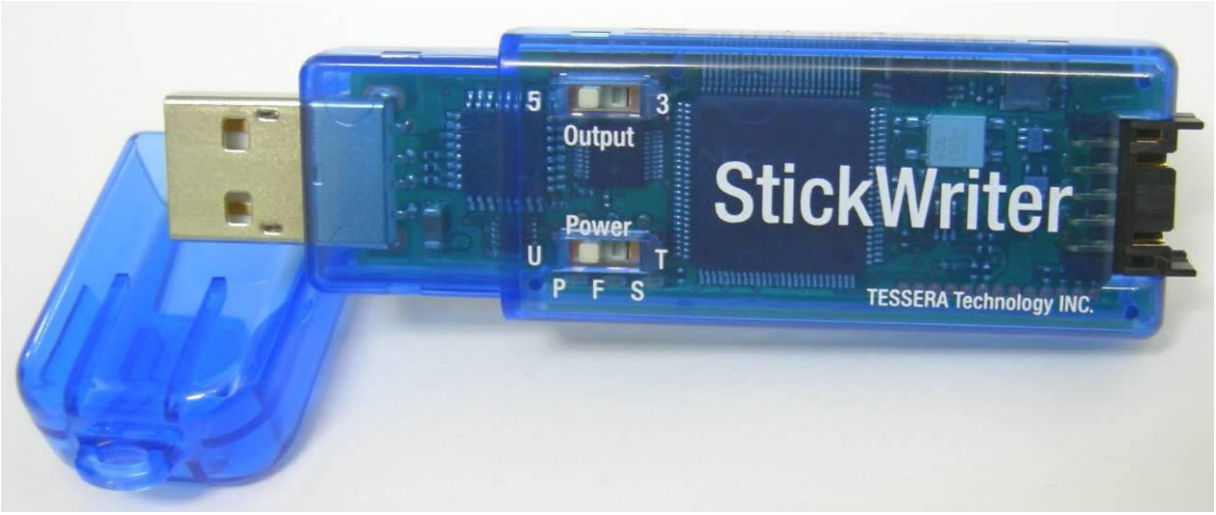
Flash Microcomputer Programmer

StickWriter

Ver.2

User's Manual



Tessera Technology Inc.

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TABLE OF CONTENTS

CHAPTER 1 OVERVIEW 5

1.1 System Configuration 6

CHAPTER 2 INSTALLATION 7

2.1 System Requirements 7

2.2 Software Installation 7

2.3 USB Driver Installation 7

2.4 Upgrade Version 8

CHAPTER 3 HARDWARE SPECIFICATIONS 9

3.1 Switch and LED 9

3.2 Target Interface Connectors Specifications 10

3.3 Target Cables 11

3.4 Extension Adaptor 12

3.5 FP4 Adaptor 13

3.6 E1 Adaptor (E1CA) 14

3.7 E1 Adaptor (E1CB) 15

3.8 E1 Adaptor (E1CC) 16

3.9 E1 Adaptor (E1CD) 17

3.10 Basic Specifications 18

CHAPTER 4 STICKWRITER OPERATION USING GUI SOFTWARE 19

4.1 Launching GUI Software 19

4.2 Tool Bar 21

4.3 "File" Menu 22

4.3.1 HEX File Download 22

4.3.2 HEX File Upload 24

4.3.3 HEX File Delete 24

4.3.4 Checksum 25

4.3.5 Parameter File Download 26

4.3.6 Setting File Download 28

4.3.7 Setting File Upload 30

4.3.8 Setting File Delete 32

4.3.9 Application Exit 33

4.4 "Programmer" Menu 34

4.4.1 Authorization code 34

4.4.2 Logging 35

4.4.3 Option 37
4.4.4 Secure Mode 37
4.4.5 Update Firmware 39
4.5 "Device" Menu 40
4.5.1 Blank Check 41
4.5.2 Erase 42
4.5.3 Program 43
4.5.4 Verify 44
4.5.5 EPV 45
4.5.6 EPV with Serial Number. 46
4.5.7 Read 47
4.5.8 Security 48
4.5.9 Checksum 49
4.5.10 Signature 50
4.5.11 Setup 51
4.6 "Help" Menu 53
4.6.1 About 53
CHAPTER 5 SETTINGS BY DEVICE SERIES 54
5.1 78K0S/Kx1+ Series 54
5.1.1 Setup Screen 54
5.1.2 Target I/F 57
5.1.3 Target I/F Connector 59
5.2 78K0 Series 60
5.2.1 Setup Screen 60
5.2.2 Target I/F 64
5.2.3 Target I/F Connector 68
5.3 78K0R Series 69
5.3.1 Setup Screen 69
5.3.2 Target I/F 72
5.3.3 Target I/F Connector 75
5.4 V850E, V850ES Series 76
5.4.1 Setup Screen 76
5.4.2 Target I/F 80
5.4.3 Target I/F Connector 84
5.5 V850E2 Series 85
5.5.1 Setup Screen 85
5.5.2 Target I/F 89
5.5.3 Target I/F Connector 93
5.6 R8C Series 94
5.6.1 Setup Screen 94
5.6.2 Target I/F 97
5.6.3 Target I/F Connector 99
5.7 RX, SH Series 100
5.7.1 Setup Screen 100

5.7.2 Target I/F 104
5.7.3 Target I/F Connector 107
5.8 RL78 Series 108
5.8.1 Setup Screen 108
5.8.2 Target I/F 112
5.8.3 Target I/F Connector 114
5.9 R32C Series 115
5.9.1 Setup Screen 115
5.9.2 Target I/F 118
5.9.3 Target I/F Connector 122

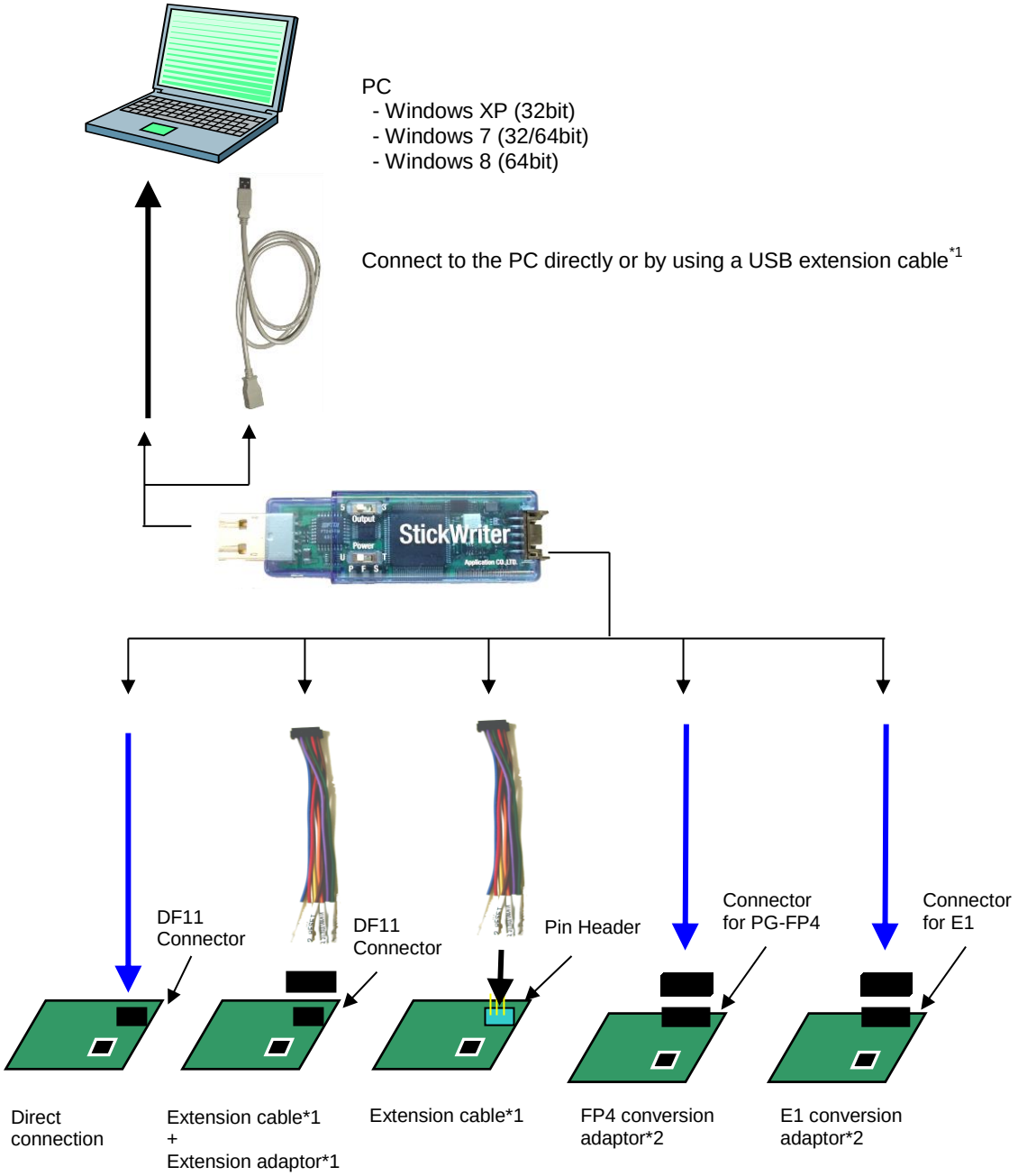
CHAPTER 6 STAND-ALONE OPERATION 123

CHAPTER 7 ADDITIONAL LICENSES 124

Chapter 1 Overview

StickWriter is a compact and lightweight flash writer used to write program data into a microcomputer with built-in flash memory.
It allows for both “on-board writing” in which the microcomputer is implemented on a customer-built board, and “off-board writing” in which the device is mounted on the IC socket of our SS board.
Since the 32-MByte flash memory is built into StickWriter, it allows to save HEX files and parameter files for each device. Therefore, stand-alone operation, which does not require a PC when writing, is possible.
This stand-alone system does not require even external power supply for StickWriter.

1.1 System Configuration



*1: All attachments are included in standard package
*2: Only one of the attachments is included in standard package

Chapter 2 Installation

2.1 System Requirements

OS	Windows XP (32bit) or Windows 7 (32 / 64bit) or Windows 8 (64bit)
Monitor	XGA (1024×768 or higher)
Interface	USB (Rev1.1/2.0) port

2.2 Software Installation

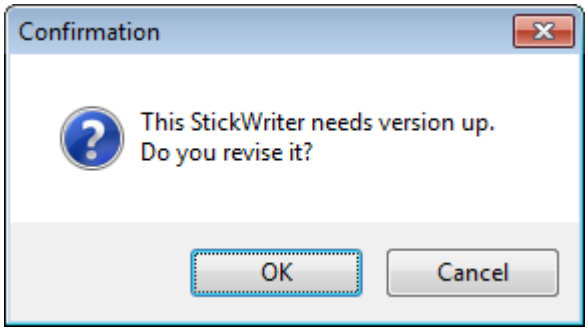
After inserting the StickWriter Installation CD into the CD drive, the installer launches automatically.
If the installer is not launched, double-click "Installer.exe". It detects the OS and run the "x64¥setup.exe" for 64bit OS and "x86¥setup.exe" for 32bit OS.
For Windows XP, Microsoft .NET Framework 2.0 or later must be pre-installed. If the OS is Windows XP, the Microsoft .NET Framework 2.0 installer launches.

2.3 USB Driver Installation

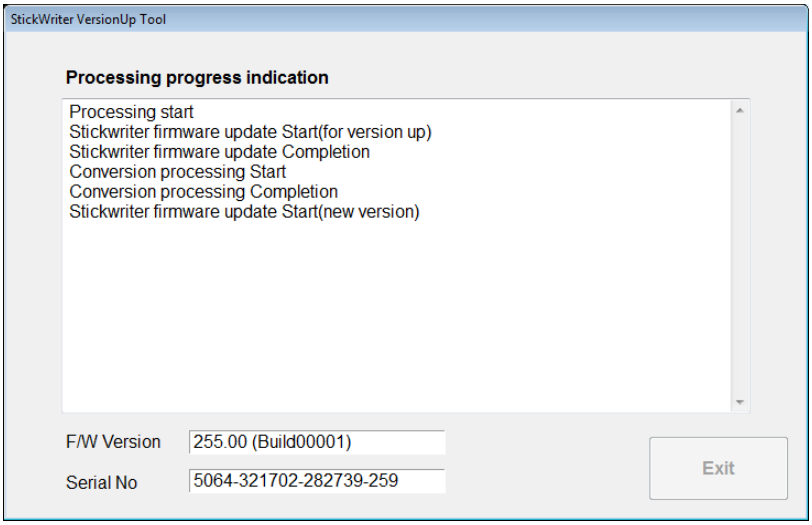
When StickWriter is first connected to PC, the appropriate USB driver will be installed. Launch the GUI after the installation completion message is appeared at the right-bottom area of Windows screen.

2.4 Upgrade Version

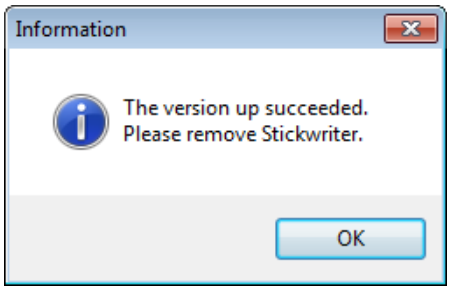
If you connect the StickWriter with old version of GUI before, the upgrade tool starts when you launch this latest version GUI. When you upgrade, the USB driver will be changed. Please note that you will not be able to use the old GUI after that.
(Please use the "Programmer" menu, then "Update Firmware" to update the firmware.)



Click OK to start the upgrade.



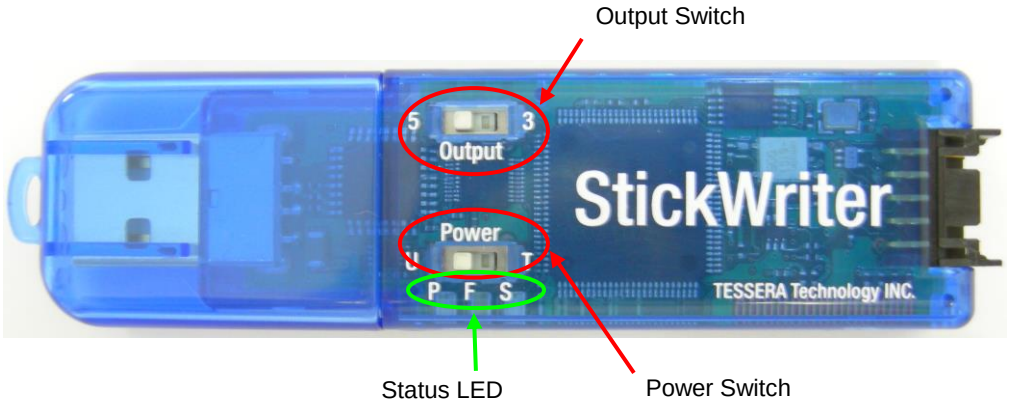
When the upgrade is completed, below dialog will be displayed. Disconnect the StickWriter and then click OK.



When StickWriter is connected to PC again, the new USB driver will be installed.

Chapter 3 Hardware Specifications

3.1 Switch and LED



Output Switch

Specifies the voltage when power is supplied to the StickWriter. Normally, use power supply form target board.

5	Approximately 5V Output (max 400mA). Outputs USB power from the PC. Note that in the USB standard, the power range is 4.75 - 5.25V (on the Host side). Also diodes are contained for protection, so the power voltage drops to 0.36V at maximum.
3	3.3V Output (max 250mA).

Power Switch

Specifies source of power supply to the StickWriter. Please do not change it when the power is supplied.

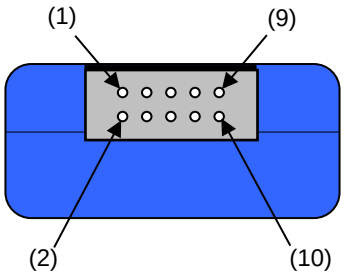
U	Supplied by the USB.
T	Supplied by the target. The target voltage should be 3.3V - 5V.

Status LED

The status is shown by LED below the Power Switch.

P Power	Blue	Light when power is supplied to StickWriter. Blink when it communicates with PC or target board.
F Fail	Red	Light when communication with the target device fails
S Success	Blue	Light when a command to the target device is successful.

3.2 Target Interface Connectors Specifications



Pin No	StickWriter Signal Name
(1)	GND
(2)	$\overline{RESET}$
(3)	SI/RxD/DGDATA
(4)	VDD
(5)	SO/TxD
(6)	FLMD0
(7)	SCK
(8)	H/S
(9)	CLK/DGCLK
(10)	Reserved

StickWriter Side Connector Type No:

- DF11-10DP-2DS (Hirose Electronics)

Appropriate Target Side Connectors:

- SMT Type DF11CZ-10DS-2V
- DIP Type DF11-10DS-2DSA
- Insulation Displacement Socket DF11-10DS-2R26
- Clamping Socket DF11-10DS-2C

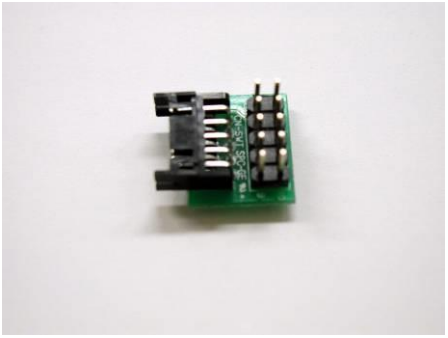
3.3 Target Cables

Cape Specifications			Display Specifications
(1)	Black	GND	1, GND
(2)	Brown	$\overline{RESET}$	2, RESET
(3)	Orange	SI/RxD/DGDATA	3, SI/RxD/DGDATA
(4)	Red	VDD	4, VDD
(5)	Yellow	SO/TxD	5, SO/TxD
(6)	Green	FLMD0	6, FLMD0
(7)	Blue	SCK	7, SCK
(8)	Purple	H/S	8, H/S
(9)	White	CLK/DGCLK	9, CLK/DGCLK
(10)	None		

Appropriate Header Pin Specifications: 0.64mm, Length: 6mm
Recommended Connector: PS Series (Japan Aviation Electronics Industry, Limited.)

3.4 Extension Adaptor

An adaptor used for connecting through a target cable if StickWriter cannot connect due to implications of the framework, etc. Please connect all of the 9 cables, connecting pin1 of the pin header to pin1 of the target cable.

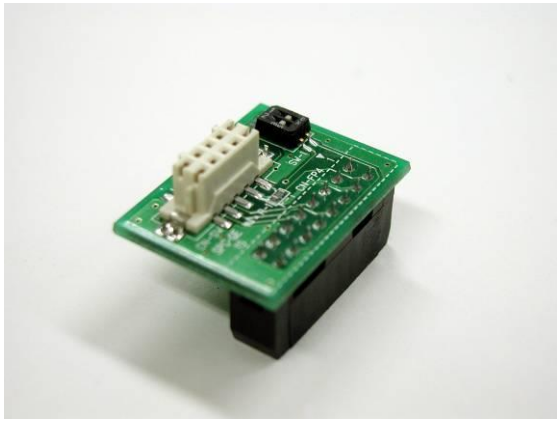


3.5 FP4 Adaptor

An adaptor used for converting to a 16pin connector for Renesas Electronics PG-FP5 and MINICUBE2.
When using SW-1, turn both 1 and 2 ON.

When using DGDATA and DGCLK such as 78K0S/Kx1+ series, turn both 1 and 2 OFF.
When using TOOL0 such as 78K0R series, turn 1 ON and 2 OFF.
When using TOOLC/D with 78K0 series, turn 1 ON and 2 OFF.

SW-1	All Others	78K0S/Kx1+	78K0R	78K0 (TOOLC/D)
1	ON	OFF	ON	ON
2	ON	OFF	OFF	OFF



3.6 E1 Adaptor (E1CA)

An adaptor used for converting to a 14pin connector for Renesas Electronics E1.
Depending on the target device, set the switches shown as following table.

SW1	R8C Family	RX Family
1	ON	OFF
2	OFF	ON

Pin settings on the target board.

Pin No	R8C Family	RX Family
1	-	-
2	-	-
3	-	-
4	-	-
5	-	TxD
6	-	-
7	MODE	MD1 or P00 or PC7
8	VCC	VCC
9	-	-
10	-	MD0 or MD
11	-	RxD
12	-	-
13	/RESET	/RESET
14	GND	GND

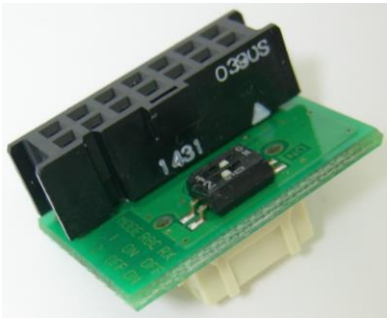
14pin Converting Adopter Side Connector Type No:

- XG4H-1431 (Omron Corporation)

Recommended Target Side Connectors:

- 7614-6002 (Sumitomo 3M Limited)

Note 1: Connection with R8C family supports the standard serial input/output mode 3.
Note 2: Operate pull-down for RX family EMLE pin in user side.
Note 3: RX family MDE pin (endian setting) depends on setting in user side.



3.7 E1 Adaptor (E1CB)

An adaptor used for converting to a RL78's 14pin connector for Renesas Electronics E1.

Pin settings on the target board.

Pin No	RL78
1	-
2	GND
3	-
4	-
5	TOOL0
6	-
7	-
8	VDD
9	EVDD (Note 1)
10	/RESET
11	-
12	GND
13	/RESET
14	GND

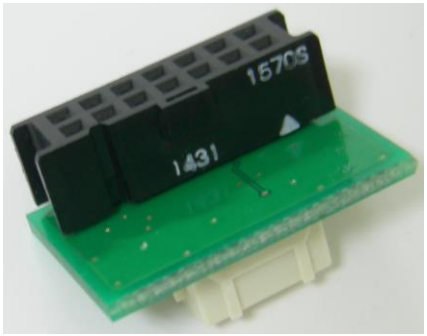
14pin Converting Adopter Side Connector Type No:

- XG4H-1431 (Omron Corporation)

Recommended Target Side Connectors:

- 7614-6002 (Sumitomo 3M Limited)

Note 1: Connect VDD for the microcomputer without the terminal EVDD.



3.8 E1 Adaptor (E1CC)

An adaptor used for converting to a V850E2's 14pin connector for Renesas Electronics E1. Depending on the Communication method, set the switches shown as following table.

SW1	CSI	UART
1	**ON**	OFF
2	**ON**	OFF
3	OFF	**ON**
4	OFF	OFF

Pin settings on the target board.

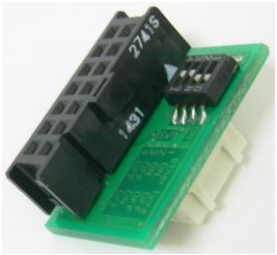
Pin No	V850E2	
	CSI	UART
1	FLSCK or FLCS0SCI	N.C.
2	GND	GND
3	X1 or N.C.	X1 or N.C.
4	FLMD0	FLMD0
5	FLSO or FLCS0SO	N.C.
6	N.C.	N.C.
7	FLSI or FLCS0SI	FLRXD or FLUR0RTX
8	EVCC	EVCC
9	FLMD1(GND)	FLMD1(GND)
10	/RESET or N.C.	/RESET or N.C.
11	N.C.	N.C.
12	GND	GND
13	/RESET	/RESET
14	GND or N.C.	GND or N.C.

14pin Converting Adopter Side Connector Type No:

- XG4H-1431 (Omron Corporation)

Recommended Target Side Connectors:

- 7614-6002 (Sumitomo 3M Limited)



3.9 E1 Adaptor (E1CD)

An adaptor used for converting to a R32C's 14pin connector for Renesas Electronics E1.

Pin settings on the target board.

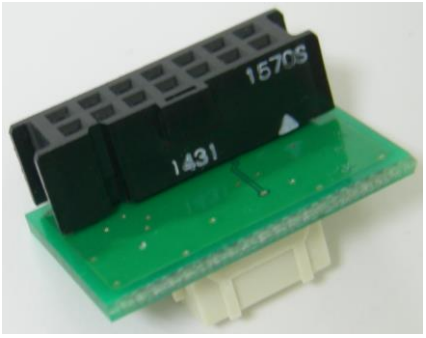
Pin No	R32C
1	SCLK
2	-
3	CNVSS
4	/EPM
5	TXD
6	-
7	/CE
8	VCC
9	BUSY
10	-
11	RXD
12	-
13	/RESET
14	GND

14pin Converting Adopter Side Connector Type No:

- XG4H-1431 (Omron Corporation)

Recommended Target Side Connectors:

- 7614-6002 (Sumitomo 3M Limited)



3.10 Basic Specifications

Built-in data memory		32MByte (NAND Flash: with ECC process)
Supported communication method		UART, clock synchronizer SIO (with/without H/S)
Target voltage		1.65V - 5.5V (For under 3.3V, power supply is required from USB)
Interface	PC side	USB 2.0/1.1 (Bus power operation)
	Target side	Hirose Electronics DF11 series
Voltage capable for output		5V / 3.3V
Power Supply		PC / Target board (3.3V - 5.5V)
Consumption current		Maximum 80mA
Body size		W87 × D23 × H12 (mm)

Chapter 4 StickWriter Operation using GUI Software

4.1 Launching GUI Software

(1) System Connection
Connect StickWriter to the PC that the StickWriter GUI program was installed.

(2) Start GUI Software
Select Windows Start menu -> "Programs" -> "StickWriter" -> "StickWriter Ver.2".
The GUI software communicates with StickWriter firmware and starts the initializing process. When the initialization is successfully completed, Fig 1 is displayed.

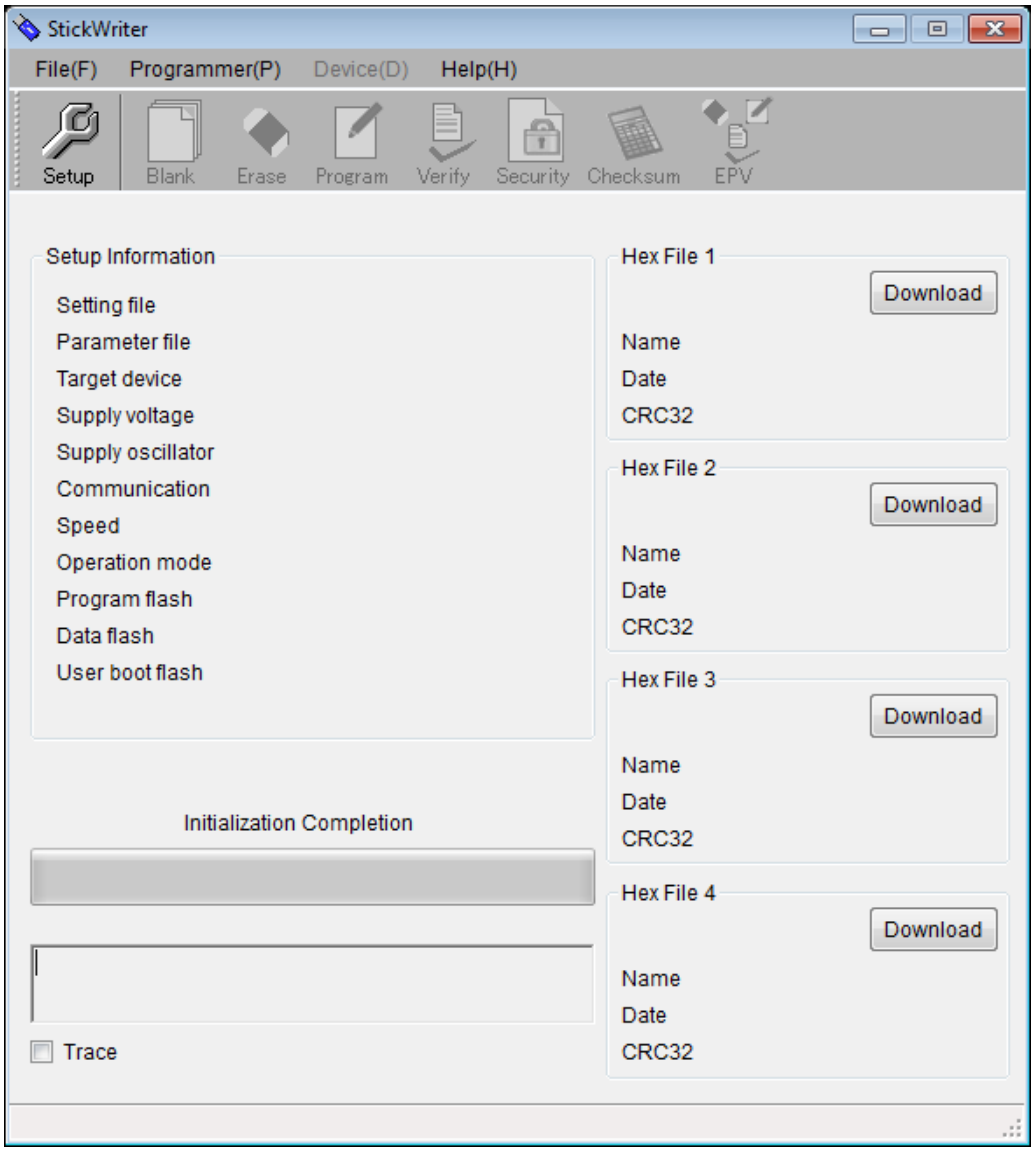


Fig 1

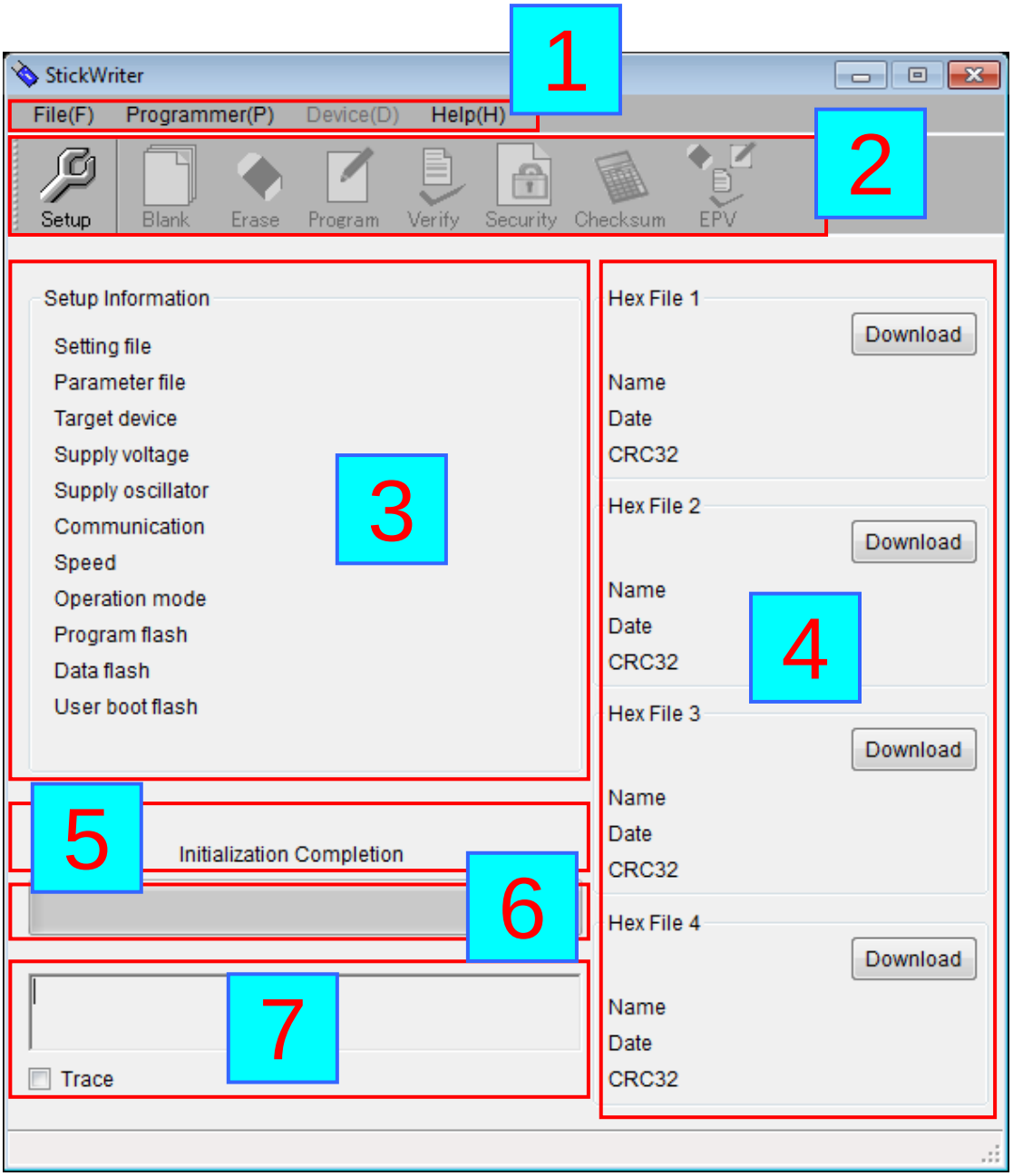


Fig 2

(3) GUI Components

[1] Menu Bar (Displayed on top)
[2] Tool Bar (Displayed under the menu)
[3] Setup Information section
[4] HEX File Information section
[5] Status Display section
[6] Progress Status Display section
[7] Trace Display section
* Setup Information section shows the information from the default setting file.

4.2 Tool Bar

The Tool Bar consists of functions that are commonly used in Device menu.

"Setup" button

"Blank Check" button

"Erase" button

"Program" button

"Verify" button

"Security" button

"Checksum" button

"EPV" button

4.3 "File" Menu

When you click the "File" menu, you will see following pull-down menus.
The menu mainly consists of file operations.

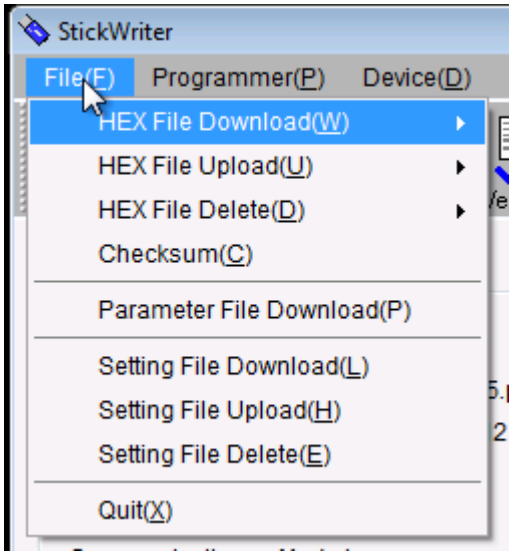


Fig 3

4.3.1 HEX File Download

StickWriter can download up to 4 HEX files on the built-in memory. Select a download number and select the HEX file to be written.

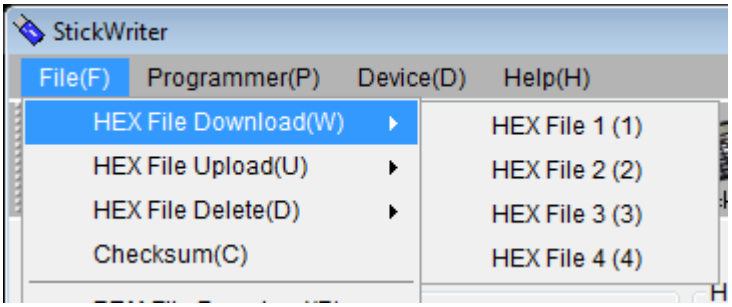


Fig 4

Also, you can download a HEX file by clicking one of the "Download" button in HEX File information section.

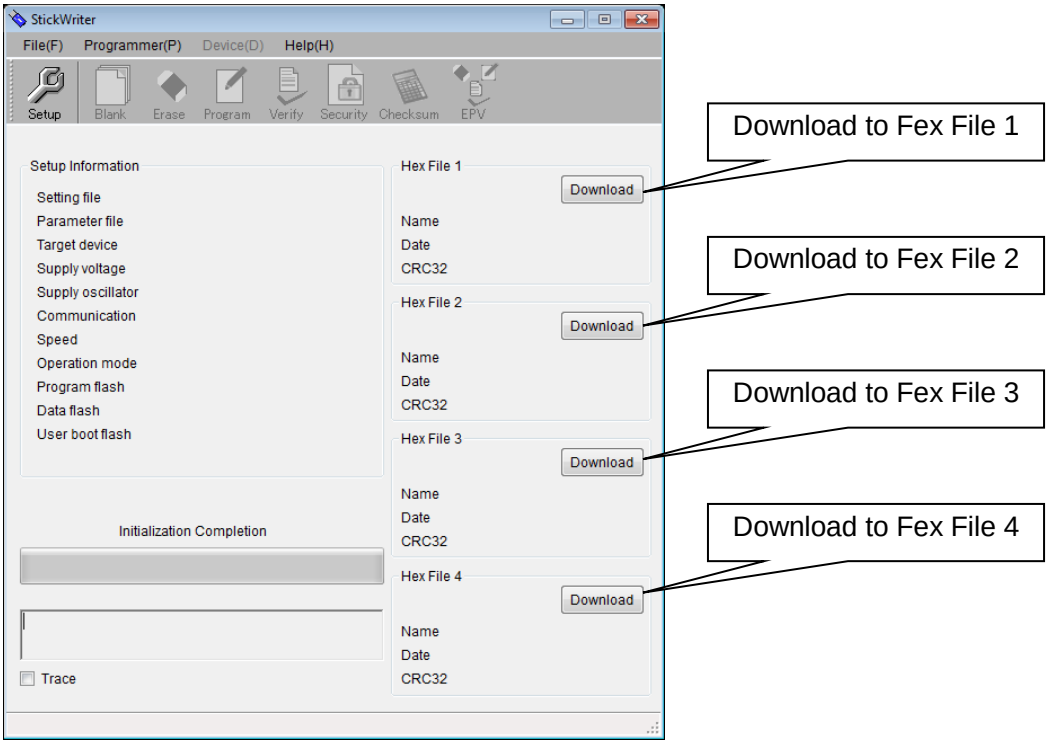


Fig 5

4.3.2 HEX File Upload

Upload and save the HEX file in PC that the file was downloaded on the StickWriter. Select a HEX file number, and then enter the HEX file name to be saved.

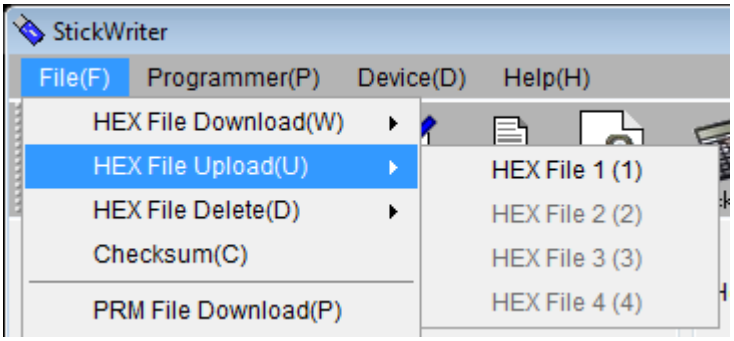


Fig 6

The file format is Motorola S.

4.3.3 HEX File Delete

You can delete a HEX file that is downloaded on StickWriter. Select a HEX file number to delete.

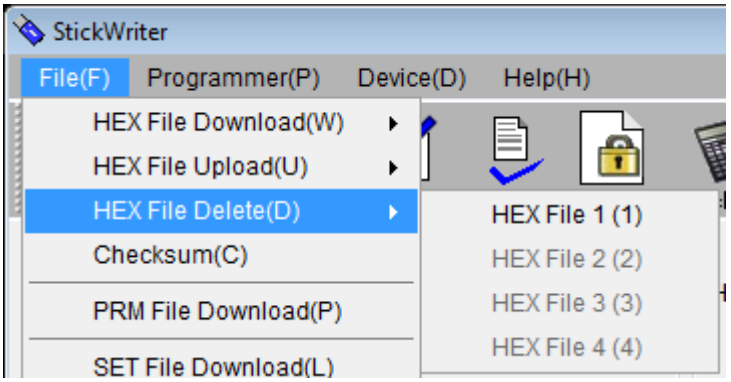


Fig 7

4.3.4 Checksum

You can display the checksum value of the HEX file downloaded on the built-in memory of StickWriter.

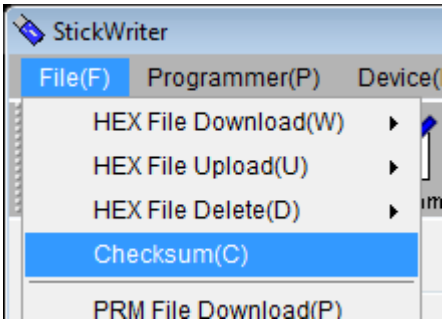


Fig 8

Device Checksum		A value calculated by the same algorithm as the target device.
FP4 Algorithm		A value calculated by the same algorithm as programmer Renesas Electronics "PG-FP4".
	CRC sum (32bit: 1M)	A value when Program Area of PG-FP4 is set to 1Mbyte.
	CRC sum (32bit: 2M)	A value when Program Area of PG-FP4 is set to 2MByte.

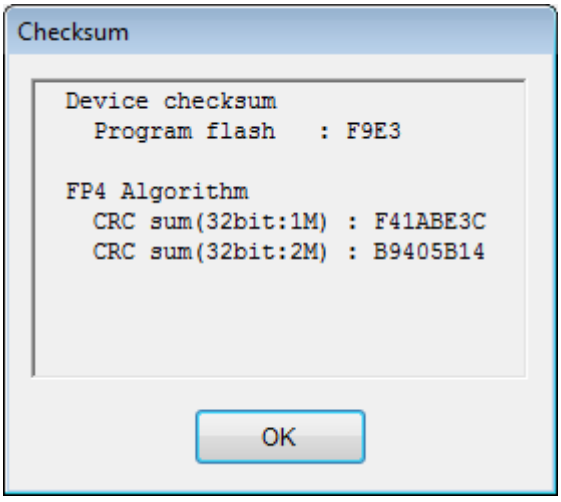


Fig 9

4.3.5 Parameter File Download

Select a parameter file to download to the StickWriter built-in memory. The number of licenses purchased will determine the number of files permitted for downloading.

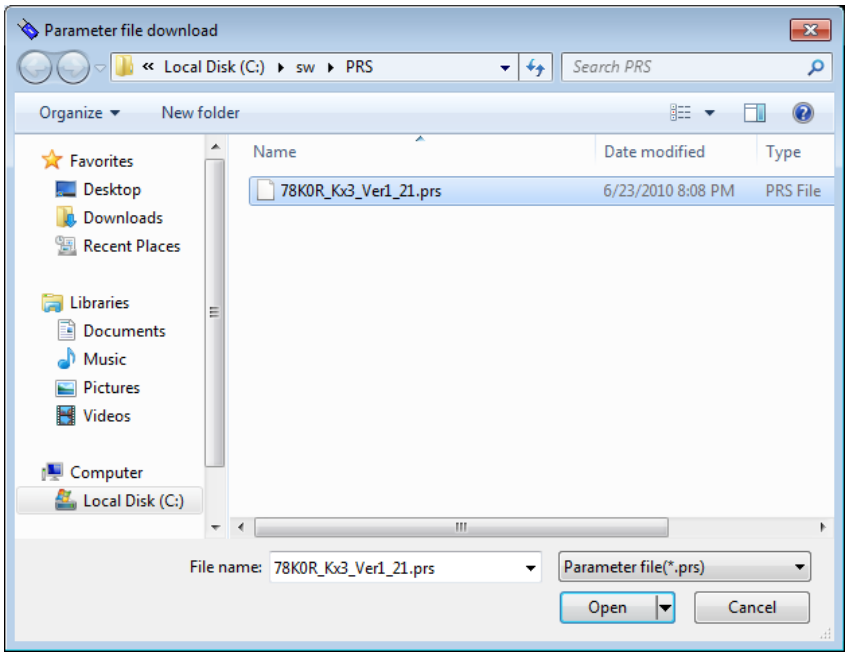


Fig 10

Select a parameter file to download.

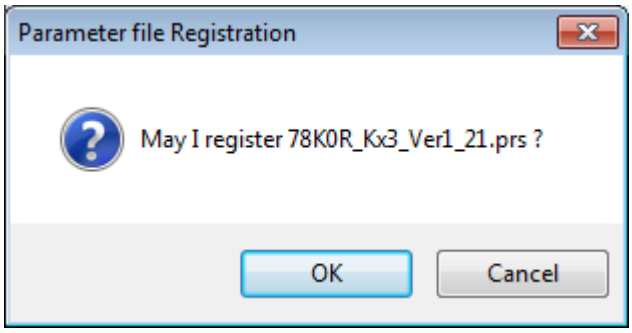


Fig 11

Press "OK" to display the license confirmation window or the update confirmation window.

For new registration:

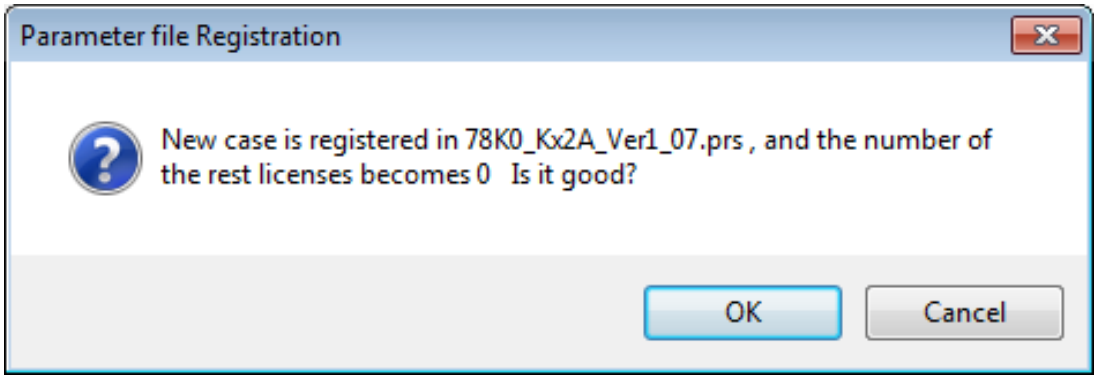


Fig 12

For registration update

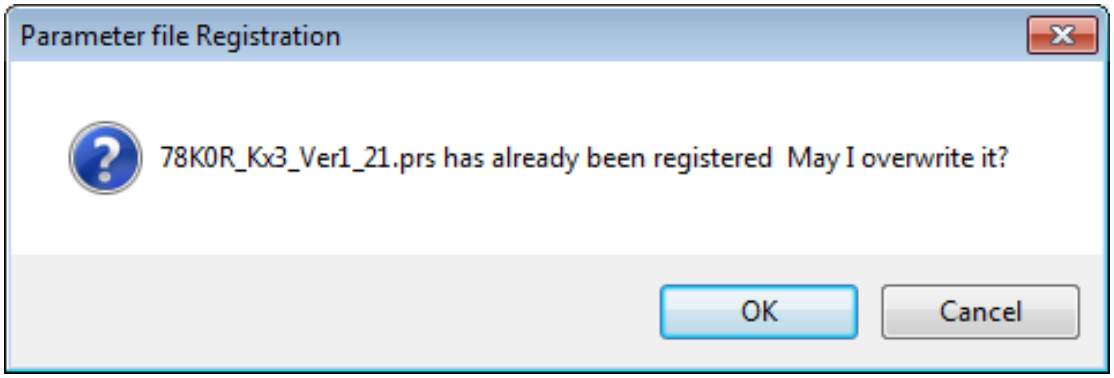


Fig 13

The selected parameter file will be downloaded to the built-in memory of StickWriter.
The latest parameter files can be downloaded from the website
(http://www.tessera.co.jp).

4.3.6 Setting File Download

Select a setting file to download to the StickWriter built-in memory.

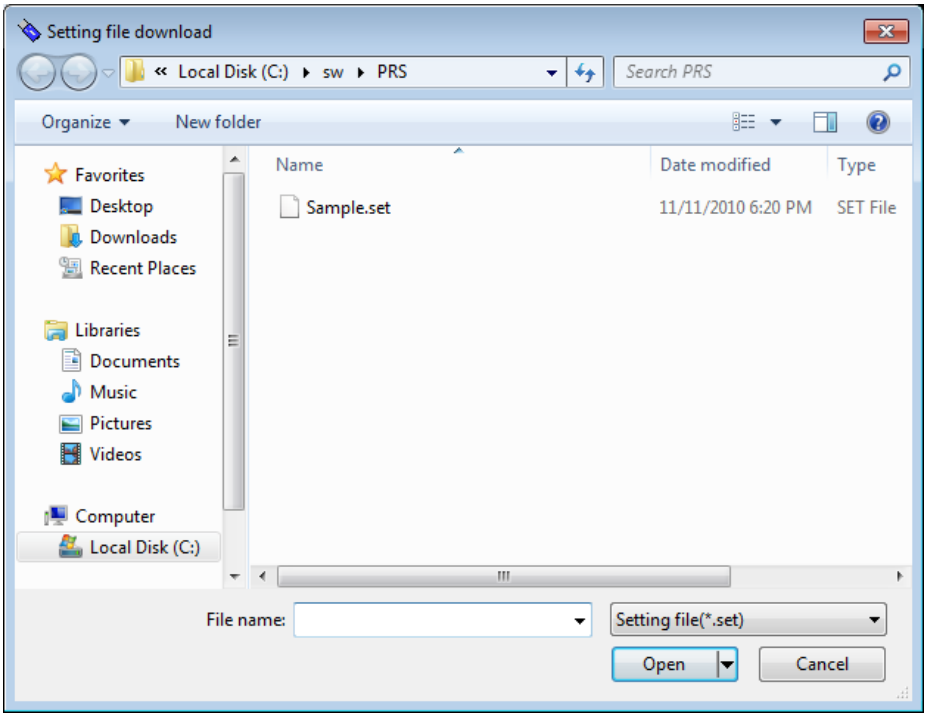


Fig 14

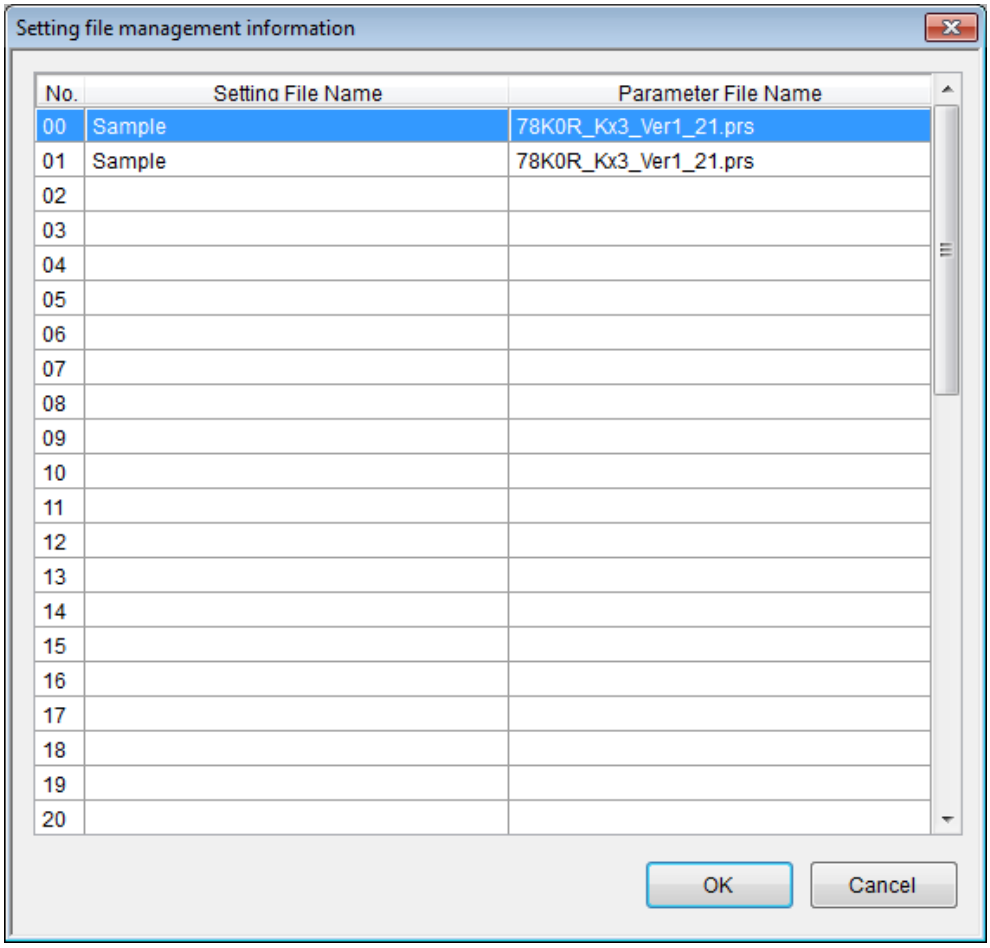


Fig 15

Select a number to download, and then click "OK".

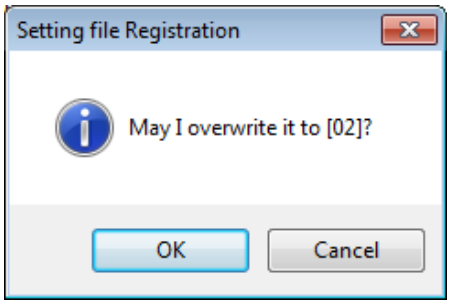


Fig 16

Confirm the destination of the download and click "OK".
The downloaded setting file becomes the default setting file.

4.3.7 Setting File Upload

Select a setting file to upload from StickWriter to PC and save as a file.

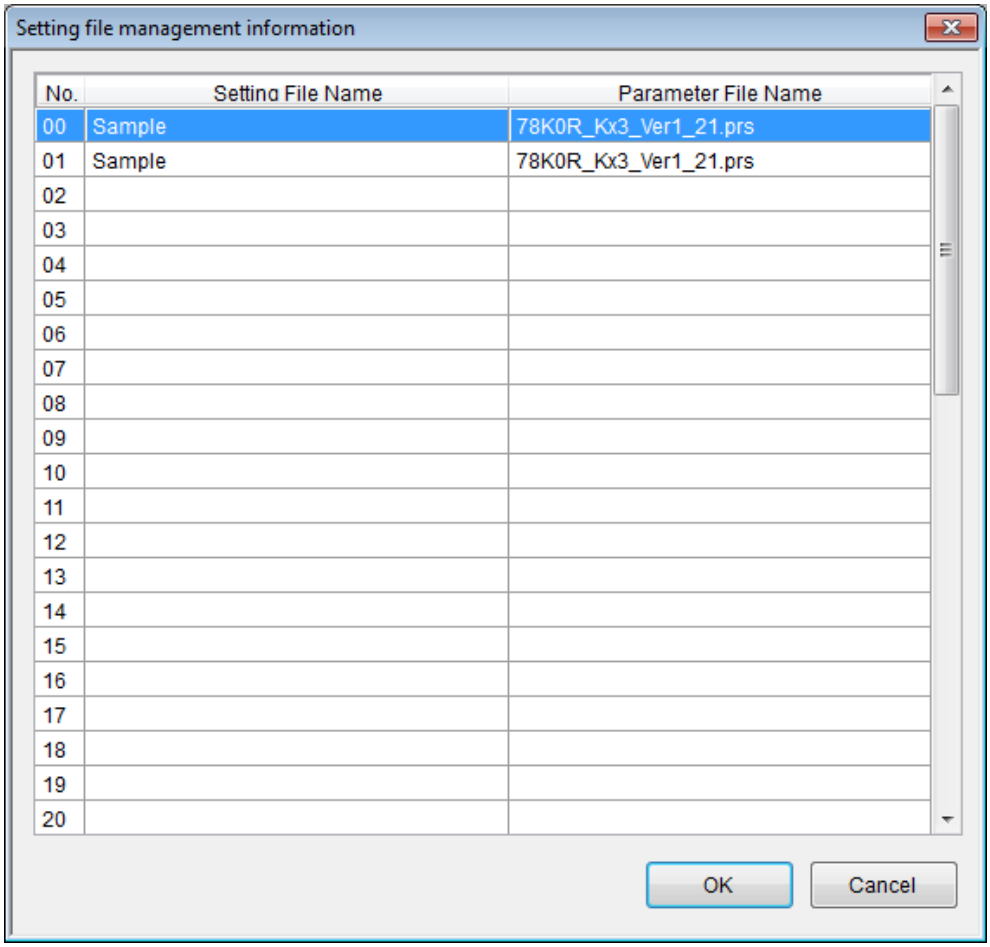


Fig 17

Select a setting file number to upload and click "OK".

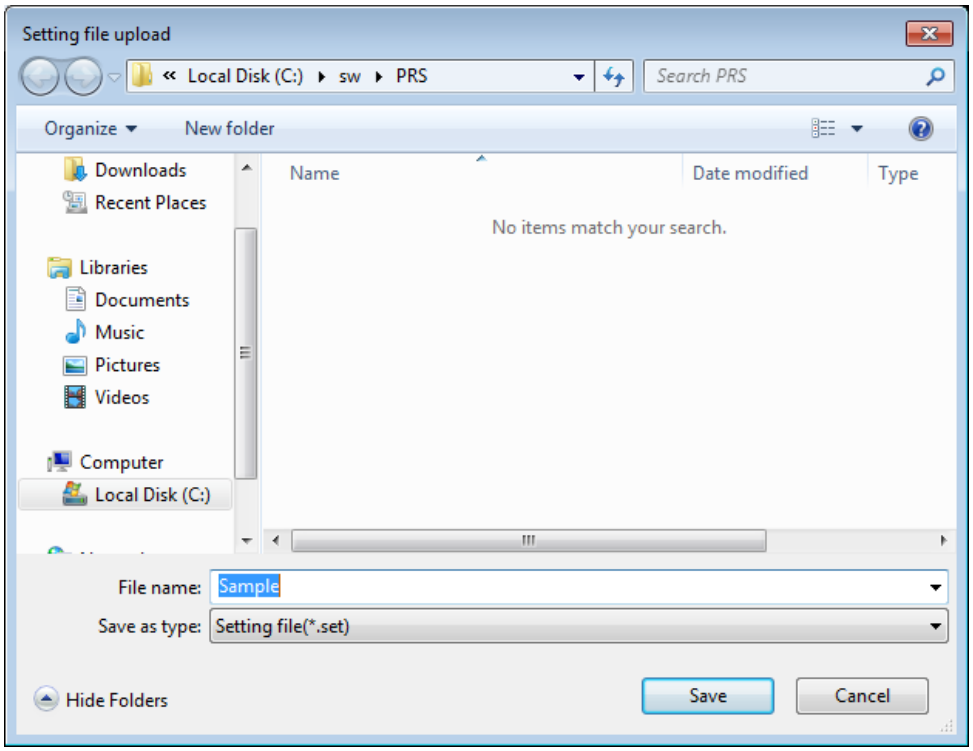


Fig 18

Enter a file name and click "Save" to start uploading.
The saved file can be downloaded from the "Setting File Download" menu.

4.3.8 Setting File Delete

Select a setting file to delete in StickWriter.

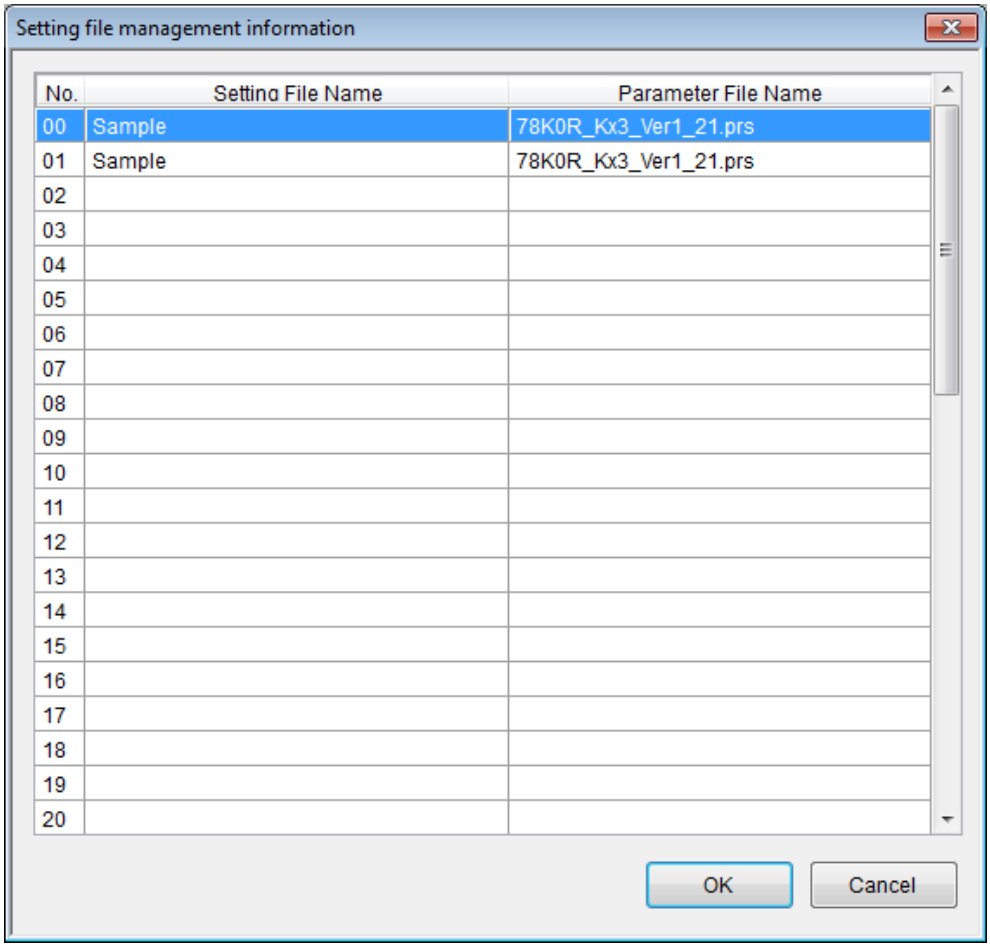


Fig 19

Select a setting file number to delete and click "OK".

4.3.9 Application Exit

Exit the StickWriter GUI software. You can also exit by clicking the X button on the right side of the task bar.
You can exit the software without displaying the confirmation message by changing the "Option" settings in Programmer menu.

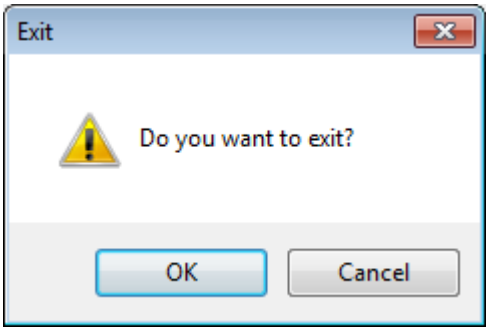


Fig 20

Click "OK" to close the application.
Click "Cancel" to cancel closing the application.

4.4 "Programmer" Menu

When you click the "Programmer" menu, you will see following pull-down menus.
The menu consists of programmer settings.

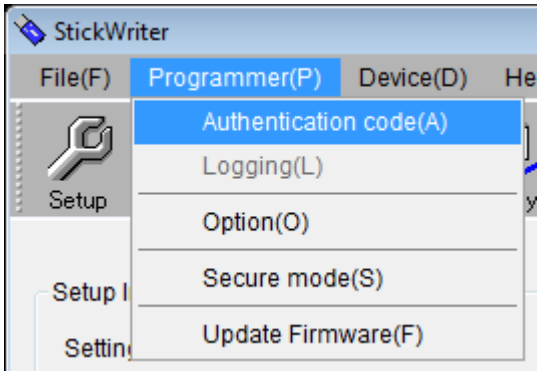


Fig 21

4.4.1 Authorization code

Enter the distributed authentication code to update the number of licenses for StickWriter.

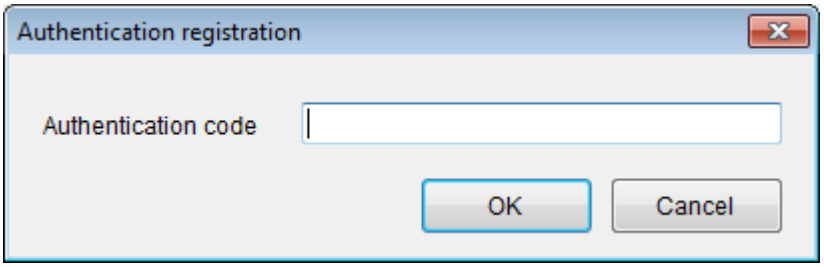


Fig 22

Enter the authentication code and press "OK" to execute authentication.

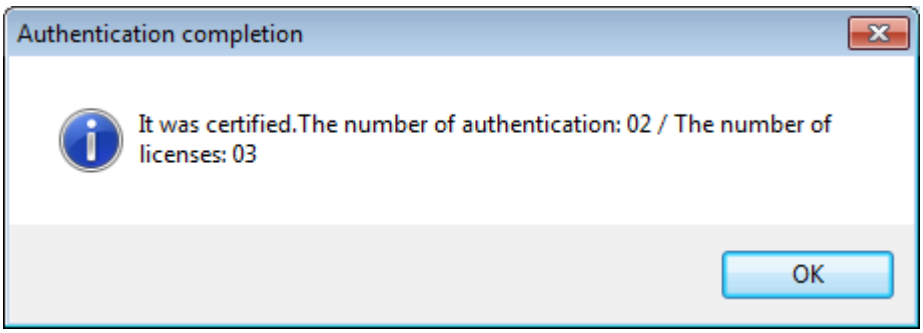


Fig 23

When the authentication is completed, the number of authentications (the number of registered parameter files) and the number of licenses will be displayed.

4.4.2 Logging

Display and save the results of log records during stand-alone operation.
To enable the log history, the following three conditions must be met.

- A default setting file is registered.
- The "Log Record" is checked in the setup screen.
- Any setting other than "No operation" is selected for stand-alone operation in setup screen.

The log data will be cleared when you click "OK" in setup screen.

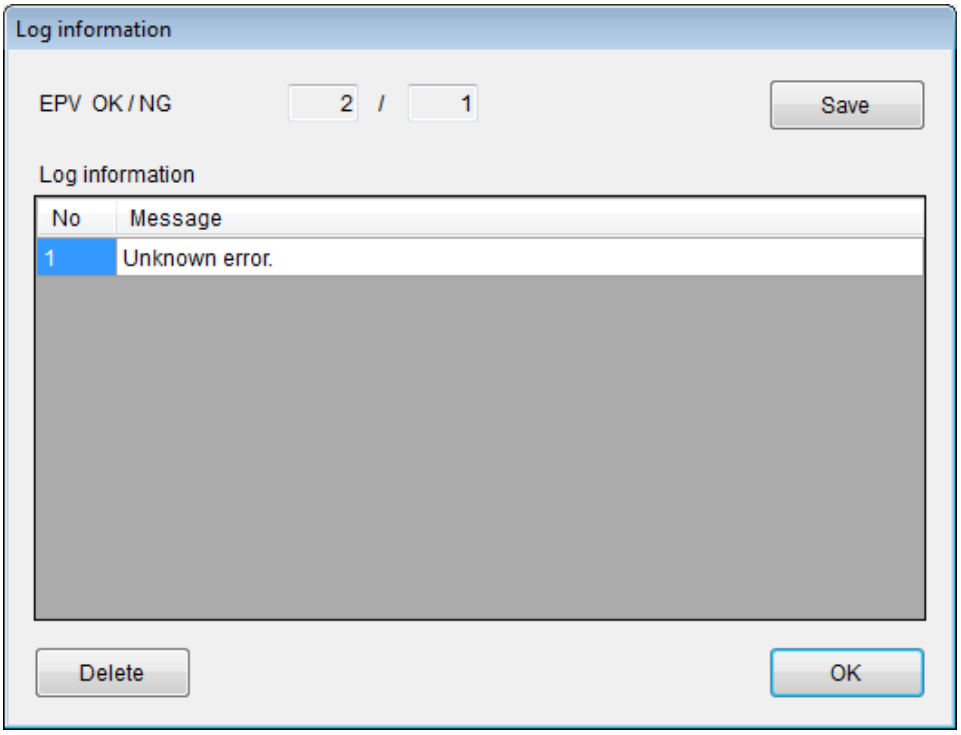


Fig 24

Click "Save" to display the window to enter a saving file name.

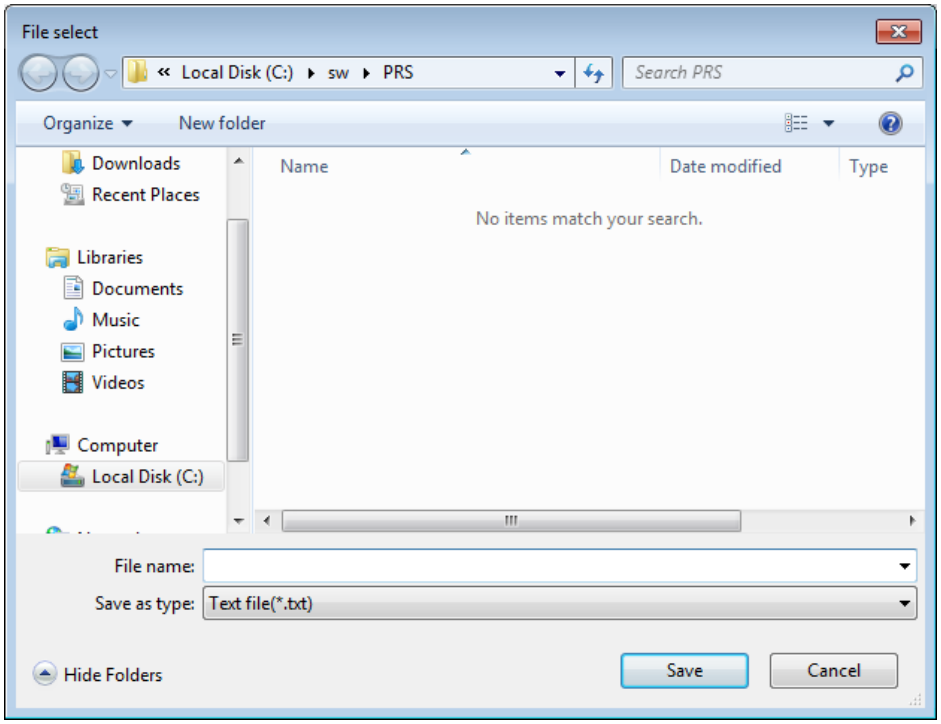


Fig 25

Enter a file name and click "Save" to save the log file.

Example of log file contents:

```
EPV   OK   /   NG   2 / 1
001 Unknown error.
```

Click "Delete" to delete the selected log data.

4.4.3 Option

You can select to display or not to display the confirmation message when closing the StickWriter GUI software. The setting will be saved to the PC.

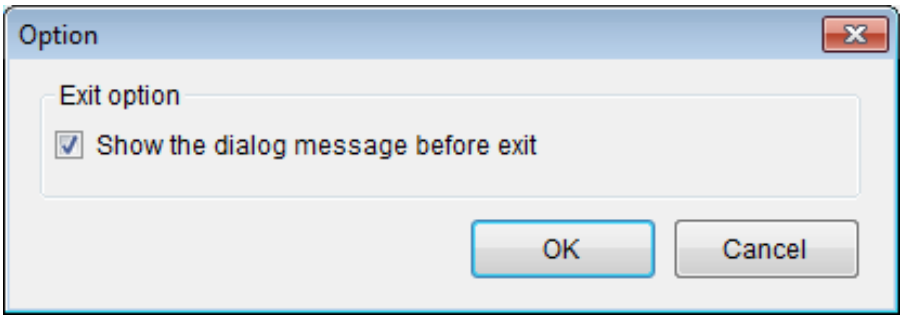


Fig 26

4.4.4 Secure Mode

StickWriter can be set to Secure Mode.
When StickWriter is set to Secure Mode, following operations will be restricted.

- To download, upload, delete any HEX files.
- To download, upload, delete setting files
- To edit setting files (Setup button)
- To download parameter files.
- To use "Checksum" in "File" menu.
- To use "Authentication code" and "Update Firmware" in "Programmer" menu.
- To use "Read" in "Device" menu.

Enter a password to disable the Secure Mode (max 32 characters).
Because the settings and password are stored in StickWriter, you can use the same password even you use other PC to connect to the StickWriter.

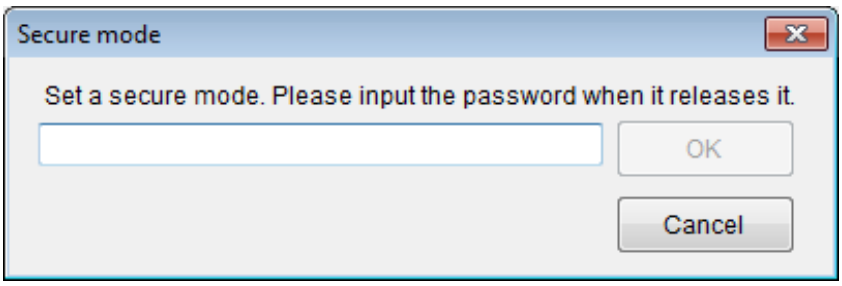


Fig 27

When it sets to Secure Mode, the title bar displays "(Secure Mode)" as shown in the figure.

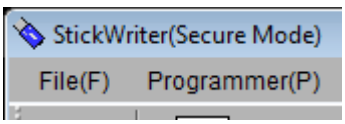


Fig 28

To cancel Secure Mode, select "Secure mode" menu again.

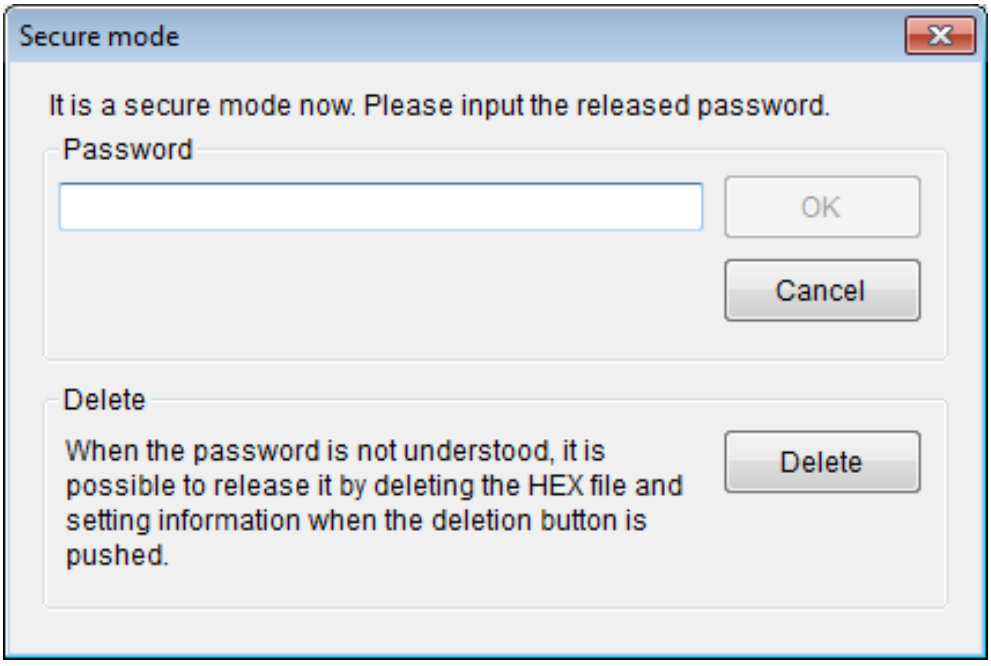


Fig 29

You can cancel Secure Mode by entering the password that you set when you enabled the Secure Mode.

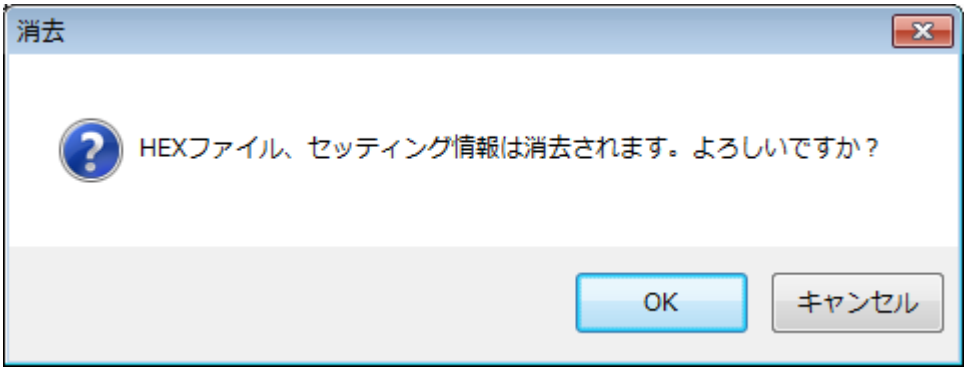


Fig 30

If you forgot the password, you can click "Delete" button to delete all HEX files and default setting files for canceling the password.

4.4.5 Update Firmware

Update the firmware program for StickWriter.

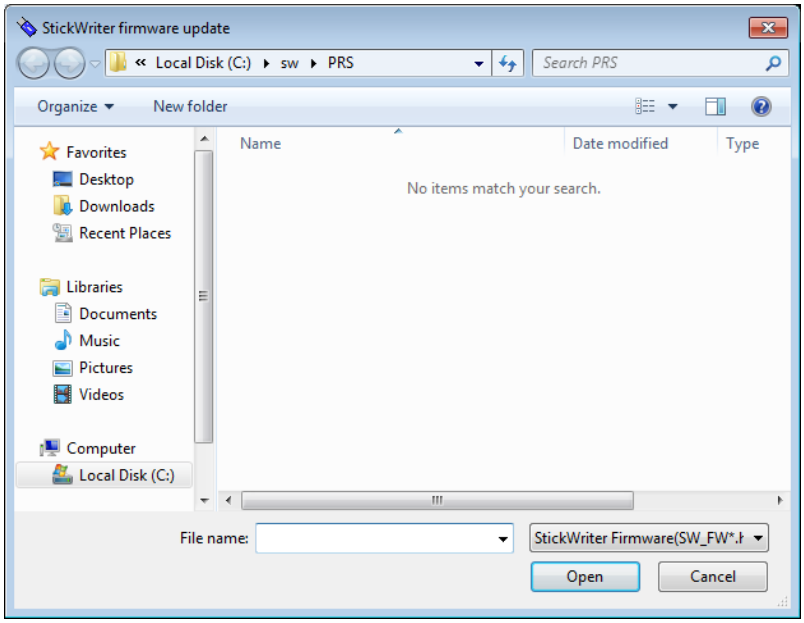


Fig 31

Enter the file name and click "Open" to start downloading the firmware.

4.5 "Device" Menu

Clicking the "Device" menu displays a pull-down menu shown below. The menu consists mainly of commands related to programming operations for the target device, such as deleting, programming and verifying.
Some of these commands can be disabled depending on the target devices.

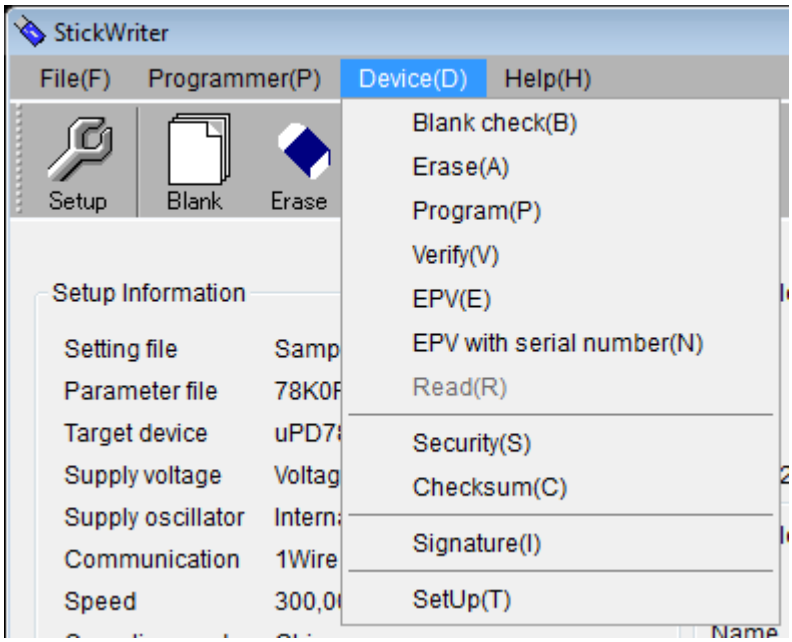


Fig 32

4.5.1 Blank Check

This performs a blank check for the target device connected to StickWriter. If the flash memory in the target device has been erased, the blank check will finish successfully. If the flash memory has not been erased, an error message will be displayed.

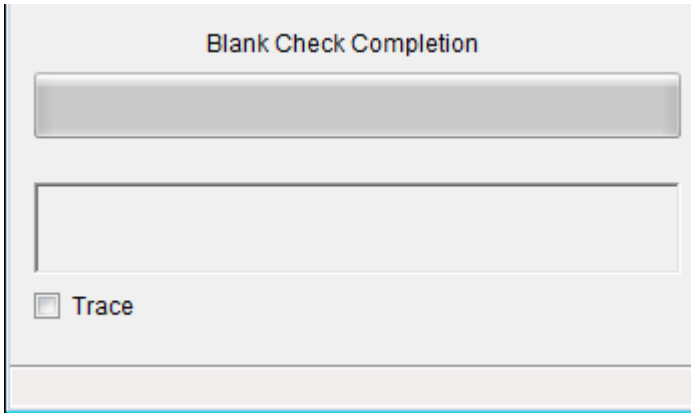


Fig 33

The status displayed when the blank check finishes successfully (above figure).

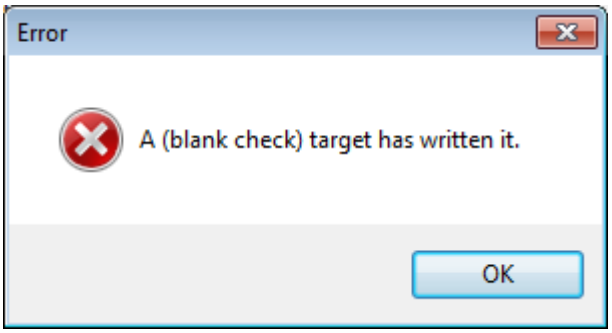


Fig 34

The error message is displayed if data has been written to the target device (above figure).

4.5.2 Erase

This erases the flash memory of the target device connected to StickWriter. If “Blank check before Erase” is checked in the “Command options” of the "Setup" screen, a blank check is performed before erasing. If the flash memory is blank, "Erase" will not be performed.

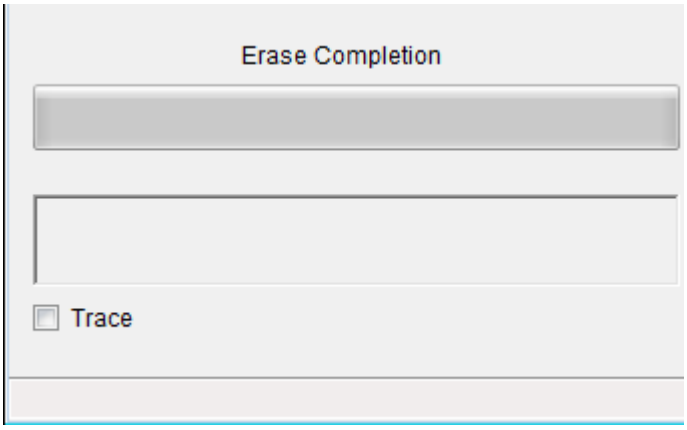


Fig 35

The status displayed when "Erase" finishes successfully (above figure).

4.5.3 Program

The HEX file downloaded to the StickWriter is sent to the connected target device and is written to the flash memory in the target device. While writing, the progress status is displayed in the progress status display section with the programmer operations.
If “Read verify after Program” is enabled in the “Command option” of the "Setup" screen, “Read verify” will be performed after writing to the memory is completed. If it is not checked, “Internal verify” will be performed, but this is "internal verify" is only applicable to 78K0S, 78K0, 78K0R, and V850.
If “Security flag set after Program” is enabled, a security flag is written after the writing is completed.
If "Checksum after program" is enabled, checksum is compared after the writing is completed.
If "Lock bit set after Program" is enabled, a lock bit is set after the writing is completed.

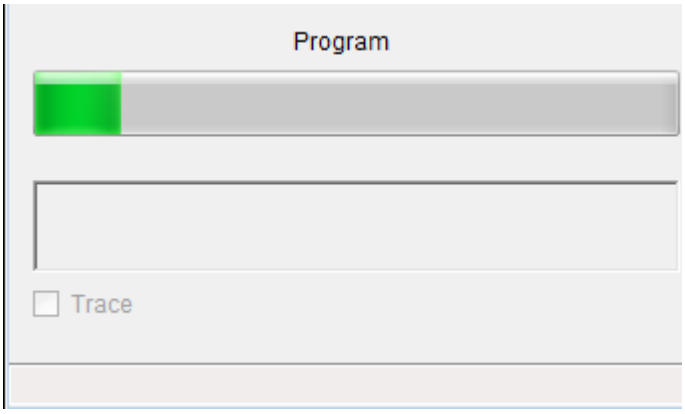


Fig 36

The writing progress status and Progress bar are displayed (above figure).

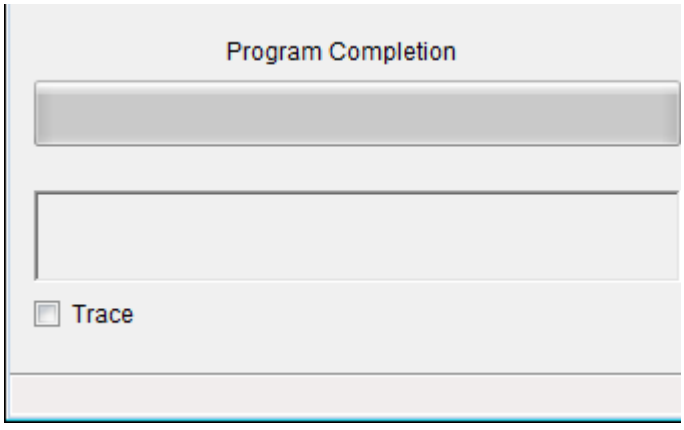


Fig 37

The status displayed when the program finishes successfully (above figure).

4.5.4 Verify

This verifies the data written in the flash memory of the target device connected to the StickWriter and the data written in the flash memory in the StickWriter. While verifying, the progress status is displayed in the progress status display section with the programmer operations.

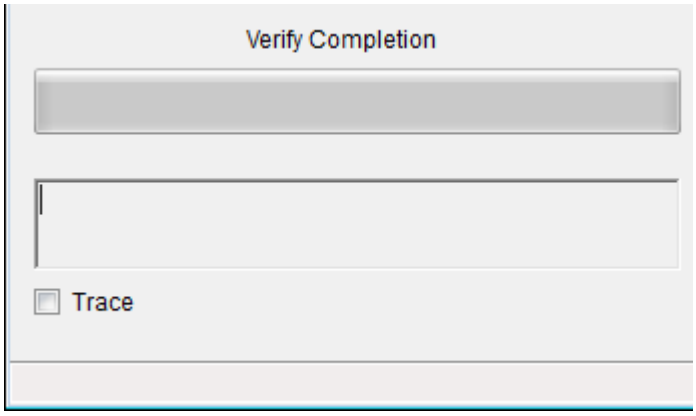


Fig 38

The status displayed when "Verify" finishes successfully (above figure).

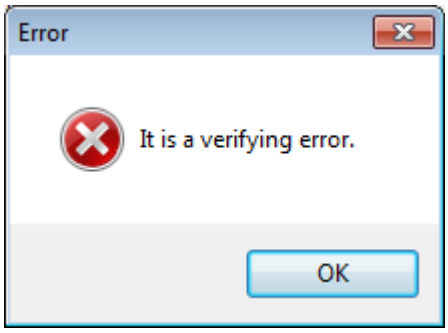


Fig 39

The message displayed if "Verify" fails (above figure).

4.5.5 EPV

This performs the "Erase" command, followed by the "Program" command for the target device connected to StickWriter. During EPV, the progress status is displayed in the progress status display section with programmer operations. The options set in the "Command options" of the "Setup" screen are also effective.
If "Read verify after Program" is enabled, "Read verify" will be performed after writing to the memory is completed. If it is not checked, "Internal verify" will be performed, but this is "internal verify" is only applicable to 78K0S, 78K0, 78K0R, and V850.
If "Security flag set after Program" is enabled, a security flag is written after the writing is completed.
If "Checksum after program" is enabled, checksum is compared after the writing is completed.
If "Lock bit set after Program" is enabled, a lock bit is set after the writing is completed.
If it is R8C series, "Verify" is always applied.

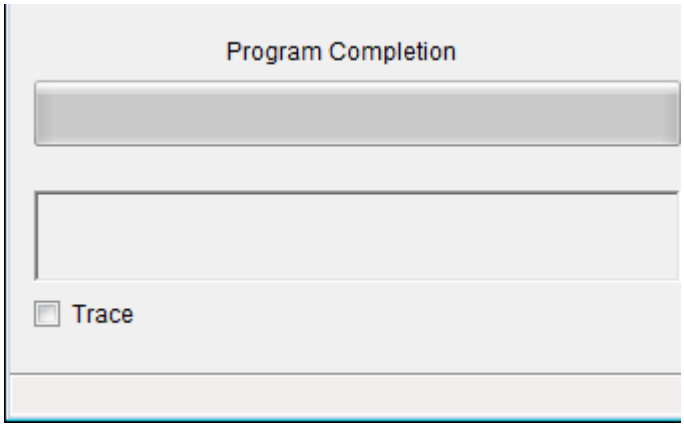


Fig 40

The status displayed when EPV finishes successfully (above figure).

4.5.6 EPV with Serial Number.

This performs the same as the "EPV" command; however, each time "EPV" button is clicked, data with the specified address with the specified size will be changed to the data with the specified algorithm.

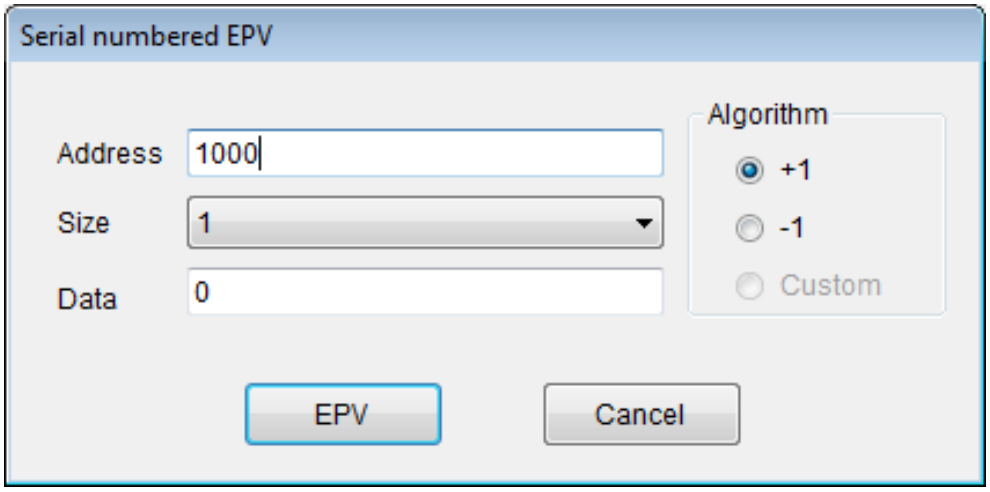


Fig 41

[Address]
The address where the changed data will be written. The address of user boot flash cannot be specified.
[Size]
The size of data: 1, 2 or 4 Byte(s) can be specified.
[Data]
The data to be written. Enter an initial value.
[Algorithm/+1]
When the "EPV" button is clicked, the data increases by one.
[Algorithm/-1]
When the "EPV" button is clicked, the data decreases by one.
[EPV] button
The EPV process is performed.

4.5.7 Read

This reads the contents of the flash memory in the target device connected to StickWriter. This can be performed only to those devices support a read command.

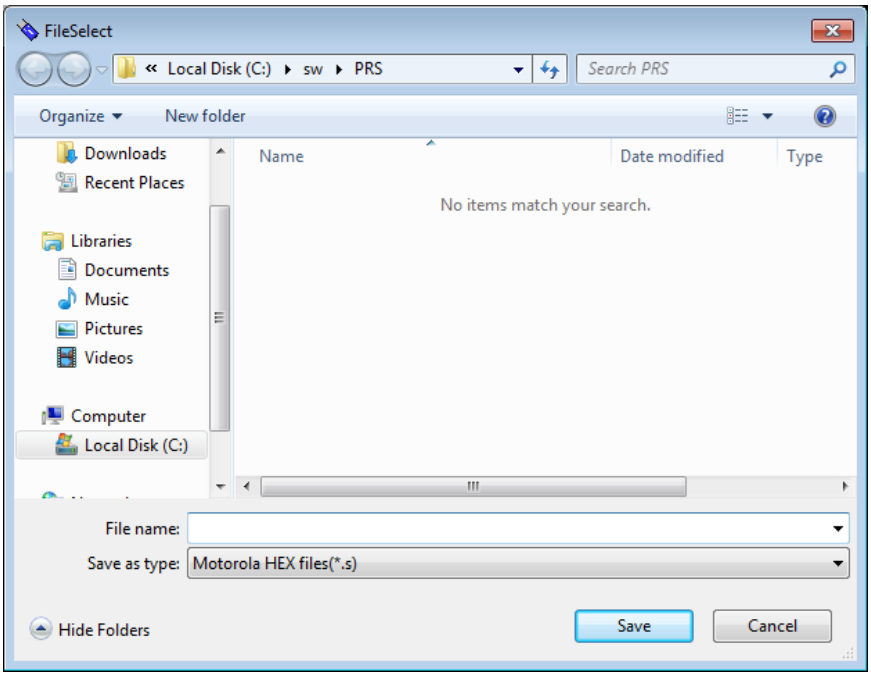


Fig 42

Enter a file name and click "Save" to start reading the flash memory. The save file format is only Motorola S.

4.5.8 Security

This writes a security flag or a lock bit set to the target device connected to StickWriter.

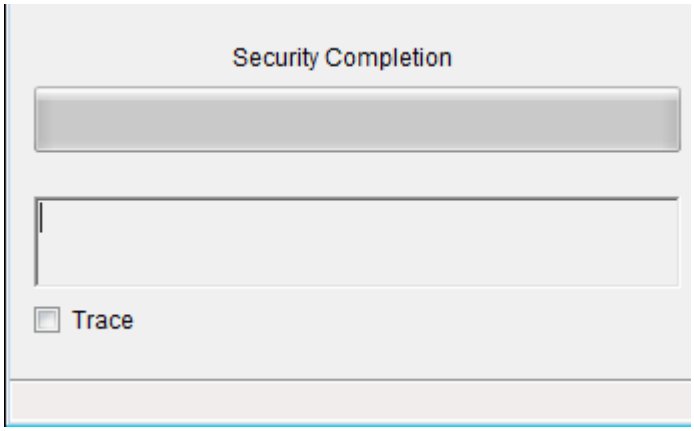


Fig 43

The status displayed when "Security" finishes successfully (above figure).

4.5.9 Checksum

This reads and displays the checksum value of the target device connected to StickWriter. It does not compare the value to the data written in the flash memory of StickWriter.

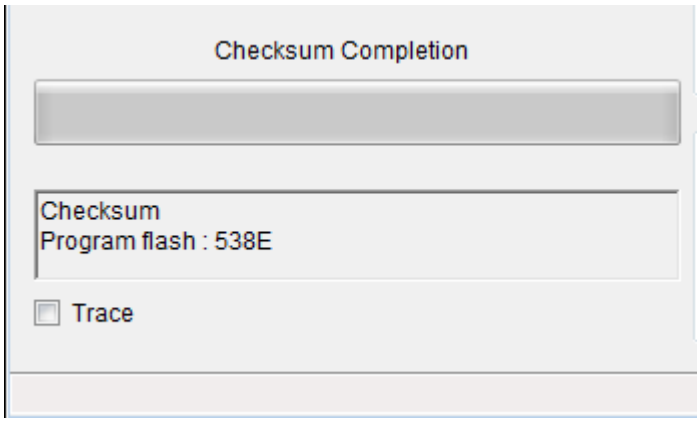


Fig 44

The status displayed when "Checksum" finishes successfully (above figure).

4.5.10 Signature

This compares the signature information between the target device connected with StickWriter and the device specified by the setup.
(It does not display the signature information itself.)

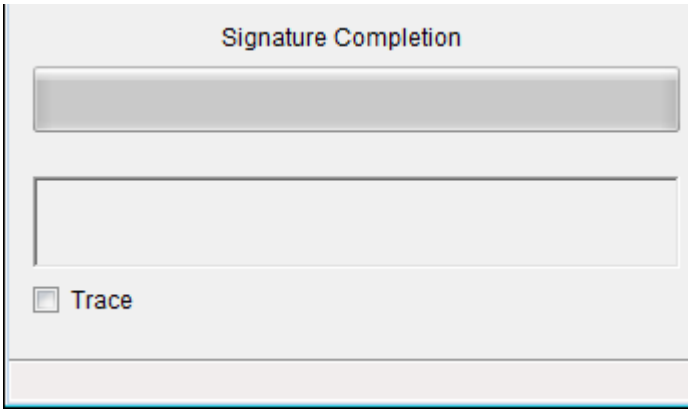


Fig 45

The status displayed when "Signature" finishes successfully (above figure).

4.5.11 Setup

Users can set the system settings for user environment and command option settings. The setting items can be different by the target devices. For more details, please refer to "Chapter 5 Settings by Device Series". The settings will be saved in the built-in memory in StickWriter as a setting file.

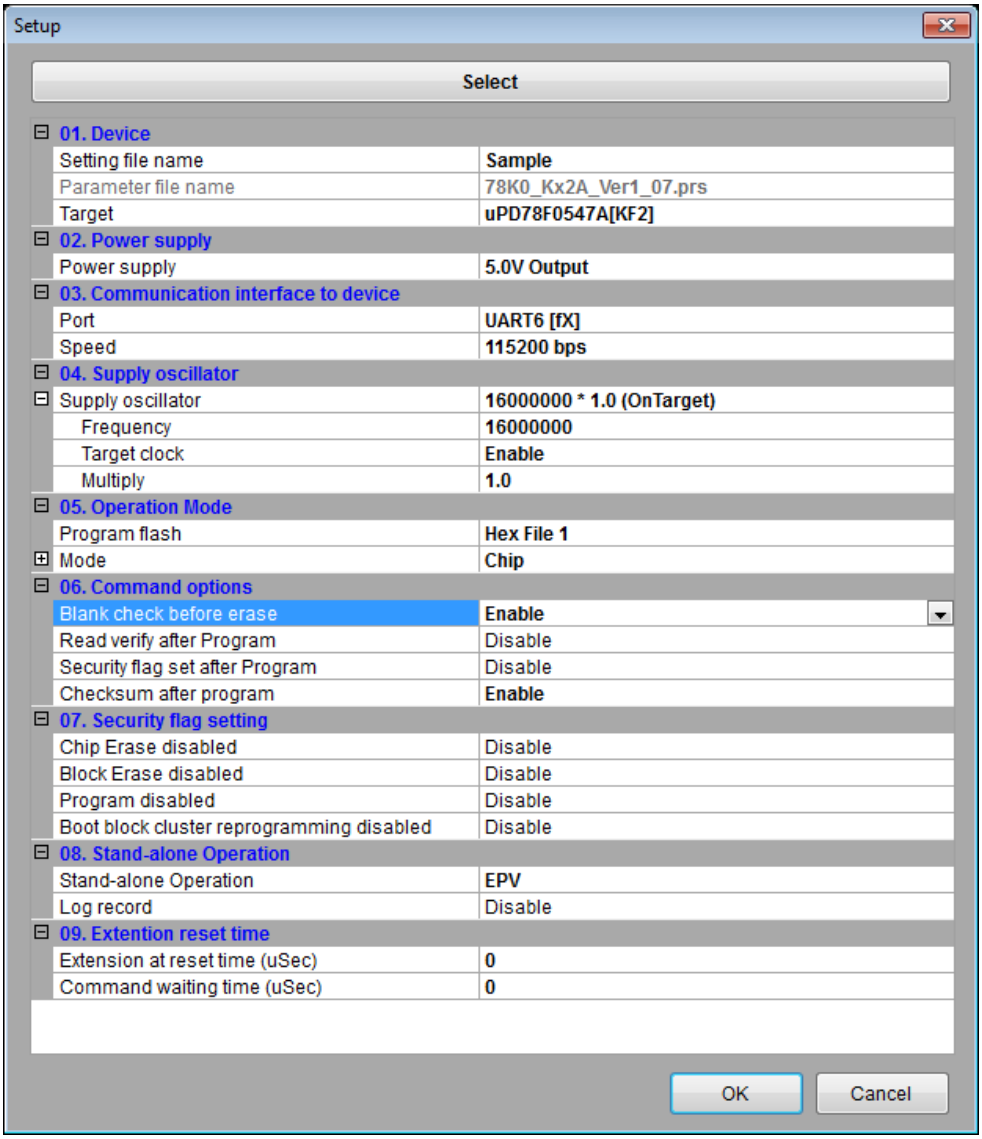


Fig 46

Click "OK" button to save the settings with the specified setting file name. (It registers as the default setting file.)
Click "Select" button to display the setting file management file. The setting file name and parameter file name for the settings will be displayed at the "Setting File Name" and "Parameter File Name" in the "Setting file management file" screen.

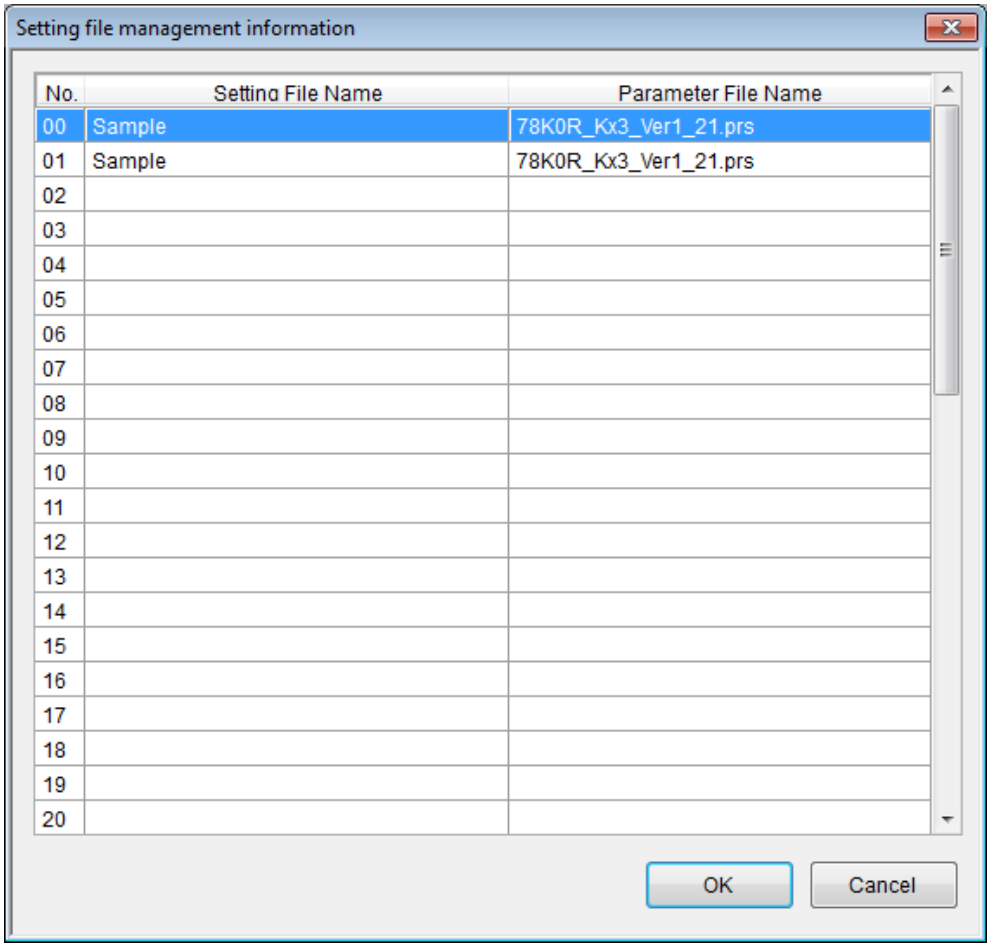


Fig 47

You can register or select one of 00 to 49 setting file information.
Double-click a setting file information or click setting file information and then click "OK" button.
If an existing number is selected, it will return to the Setup screen.
If a new number is selected, it displays the screen like Fig 48.

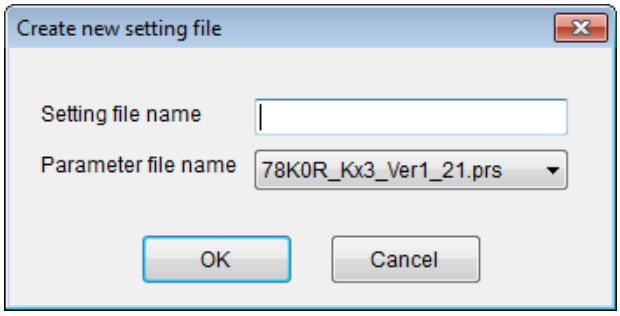


Fig 48

Enter a file name and select a parameter file name for the target device, and then click "OK" button.

4.6 "Help" Menu

Clicking the "Help" menu displays the following pull down menu.

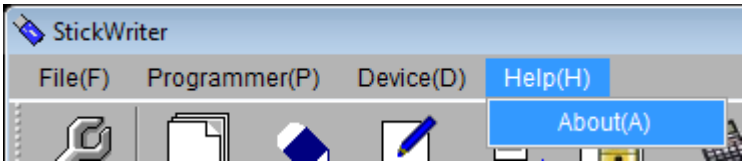


Fig 49

4.6.1 About

This opens the window as shown below.

Fig 50

Click "OK" to exit the window.

F/W Version: Firmware version
GUI Version: GUI program version
Number of licenses: Possible registration numbers of device parameters
Number of registration: Number of registered device parameters
Serial No: 19-digit serial number (you can select and press Ctrl+C to copy)

Chapter 5 Settings by Device Series

5.1 78K0S/Kx1+ Series

5.1.1 Setup Screen

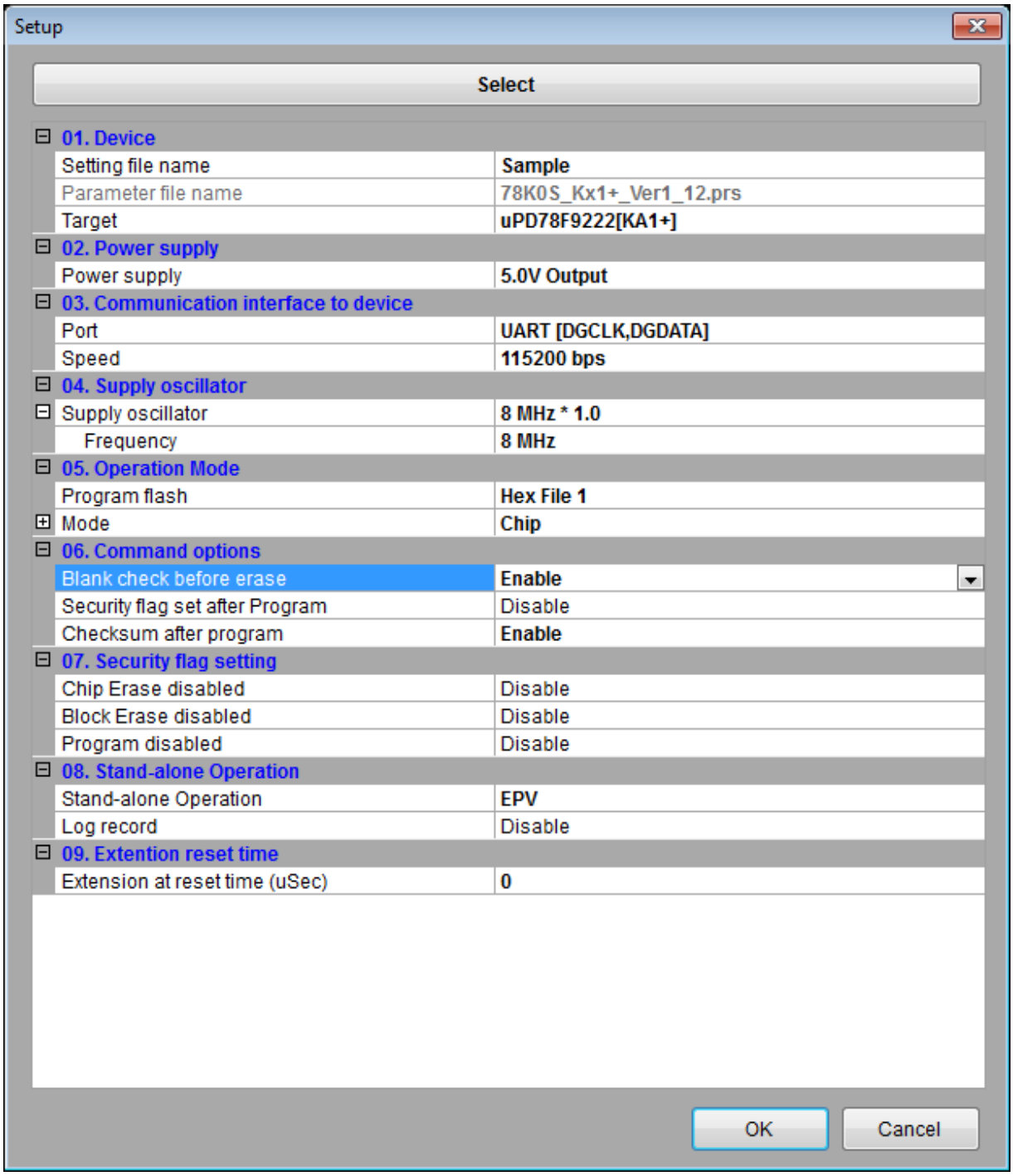


Fig 51

(1) Device

[Setting file name]

The information file name saved in StickWriter. You can change the file name here as well.

[Parameter file name]

The parameter file name with the settings such as memory size of the device, communication timing, and so on.

[Target]

The device used with this setting file. You can select a device.

(2) Power supply

Setting the power supply of the target device.

Target voltage: No power supplied from StickWriter. It uses the power from the target board.

3.3V Output: 3.3V output from StickWriter

5.0V Output: 5.0V output from StickWriter

(3) Communication interface to device

Displaying the communication method between the target device and StickWriter.

[Port]

UART [DGCLK,DGDATA] is only available.

[Speed]

Indicating the communication speed. 115200 bps for the frequency is 8MHz, and 86400 bps for 6MHz.

(4) Supply oscillator

Specifying the output frequency from DGCLK pin when writing.

Select 8MHz or 6MHz.

(5) Operation Mode

[Program flash]

Specifying the program HEX file number for writing.

[Mode]

Displaying the writing mode. Click beside the "Mode" to change it.

Area: **Chip** and **Block** are available.

- Chip: Operation (Write, Erase, etc.) will affect to all flash memory in device.
- Block Operation (Write, