

EFP-RC

Operation Supplementary manual

The 1th edition
Suisei electronics system co.,ltd.

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General description

In this document, it informs supplemental on following seven items about operation of EFP-RC.

1 . Type of the target connection

The type of the target connection has six kinds of the following.

It explains connection methods about each.

Cnvss : Flash ROM microcomputer of VIH type standards [t=1,2,3,8]

Cnvss : 5V type 8Bit system flash ROM microcomputer [t=8,18][Vpp conversion required]

Cnvss : 12V Nor type flash ROM microcomputer (3-wire Communication) [t=6,7]

R8C/10-13 System Flash ROM microcomputer (Clock synchronization type) [t=4]

R8C/14-2x system Flash ROM microcomputer (special UART mode)[t=5]

Cnvss : 7.9V 4,8Bit system QzROM microcomputer (3-wire communication) [t=9-17,19--][Vpp conversion required]

2 . Outside control signal

It is written a method to control EFP-RC from the outside.

3 . Setting of Compact Flash (CF)

It is written a method to set CF. It is necessary to format it with PC side, when you use CF. first. (It is unnecessary in the case of attached CF at the time of shipment.)

4 . Write operation

About operation of EFP-RC

5 . Attention about each microcomputer (MCU)

It explains attention. Flash ROM has Block and ID code, QzROM has Protection bit and Special setting domain.

6 . Sample script

Sample script of M16C/62P, QzROM and R8C/Tiny are explained.

7 . Troubleshooting

The part of the error to occur in EFP-RC and the measures are explained.

1. EFP-RC Target Connection

This chapter is explained about a method to connect EFP-RC and each MCU.

1.1 Type of the target connection

Cnvss	VIH	5V(*1)	12V(Nor)	R8C/10-13	R8C/1-wire	QzROM(*2)
EFP-RC connector	T=1,2,3,8	T=8,18	T=6,7	T=4	T=5	T=9-17,24-30
1,16: GND	Vss	Vss	Vss	Vss	Vss	Vss
3: T_VPP		Cnvss(5V)	Cnvss(12V)			Cnvss(7.9V)
4: T_VDD	Vcc	Vcc	Vcc	Vcc	Vcc	Vcc
8: T_Pgmoe	Cnvss	Pxx (*3)	Pxx (*3)			Pxx (*3)
9: T_Sclk	Sclk	Sclk	Sclk	Cnvss		Sclk
10: T_Txd	Rxd	Rxd	SDA	Rxd	Mode	SDA
11: T_Rxd	Txd	Txd		Txd		
12: T_Busy	Busy	Busy	Busy	Mode		
14: T_Reset	Reset	Reset	Reset	Reset	Reset	Reset
MCU type	M16/Tiny M16/3x M16C/6x,8x M32C/8x M380xFxL M38DxF	M385xxF M3754xF	M3803xF M3775xF	R5F2111xx ~ R5F2113xx	R5F2114x ~ R5F211Bx R5F212xx	M34283G M34508G M3754xG M38xxxG

(*1) : EFXQZP-01-C(5Vpp) required or an equal circuit.

(*2) : EFXQZP-01-C(7.9Vpp) required.

(*3) : Please confirm it with each microcomputer manual.

- Cnvss is pull-down in 1k-5.1k, the other is pull-up (except Vss).
- Please make T_Reset with an open collector and OR connection (wired OR) with the user reset.
- Please do not happen collisions of the signals in the case of input for microcomputer using usually with an above terminal.

The above is the signal which is common to each microcomputer.

There is a terminal to need setting other than the above. It depends on microcomputer.

Please refer to Renesas microcomputer manual for the details.

In addition, please download the Zip file of follows our website.

http://www.suisei.co.jp/pdf/efps2-s2v_080627.zip

Please use each microcomputer supplement document in the Supplement holder together.

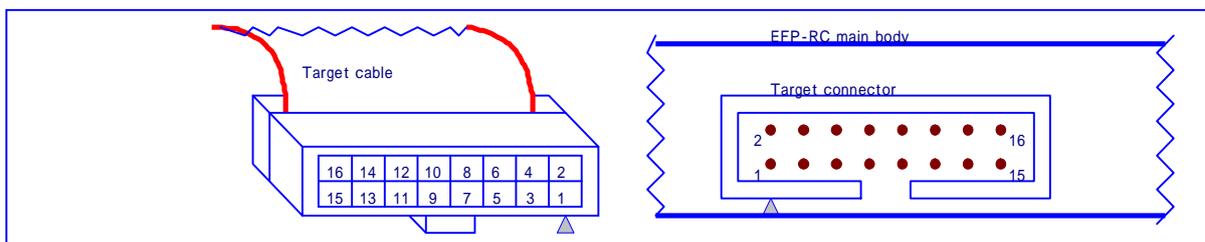


Fig. 1.1 Target connector Pin placements

1.2 Connection example to the target

Please refer to the microcomputer manual together.

Cnvss: VIH The connection method of the microcomputer

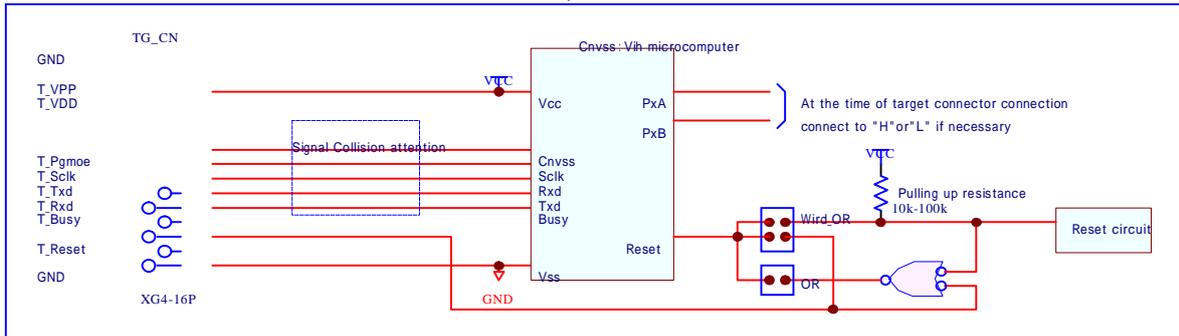


Fig 1.2-1

Cnvss: Vpp The connection method of the microcomputer

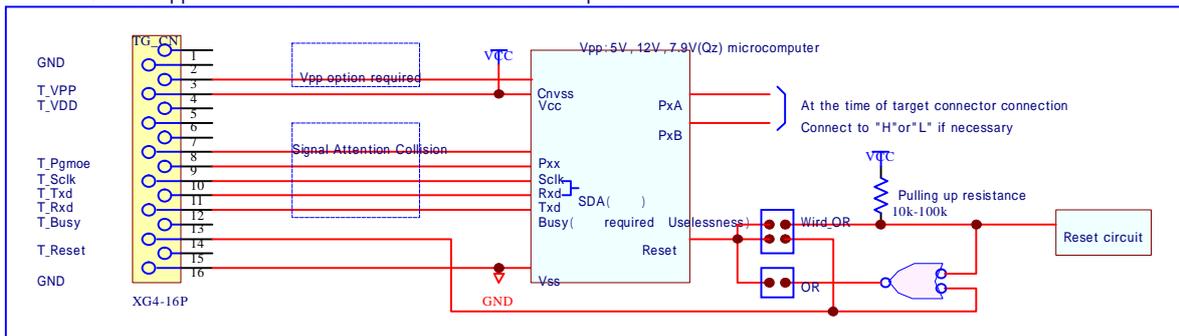


Fig 1.2-2

R8C/10-13 The connection method of the microcomputer

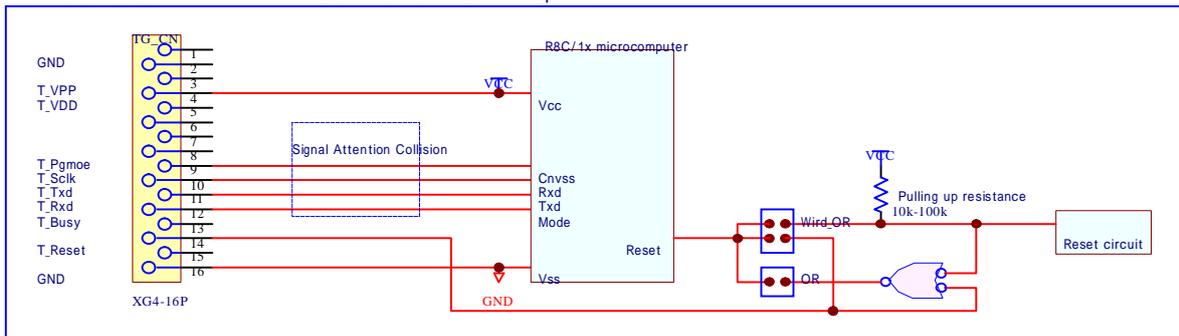


Fig 1.2-3

R8C/1-wire The connection method of the microcomputer

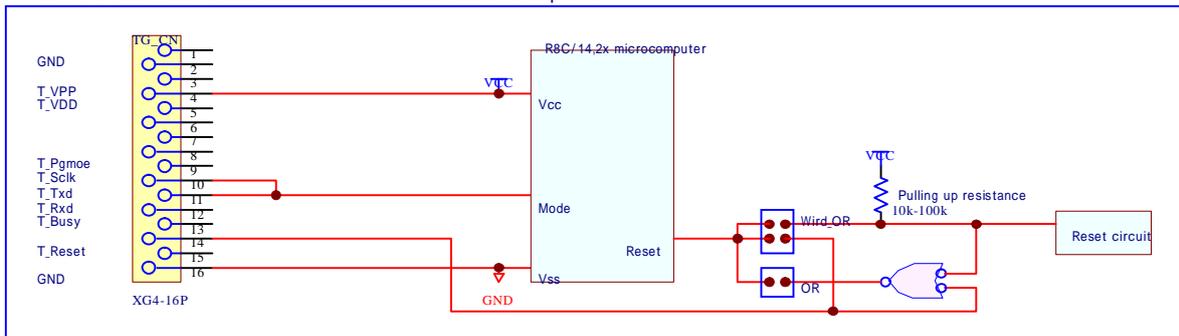


Fig 1.2-4

1.3 Target reference circuit

EFP-RC inside target I/F part

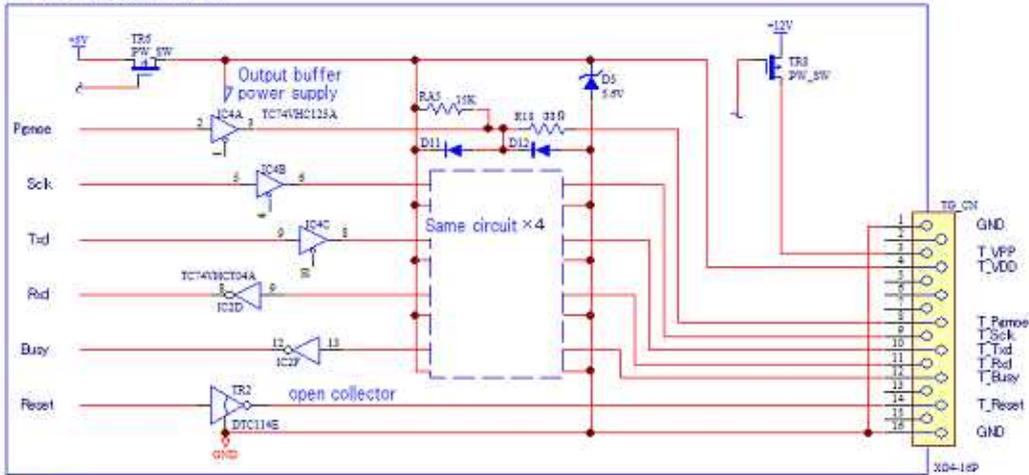


Fig. 1.3-1

Prevention of collision by the resistance. In the case there is not influence by resistance insertion

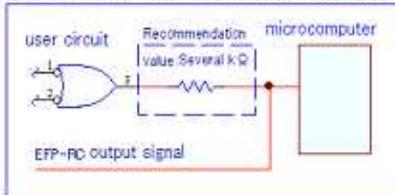


Fig. 1.3-2

Change by jumper SW

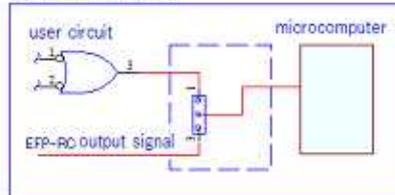


Fig. 1.3-3

Change by analog SW

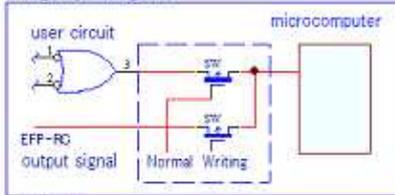


Fig. 1.3-4

Change with the 3th buffer IC

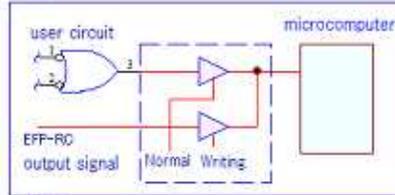


Fig. 1.3-5

Example: Disposal of setting signals which are not prepared for in EFP-RC

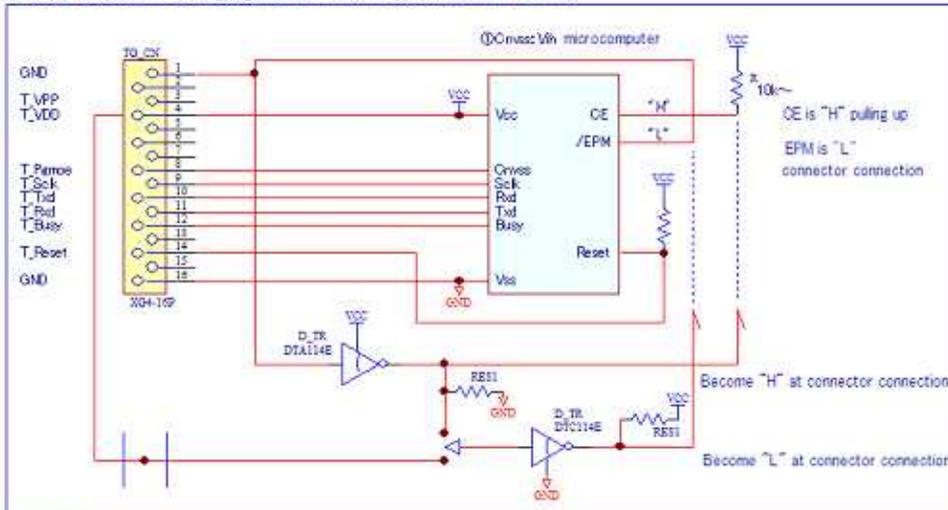


Fig. 1.3-6

2. Outside control signal

EFP-RC has each signal of "S key", "Display during the execute", and "Error display" on a target connector. It can write by control from the outside when you use these signals.

2.1 The operation of the outside control signal

In target connection connector to use with EFP-RC, the following signals are added to a terminal (6, 7,13pin) unused in EFP-S2 etc.

6pin: Error signal (Error) When it becomes Error during script execute, it becomes "L".

It restores with "S key pushing" or end timer.

7pin: Signal during the execute (Exec) During script execute becomes "L". and it becomes "H" when it finished.

8pin: Outside start (S key) Function same as "S key" of EFP-RC panel, it execute a script from the outside.

- If you use "outside start", it makes shortcut of "script.PBT file" and push "S key" once after power supply injection. Please do it in a script workability state.

2.2 The sequence of the outside control signal

It is shown as Fig.2-1 time chart after having done ON of "S key" or "Start" after power supply injection once.

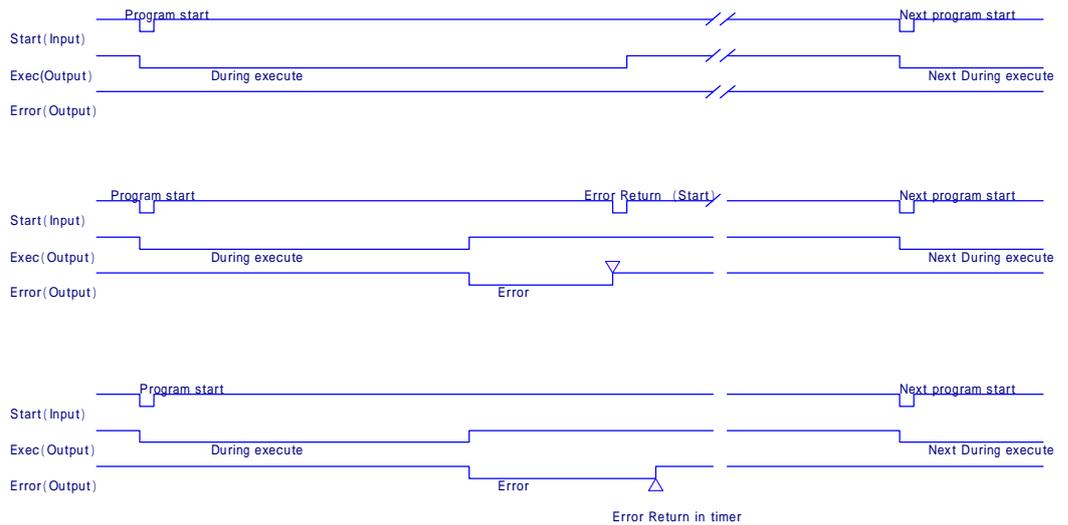


Fig2-1

Outside control signal

It is shown as connection example at the time of the outside operation in Fig.2-2.

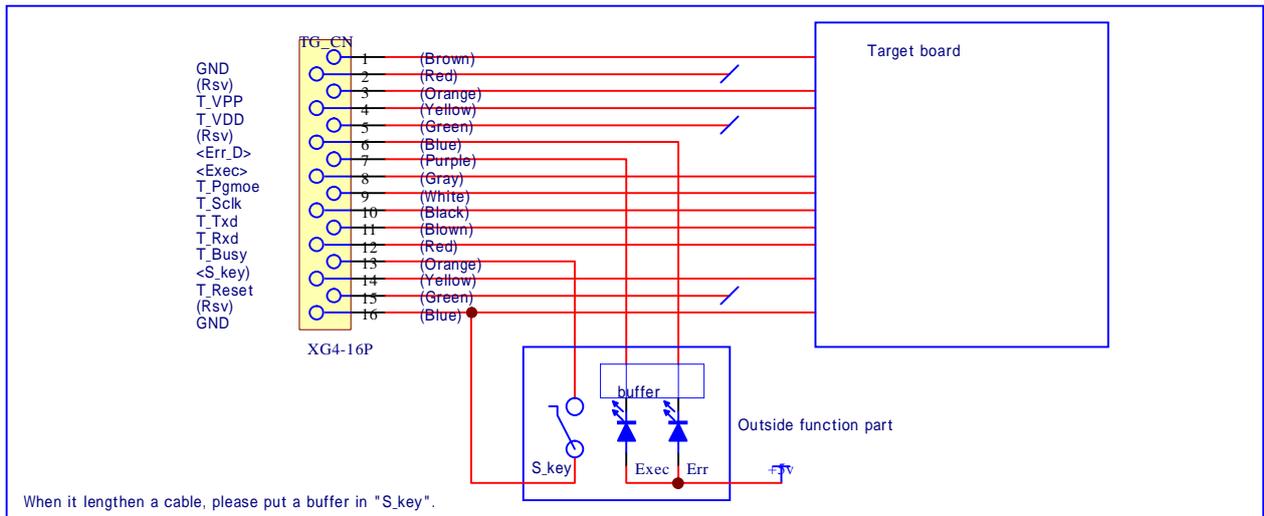


Fig2-2

3. Setting of the Compact Flash

This chapter, the format method of CF card to use for EFP-RC and the making of the default holder and data transmission method to CF card are explained.

3.1 The format of Compact Flash

When you use CF (Compact Flash) for the first time and in the case of initialize for CF, please insert it in CF_R/W (reader writer) of PC side, and format it in FAT16 form.

With the other formats, it does not work.

In addition, there is the case that does not work depending on the attribute of the format.

3.2 The initial of CF card by EFP-RC

Please inserts it in EFP-RC the formatted CF card once, and please initialize the default folder making.

There is the case that does not work normally if it does not initialize it first.

Folders such as "Down_load", "MCU_Type", "USER" are made by initialization.

3.3 File-transfer to CF card

When you write with EFP-RC, please forward a file of following and to CF card, and forward to the same holder by method of or two kinds of files.

“ Script file.PBT ” (making it by the file which described a execute command, by extension.PBT/text editor)

Please refer to each command explanation of the operation manual script file clause.

