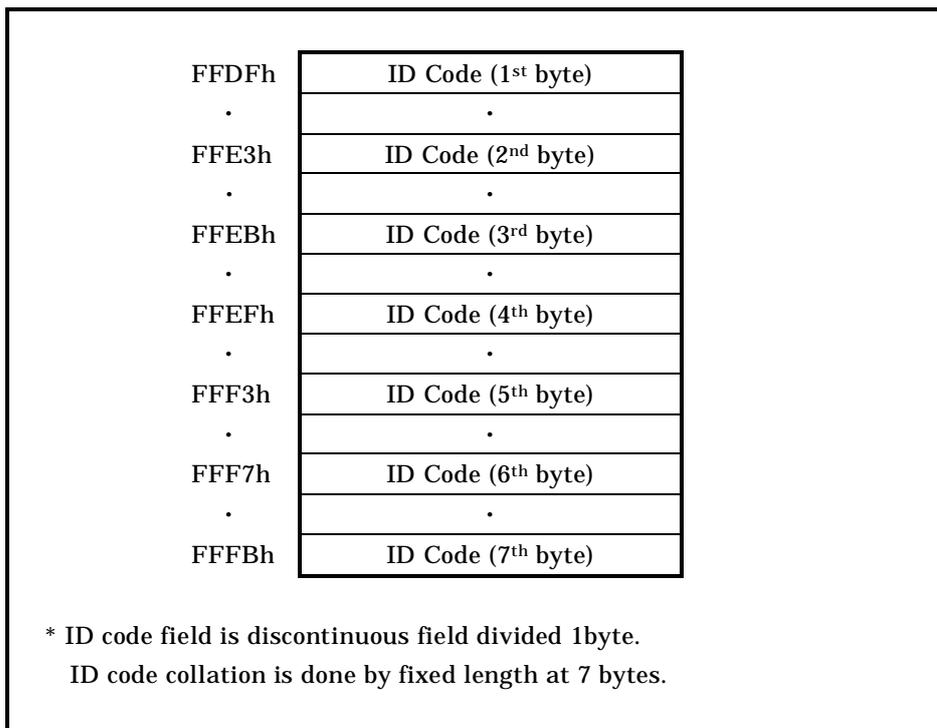
Fig.5.1: ID Code Field Configuration

. ID Collation

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 environmental setting dialog.

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

The ID collation parameter layout is shown in Fig.5.1.

 * Fig5.1   !   shows ID collation command screen when selecting R8C/Tiny Series.
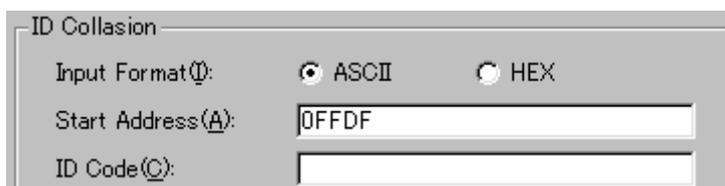
Fig.5.1 ID Collation Parameter Layout

1) Input format

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

2) Start address

Please specify the start address of ID code field.

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

3) ID code

Please input the ID code fixed at 7 bytes.

5.1 ID collation operation step

When it is used MCU establishing the ID coding region, please be careful to the wrong writing of the ID coding area. In addition, please manage the written ID code in user side not to forget it.

This is written about use example and the procedure of the ID cord. Series of procedures from writing of the ID cord to cancellation is shown as follows.

The procedure example is based on the assembly operation of the M16C/62 group. When it is used MCU of the other group, please be careful because ID cord size and the addresses of the ID coding area are different

Step   Setting of ID code

In the domain equivalent to the ID code area of the buffer RAM in the main body of EFP-I, set an ID cord. It is "SUISEI" with an ID cord in the example.(Cf. Fig.5.2
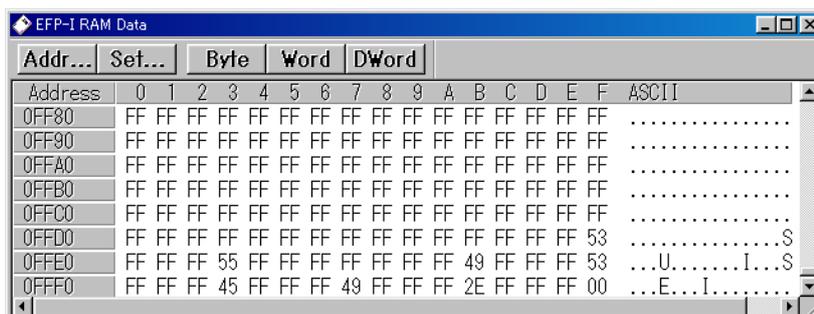

Fig.5.2   Dump window   ID cord setting data

Table 5.1 Buffer RAM setting fact sheet

Flash memory address	Setting date	Flash memory address	Setting data

Step   Writing to ID Code area

Write in data of the buffer RAM in the main body of EFP-S2/S2V at flash memory in MCU.

In the example, it writes that using a program command and in the domain including the ID code area.

Please switch on again a power supply of MCU after writing to the ID code area was finished.
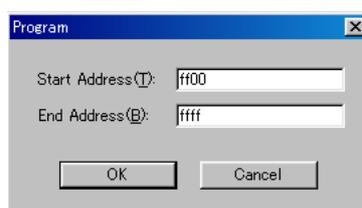
Fig.5.3   Writing to ID code area

Program command designated address

Step   The confirmation and cancellation of the protection state

Error message dialogue of Fig.5.4 is displayed and cancels a command when it carry out a command in the [Device] in WinEFP window menu for MCU which ID cord was written.

Fig5.4 ID Error

Collate the ID cord with an ID collation command. Remove a protection state of MCU side.
The ID input by code in each input form is shown in fig.5.5, 5.6.

Fig.5.5   Collation   Input form   ASCII
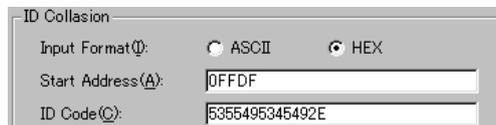
Fig5.6   Collation   Input form HEX

When ID cord accords, the protection of MCU is removed, and reading and renewal of MCU are enabled.
When an error occurred after ID collation command practice, please carry out ID collation command after confirmation with ID cord once again.

.

It can be perform block elimination and the collective elimination of all blocks using Erase type parameter in Erase command. Parameter input dialogue of Erase command is shown in Fig.6.1.
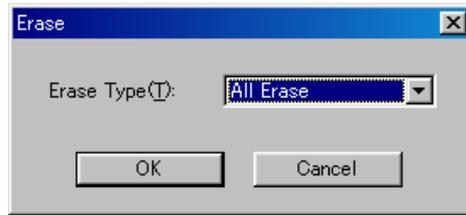

Fig6.1   Parameter input dialogue of Erase command

All Erase and the address domain of each block (xxxxxxh - xxxxxxh) is displayed in the list of drop-downs of the Erase type parameter display area right side.
Please choose an elimination method.
Drop -downs list is displayed when you click a lower arrow with a mouse

Practice Erase command

Cancel the command

. **The parameter input by the device command**
MCU to use at this MCU unit performs the writing of data, reading by a page unit.
Data size of one page is 256 bytes.
Please input an address about Start, End Address of each command to obey the following input forms.

 Input forms

In addition, if you input an address except the page unit into Start, End Address, parameter error occurs and command is canceled.