

EF1SRP-01U Supplement (3850/3851 Groups Edition)

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1. General Description

This supplement contains information required for reading, writing and clearing data to/from Mitsubishi Electric 3850/3851 groups MCUs with built-in flash memory. The supplement also contains a description of command operation for the various functions of the 3850/3851 groups.

2. Operating Environment

Use the MCUs mentioned in this supplement in an environment as follows.

[EFP-I]

Monitor Version: Ver.3.00.38 or later

[Control Software]

WinEFP Version: Ver.1.20.10 or later

SRPMC.U.TBL Version: Ver.1.02.09 or later

3. Individual Writing Specifications

- 4-wire serial writing
- ID collation function
- Page program (256 bytes)

4. Pin Connection

Table 4.1 lists the connection of target connection cable pin of the 3850/3851 groups.

Table 4.1: Connection of the Target Connection Cable Pin

Pin No. (EF1SRP-01U side)	Target End Wire Color	Signal	4-Wire Cable Pin No.	MCU Connection Pin for Serial Writing
1	Orange/red dotted 1	GND	1	Connects to VSS pin *3
2	Orange/black dotted 1	GND	1	Connects to VSS pin *3
3	Gray/red dotted 1	T_VPP	4	Connects to CNVSS pin
4	Gray/black dotted 1	T_VDD	5	Connects to VCC pin (VCC used for user power source) *1
8	White/black dotted 1	T_PGM/OE/MD	8	Connects to P41 pin
9	Yellow/red dotted 1	T_SCLK	6	Connects to SCLK pin
10	Yellow/black dotted 1	T_TXD	7	Connects to RXD pin
11	Pink/red dotted 1	T_RXD	2	Connects to TXD pin
12	Pink/black dotted 1	T_BUSY	3	Connects to BUSY pin
14	Orange/black dotted 2	T_RESET	9	Connects to RESET pin *2
15	Gray/red dotted 2	GND	10	Connects to VSS pin *3
16	Gray/black dotted 2	GND	10	Connects to VSS pin *3

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

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

*3. The signal GND has 4 pins (No. 1, 2, 15 and 16) of EF1SRP-01U side connector. When connecting to the target board, there is no problem for connecting only one pin, but it is recommended to connect more than 2 pins.

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

(1) An example of target MCU peripheral circuit when using the 3850/3851 groups is shown in Fig. 4.1.

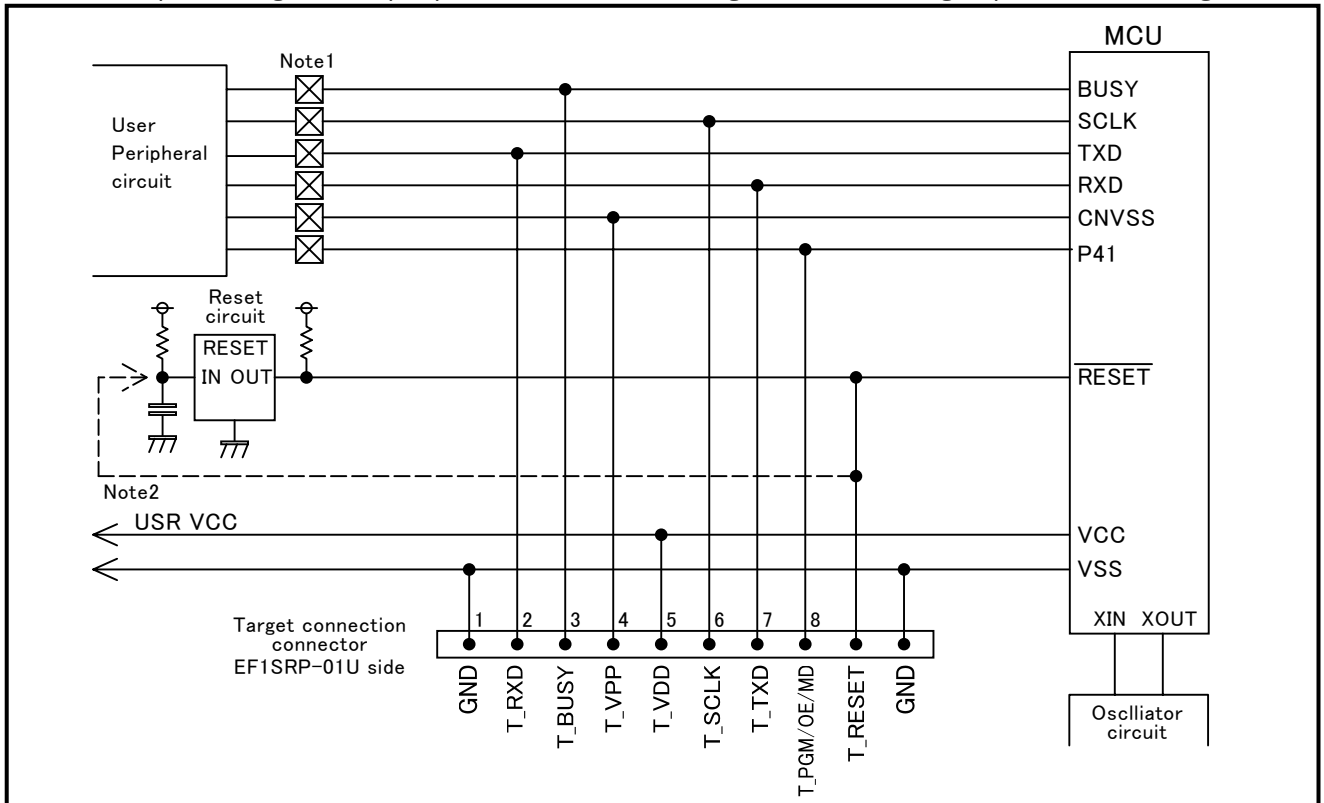


Fig. 4.1: Target MCU Peripheral Circuit Example

Notes

1. If the user peripheral circuit is an output circuit, you should disconnect by jumper to avoid output collision when serial writing.
2. EFP-I side reset output is an open collector, therefore connect directly to the $\overline{\text{RESET}}$ 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.

(2) An example of a collision prevention circuit when user peripheral circuit outputs is shown in Fig. 4.2 and 4.3.

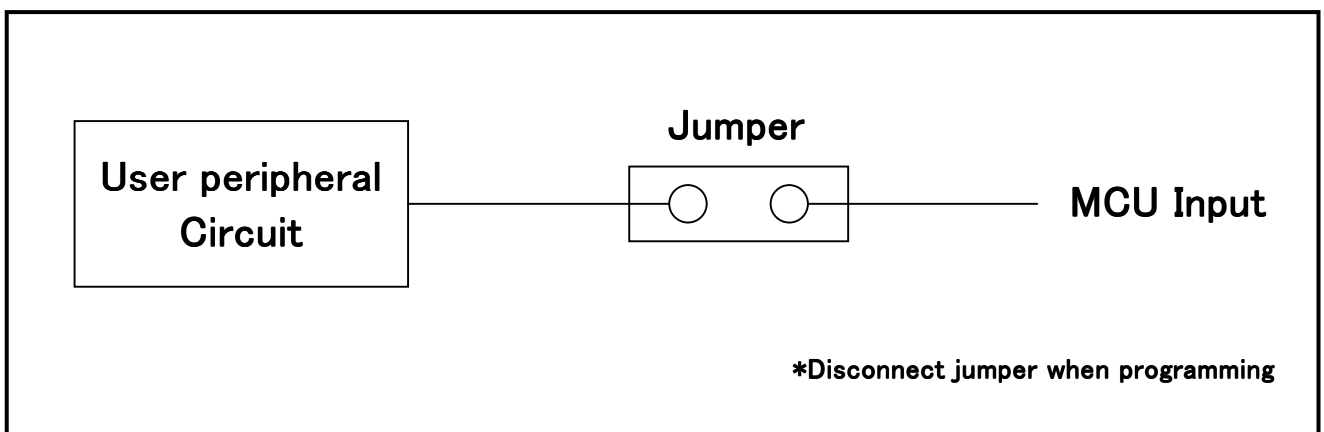


Fig. 4.2: Collision Prevention Circuit Using Jumper

5. ID Code Area

ID code area is provided in the internal flash memory of 3850/3851 groups MCUs.
ID data size is fixed at 7 bytes. Set the ID code in each ID area one byte at a time.
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.

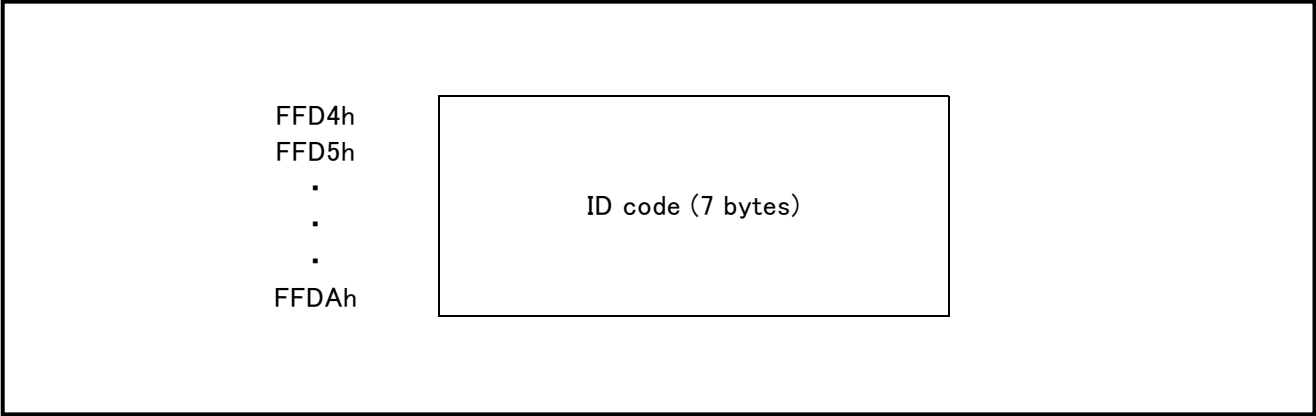


Fig. 5.1: ID Code Area Configuration

6. 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. 6.1.

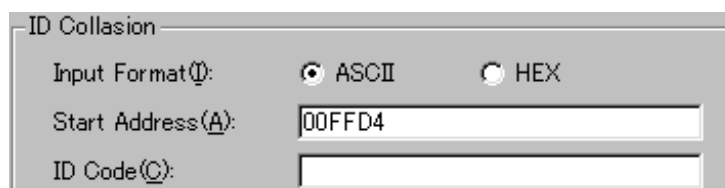
The image shows a dialog box titled "ID Collation". It contains three fields: "Input Format(I):" with radio buttons for "ASCII" (selected) and "HEX"; "Start Address(A):" with a text box containing "00FFD4"; and "ID Code(C):" with an empty text box.

Fig. 6.1: ID Collation Parameter Configuration

(1) **Input format**

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

(2) **Top address**

Specifies the top address of ID code area.

The top address is fixed at FFD4h for the 3850/3851 groups.

(3) **ID code**

Input the ID code.

(4) **Save button**

Saves input ID collation parameters in a file. When the save button is clicked, the file section dialog appears, so input the file name of your choice.

(5) **Refer button**

Reads the file in which ID collation parameters are saved and sets parameters according to the contents of the file. When the refer button is clicked, the file section dialog appears, so select the file of your choice.

* An example of the operating procedure for ID collation is shown below. The ID code area of the target MCU's internal flash memory is set as follows.

Device type	3850/3851 groups
ID code (FFD4h–FFDAh)	53h, 55h, 49h, 53h, 45h, 49h, 2Eh

(1) Check if FFD4h is set for the top address parameter. If the device type parameter is set to "M385xxFx", FFD4h is automatically set as the top address of the code collation parameter. The ID code will not match if an address other than FFD4h is set.

(2) Set ASCII or HEX for the input format parameter, and input an ID code for the ID code parameter. An example of ID code parameter setting is given below.

For ASCII:

ID Code: SUISEI.

For HEX:

ID Code: 53 55 49 53 45 49 2E
S U I S E I .

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 the block erase command.

(3) Cancel button

Cancels the command.

8. Parameter Input by Device Command

3850/3851 groups 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