“ Data file .HXW ”(for writing, extension.HXW/soft makes by RC.exe.)

Please convert HEX data file described Intel hex or Motorola S format into HXW in control software "RC.EXE".

*Note: The size of the data region is equal or must be wide than the size of the script.

*At the time of HXW making, it must make it by the setting that accepted writing mode.

There is a form of 0:1Byte, 1:4Byte, 2:8Byte. (4,8Byte is for QzROM with mapping)

Reference example: In the top of HXW, the following contents are described in a text sentence.

EFP-RC HXW file.	: File name
0000E000,000FFFFF	: Range of data region Data from " 0000E000 " to " 000FFFFF "
0	: File format 0: 1Byte format
B000	: Check sum value of data

Transfer by USB (Connecting EFP-RC and PC with a USB cable)

In the state that was in the holder (user) of an arbitrary transfer object on EFP-RC; Please transfer with control soft "RC.EXE".

Transfer with reader writer PC side

Please insert CF in R/W of PC side, and transfer to a direct object holder from PC.

- "Down_load", "MCU_Type", "USER" holder are prepared for Compact Flash. Please transfer and making of a holder newly (it is necessary CF_RW) or these holders.
- When you transfer in exclusive software RC.exe, please forward in the state choose designated holder in EFP-RC side. It is not necessary when you remove Compact Flash and use it on CF_RW from PC.

4. Write Operation

This chapter is explained the function every each key of EFP-RC.

4.1 Key operation after power supply injection

The following screens are displayed at the time of the power supply injection.



Fig.5.1 Initial screen

- : Push the top and bottom button, and it chooses an display menu.
- : Open menu and holder
- : EFP-RC version display and CF space capacity display (Fig.5.2)
- **S** : Number of times of PBT executed (Upper section display), Error number of times (Lower berth display) (Fig.5.3)
- **A** : Counter clear mode (B cancel)
- **S** : Each counter is clear



Fig.5.2 Version display



Fig.5.3 PBT Number of times of PBT executed

- A** : MCU group name display (back to menu **B** or 10 second) (Fig.5.4)
- **□ □** : MCU Choice
- **S** : Setting (Display it at next power supply injection time)



Fig.5.4 MCU group name display

- B** : User memory setting mode (Fig.5.5)
It can perform user setting to use in plural users.



Fig.5.5 User memory setting mode

- S** : Mode to execute registration script (Fig.5.6)
- **□ □** : Choice registration script (priority the top or the script of the * mark)
- **S** : Registration script executed



Fig.5.6 Mode to execute registration script

Write operation

+ **A** + **B** + **S** : Menu file choice mode
 - : English/katakana of the menu can change.

+ **S** : Command end executed timer (change , interruption **B**) (Fig.5.7)
 - **S** : Interval timer (change , interruption **B**) (Fig.5.8)
 - **S** : Setting end

When you set "interval timer" in Non and Short, it can shorten the display time for status confirmation screen after carrying out command and the execute time of the script.



Fig.5.7 Command execute end time timer

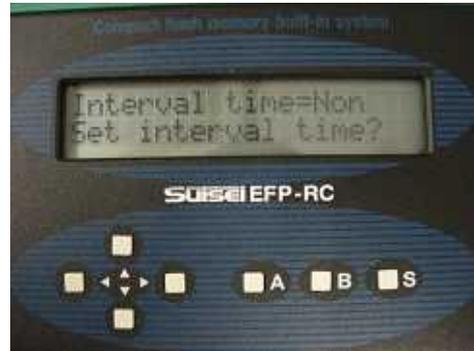


Fig.5.8 Interval timer

Key operation except the menu

	Holder choice	File choice
<input type="checkbox"/> <input type="checkbox"/>	Choose an display holder and a file	
<input type="checkbox"/>	Return to a higher holder	
<input type="checkbox"/>	Holder open, Contents display	(It does not function)
<input type="checkbox"/> A	Become a holder and Erase mode of the file	
<input type="checkbox"/> B	Display a holder and the property display of the file	
<input type="checkbox"/> S	(It does not function)	<ul style="list-style-type: none"> • Execute movement choice mode at time of PBT • Check sum display or choice mode of the editing at time of HXW • Perform the version display of Firm ware at time of FXW and become version up or choice mode of Check sum display • The other files become the dump display
<input type="checkbox"/> + <input type="checkbox"/> S		• Making report file (in the case of choice BT file)
<input type="checkbox"/> + <input type="checkbox"/> A		• Delete report file (delete all in the holder)

Please refer to menu at the time of the power supply injection of the operation manual and key operation clause except menu time for the details.

4 . 2 Writing execute operation

The execute of the script (writing by the file choice)

- In holder that HXW and a script are in the stored by the file operation of the foregoing paragraph, and choose necessary "script.PBT" file with key. It executes script when it push with - key.(Fig.5.9)



Fig.5.9 Script execute confirmation screen

Short cut registration and the execute of the script

- In the operation of the foregoing paragraph; choose "script.PBT" file with key. Push the key in order of , A , S. Short cut is registered. (Fig.5.10)
- When push key with menu display at the time of the next power supply injection; registered shortcut file "script.PBT" is indicate.(Max30) (Fig.5.11)
- Choose either file "script.PBT" and push key. It executes script.



Fig.5.10 Shortcut registration confirmation screen



Fig.5.11 Shortcut execute confirmation screen

The priority choice execute of the script

- Push key with the state that displayed "Script.PBT" file in a foregoing paragraph, The right of the group name gets "*" mark.
- Push key in the state, it is memorized as the last execute state.
- When pushed key with the next power supply injection menu, "Script.PBT" was executed earlier becomes priority. "Script .PBT" is executed when you push key again.
- After the script execute end, it can execute again with key unless an error occurs.
(It can set User group from 01 to 99 by operation. Cf. B key operation at the time of the menu)

Attention about each microcomputer

5. Attention about each microcomputer

It is explained a block of Flash ROM and ID cord, protection bit of QzROM.

5.1 Flash memory (ND, Dinor type)

5.1.1 Address about block elimination, please appoint Block last even number address.

C000 CFFF	D : Block	E,CFFE,1 (「,0」 lock bit is effective、「,1」 lock bit is invalid)
D000 DFFF	C : Block	E,DFFE,1
E000 EFFF	B : Block	E,EFFE,1
F000 FFFF	A : Block	E,FFFE,1

5.1.2 When it writes data to ID domain (it depends on microcomputer), the written code becomes ID cord. The value to set on ID cord becomes the value written in at this domain.

Reference : M16C/62P ID domain writing data

Address	FFFD	FFFE3	FFFEB	FFFEF	FFFF3	FFFF7	FFFFB	Attribute
Data ASC	S	U	I	S	E	I	S	, 0
Data HEX	53	55	49	53	45	49	53	, 1

I,FFFD,SUISEIS,0 ; ASC form

I,FFFD,53554953454953,1 ; HEX form

Reference2 : M3803xF ID domain writing data

Address	FFFD4	FFFD5	FFFD6	FFFD7	FFFD8	FFFD9	FFFDA	Attribute
Data ASC	S	U	I	S	E	I	S	, 0
Data HEX	53	55	49	53	45	49	53	, 1

I,FFFD,SUISEIS,0 ; ASC form

I,FFFD,53554953454953,1 ; HEX form

5.2 QzROM

5.2.1 There are the following special domains to Qz microcomputer. (M37546G Example)

FFD4 FFD7	Prohibit writing	Special mode register	
FFD8 FFDA	Writing possible	Special mode data	
FFDB	Writing possible only the last once	Protection domain	Set it by Y command

FFP-RC normal mode (write 1Byte/t=9---16), it writes in this domain too. Please take off this domain on script, and write in it by the division. (Blank, Verify, Program)

Blank	Program	Verify
B,c080,ffd3	p,main.hxw,c080,ffd3	V,main.hxw,c080,ffd3
B,ffd8,ffda	p,main.hxw,ffd8,ffda	V,main.hxw,ffd8,ffda
B,ffdc,fffd	p,main.hxw,ffdc,fffd	V,main.hxw,ffdc,fffd

6. Sample script file

Script file is introduced example of script file (extension.pbt) which is necessary for writing in EFP-RC. About the details of each command, please read an operation manual.

6.1 M16C/62P (M30624FGP)

When it executes Erase, Blank, Program, Verify, Read, Lock bit for all domains, it becomes the following constitution.

```
; Set MCU type
t=02

; Remove ID protection (Protection code EX : "SUISEIS")
l, fffdf, SUISEIS, 0

; Lock bit is invalid and Erases all domains
e,,1

; Blank checks whether elimination is completed
b,c0000,ffff

; Write Program (Lock bit Invalidity)
p,data.hxw,c0000,ffff,1

; Verify Check whether data are able to make writing normally
v,data.hxw,c0000,ffff

; Read writing data
r,read_data.hxw,c0000,ffff

; Validate Lock bit of all blocks
k,cfff
k,dfff
k,efff
k,f7fff
k,f9fff
k,fbfff
k,fdfff
k,fefff
k,ffff
```

Sample script

6 . 2 QzROM (M37544G2A)

When it executes Erase, Blank, Program, Verify, Read, Lock bit for all domains, it becomes the following constitution.

```
; Set MCU type (M37544G2A / t=11)
t=11

; Check Blank whether data are not written
b,e080,ffff

; Write Program
p,7544Qz_data.hwx,e080,ffff

; Verify Check whether data are able to make writing normally
v,7544Qz_data.hwx,e080,ffff

; Read writing data
r, 7544Qz_data_read.hwx,e080,ffff

; Read protection command execute. It accept no command after this, please be careful.
y
```

6 . 3 R8C/Tiny (R5F212B)

After setting communication baud rate When it executes Erase, Blank, Program, Verify, Read, Lock bit for all domains, it becomes the following constitution.

```
; Set MCU type
t=05

; Set communication baud rate (57600Bps), this command is effective for only R8C/Tiny.
; In addition, 19200Bps is set automatically as the rated value when it does not perform this
setting.
s=3

; Remove ID protection
l,ffff,SUISEIS,0

; Lock bit is effective and erases all domains
e,,0

; Blank Check whether data are not written
b,4000,13fff

; Write program (Lock bit effective)
p,data.hwx,4000,13fff,0

; Verify Check whether data are able to make writing normally
v,data.hwx,4000,13fff
```

Troubleshooting

7 . Troubleshooting

The part of the error to occur in EFP-RC and measures method is introduced.

Error code	Cause	Measures method
1210	Hxw value of header data does not match	Confirm whether Hxw File Type is right by conversion from HEX to Hxw. 720 Series:4bitMCU for 720 family 720 series 4500 Series:4bitMCU for 720 family 4500 series 4Byte Mode:8bitMCU 740 family QzROM 4Byte mode 8byte Mode:8bitMCU 740 family QzROM 8Byte mode Please choose Normal usually.
2001	Start address error	1) Does the top address of Hxw file accord with the top address of PBT file? 2) With Hxw data domain setting as Manual, please make an address of Hxw agree with a script. Or please match the end address of the script with Hxw file.
2002	End address error	1) Does the end address of Hxw file accord with the end address of PBT file? 2) With Hxw data domain setting as Manual, please make an address of Hxw agree with a script. Or match the end address of the script with Hxw file.
41xx	Device error	1) Confirm whether the power supply voltage of MCU is normal range. 2) Please confirm whether the line which links EFP-RC to MCU does not have any problem. 3) When you use a connector and IC socket, Poor contact may be taking place.
4184	R8 MPU Communication time-out error	In the case of R8C/Tiny MCU, It can set communication baud rate, but this error occurs when baud rate is too high. Please lower a setting baud rate.
5000	Program error	1) Confirm whether connection of MCU and EFP-RC does not have any problem. 2) When you use connector and IC socket, poor contact may be taking place.
5100	Verify error	1) Confirm whether connection of MCU and EFP-RC does not have any problem. 2) Perform several times Verify checks in MCU which caused Verify error. If error occurs, it may be poor contact. Clean your connector or IC socket.
5200	Blank error	When lock bit is effective and Erases it like E,,0, lock bit is invalid and Erase it.
5600	Read protection error	It occurs when you execute Read and Blank check for QzROM after Read protection. After Read protection availability, there is no method to remove. Please change MCU.
7005	Not found the appointed file	It occurs when there is no Hxw file which it appointed on a folder same as a script by program and Verify check.

When error occurs even if you take the measures mentioned above, please contact us.