

# ER1SRP-01U Supplement ( 7900 series 7910 group edition )

Second issued September 2001

## 1 . General Description

This supplement contains information on matters that require attention for reading and writing data to Renesas Technology Corp. 7910 Group MCU with built-in QzROM.

## 2 . Operating Environment

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

< EFP-1 >

Monitor Version : Ver.4.18.15 or later

< EFP-1M >

Monitor Version : Ver.4.A8.15 or later

< WinEfpRE Control Software >

WinEfpRE Version : Ver.1.30.05 or later

< EFP-S2 or EFP-S2V >

Monitor Version : Ver.1.00.54 or later

< EFP-S2 or S2V Control Software >

WinEFP2 Version : Ver.1.02.23b or later

Fig.2.1 Operating Environment

MCU group name	EFP- Monitor Version	WinEFP Version	SRPMCU12.TBL Version
7910 group	Ver.3.00.41 or later	Ver.1.02.21 or later	Ver.1.02.12 or later

The version numbers such as EFP-1 and WinEFP are displayed by [Help] [About] in the WinEFP window menu. Please download the latest version up data on the following site when the S/W version such as EFP- used is old.

< EFP- S/W the latest free download site >  
[http://www.suisei.co.jp/download/efp1/efp\\_down\\_e.htm](http://www.suisei.co.jp/download/efp1/efp_down_e.htm)

### 3. Pin Connection

Table 3.1 lists the connection of target connection cable pin of the 7910 Group.

Table 3.1: List of Target Connection Pin

Connection Pin No.(EF1SRP-01U side)	Target End Wire Color	Signal	3-Wire Cable Pin No.	MCU Connection Pin in Serial I/O Mode	I/O (Writer side)
1	Orange/red dotted 1	GND	NC	Connects to VSS pin *4	-
2	Orange/black dotted 1				
3	Gray/red dotted 1	T_VPP	2	Unconnected	Open
4	Gray/black dotted 1	T_VDD	3	Connects to VCC pin *1	Input
8	White/black dotted 1	T_PGM/OE/MD	6	Connects to MD1 pin	Output
9	Yellow/red dotted 1	T_SCLK	4	Connects to SCLK pin	Output
10	Yellow/black dotted 1	T_TXD	5	Connects to SDA pin *2	I/O
11	Pink/red dotted 1	T_RXD			
12	Pink/black dotted 1	T_BUSY	1	Connects to BUSY pin	Input
14	Orange/black dotted 2	T_RESET	7	Connects to RESET pin *3	Output
15	Gray/red dotted 2	GND	8	Connects to VSS pin *4	-
16	Gray/black dotted 2				

Supplement of Pin Treatment:

\*1 In case user consumption current is high (20mA or more except MCU), please provide VDD power from user target side. VDD power should not be supplied from EFP-I.

\*2 Please pull up with 1k resistance during serial I/O mode.

\*3 Reset cancel is not carried out following write verify. To execute MCU, you should therefore unplug the target connection cable

About RESET output of the writer side, please refer to note 2 of P3.

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

Others supplement>

\*5 When serial writing, connect the MD0 pin of the MCU to the VSS pin.

\*6 Supply 3.3V in VCC of MCU, supply 5V in FVCC.

\*7 Connect the MCU's Xin and Xout terminals to the oscillator circuit.

(1) Fig3.1 shows an example of target MCU peripheral circuit when using 7910 group.

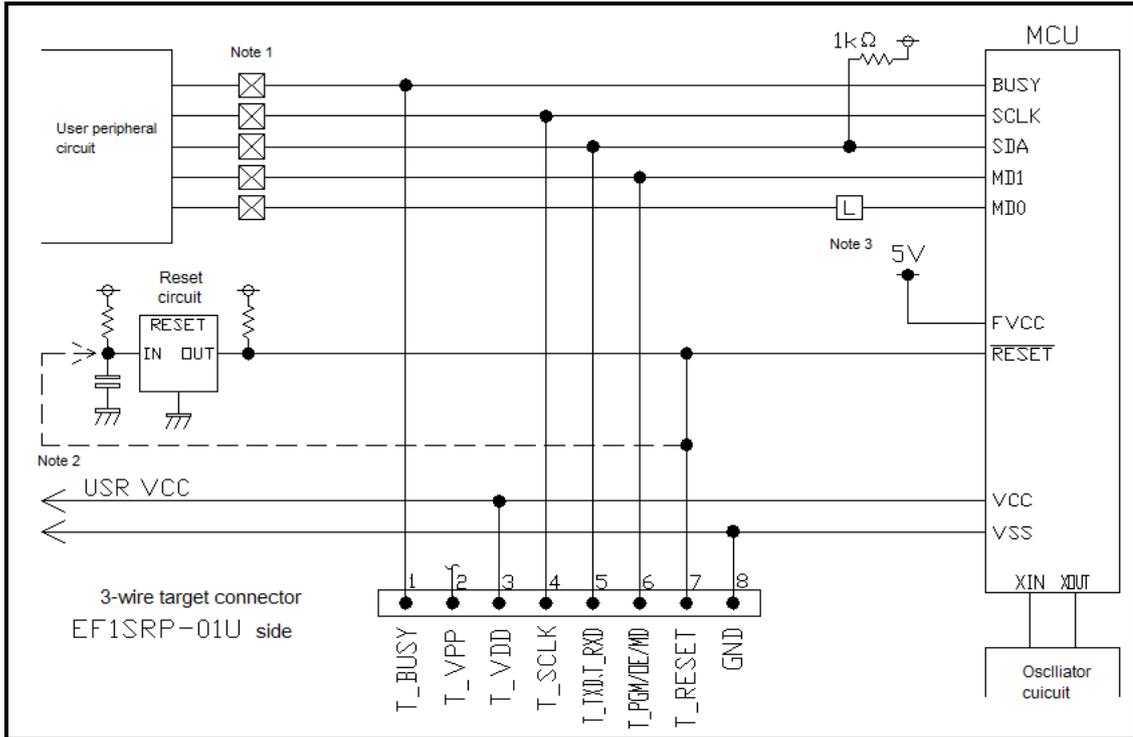


Fig3.1 User target peripheral circuit

**\*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 directly to the RESET pin for open collector output. A pull-up resistor however must be connected. If the reset circuit is CMOS output, do as described in note 1, or connect the EFP-I side T\_RESET signal to reset circuit input. Make reset delay within 30ms.

3: When serial writing, fix the MD0 to "L" and in other case, connect to the user peripheral circuit or pull-up.

- (1) An example of a collision prevention circuit when user peripheral circuit outputs is shown in 3.2 and Fig.3.3.

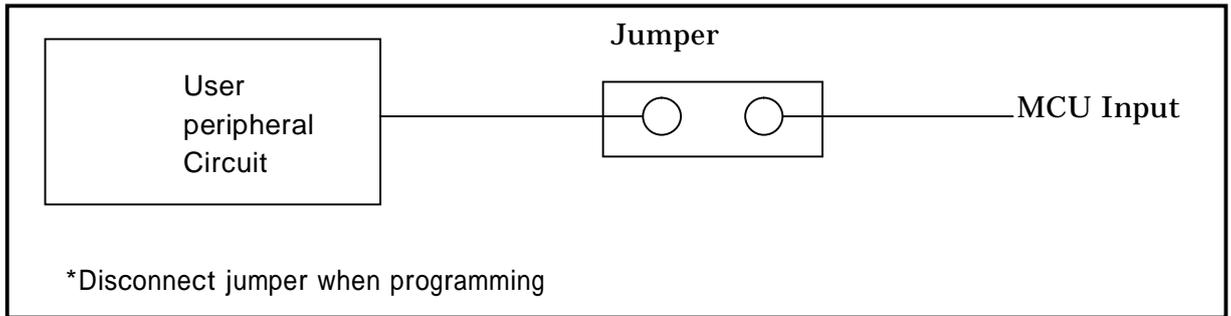


Fig. 3.2: Collision Prevention Circuit Using Jumper

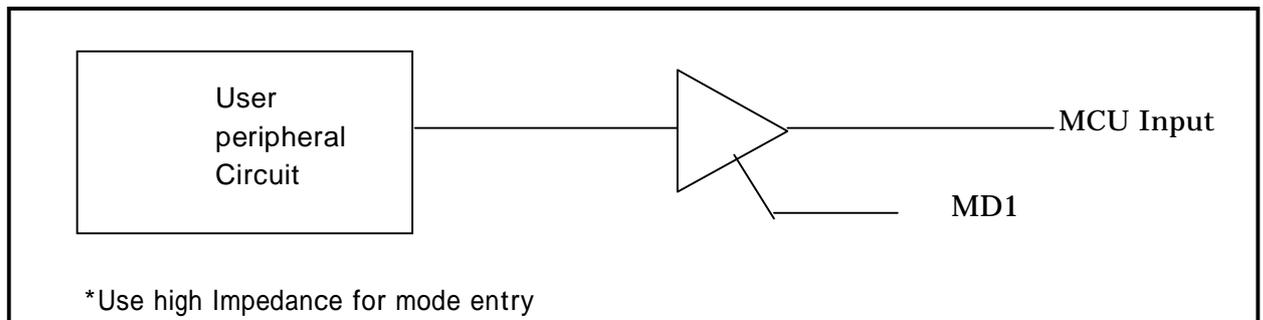


Fig. 3.3: Collision Prevention Circuit Using Three State Buffer

#### 4. ID Code Area

ID code area is provided in the internal flash memory of 7910 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. 5.1.

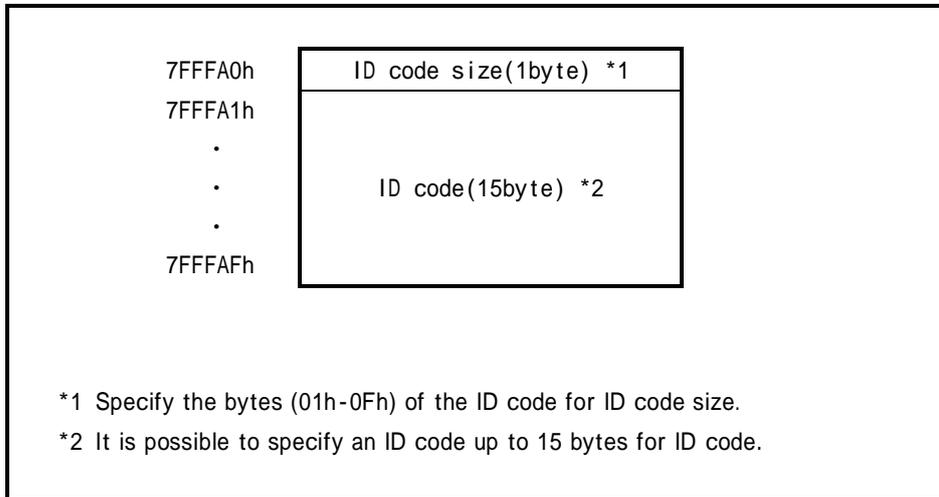


Fig.4.1 ID Code Area Configuration

#### 5. ID Collation Function

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. 5.1



Fig.5.1 ID Collation Parameter Configuration

1) Input Format the ID code input format is specified as ASCII or HEX.

2) Start Address

Specify the top address of ID code area.

This parameter is set ID cord top address of MCU automatically.

3) ID code

Input ID code

## 6. ID Collation Operating Procedure

When you use an MCU in which ID code field is provided, pay attention to the miswriting into the ID code field. In order not to forget ID code written in, please keep the ID code at user's side.

This section contains a description of the usage example and operation procedure of ID code. Consecutive procedure from ID code writing to ID code resetting is as follows.

### Procedure 1: ID Code Setting

The ID code is set to the area that corresponds to the ID code area in buffer RAM with built-in the main body of EFP-S2.

In the example below, ID code is set as "SUISEI." (Refer to Fig.5.2).



Address	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	ASCII	
7FFF90	FF																	
7FFFA0	06	53	55	49	53	45	49	FF	.SUISEI.									
7FFFB0	FF																	
7FFFC0	FF																	
7FFFD0	FF																	
7FFFE0	FF																	
7FFFF0	FF																	
800000	FF																	

Fig 5.2: Dump Window (ID Code Setting Data)

### Buffer RAM Setting Data

7 F F F A 0 h : 0 6 h

7 F F F A 1 h ~ 7 F F F A F h : 5 3 h、5 5 h、4 9 h、5 3 h、4 5 h、4 9 h

### Procedure 2: Writing in the ID code Field

Write EFP-I's internal buffer RAM data into MCU internal flash memory.

Fig.5.3 shows an example of writing in the field including ID code field, with using program command.

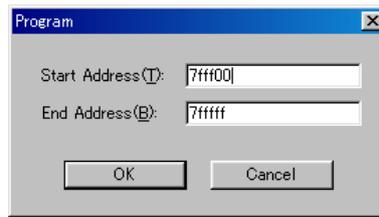


Fig.5.3 Writing in the ID Code Field

Program Command Address

Start Address : 7 F F F 0 0 h

End address : 7 F F F F F h

### Procedure 3: Checking Protected Status and Resetting

When executing the each command in [Device] of Win EFP window menu to the MCU in which the ID code is written, the error message dialog in Fig5.4 is shown and command execution is stopped.



Fig.5.4 ID Error

Execute ID code collation using the ID collation command, and resets protected status at MCU side. ID code inputting by each input format is shown in Fig.5.5 and Fig.5.6.



Fig.5.5 ID Collation (Input Format: ASCII )



Fig.5.6 ID Collation (Input Format: HEX )

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

## 6 . Block Set Command

MCU of 7910 groups makes built-in flash memory the division to plural blocks, and block renewal prohibition bit called a lock bit is established to every each block.

Block set command is the reference of the lock bit and a command to perform the establishment. It extends, and a note to the block can prohibit elimination by setting the lock bit of each block to a lock.

### 6 . 1 Screen layout of the block set command

Fig. 6.1 shows the screen layout of the block set command.

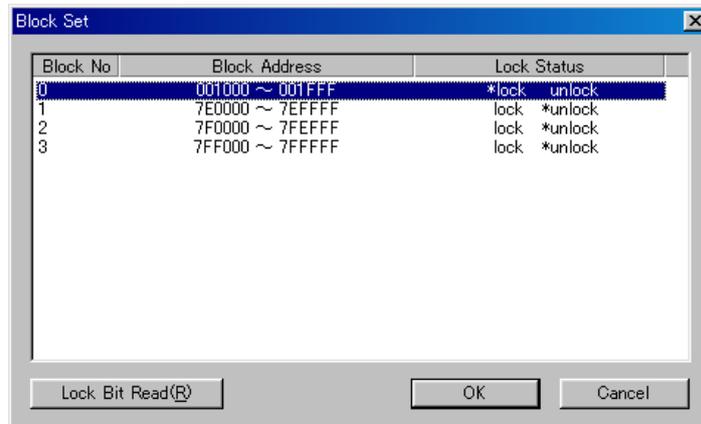


Fig.6.1 screen layout of the block set command

#### (1) Block number

Indicates the block number assigned to each block.

#### (2) Block address

Indicate the start address and the end address of each block.

Lock status

Indicates the lock bit status of each block.

\* Lock   Unlock <-- The lock bit is locked.

\* Lock   Unlock <-- The lock bit is unlocked.

#### (3) 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.

#### (4) OK button

Clicking the OK button writes to the target MCU the contents of the lock bits of the blocks set to "Lock".

#### (5) Cancel button

Cancel the command.

## 7. Erase

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.

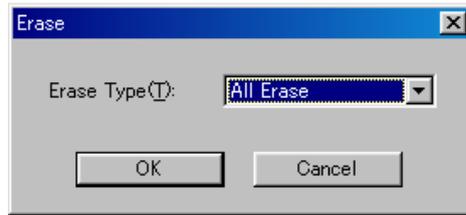


Fig.7.1: Erase Command Parameter Input Dialog

### 1) Erase Type

All Erase and block address 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

Execute the block erase command.

### 3) Cancel Button

Cancel a command.

## 8. Parameter Input by Device Command

This Series serial writing MCUs read and write data 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

In addition, a parameter error occurs and cancels a command when it input an address except the page unit into Start, End Address.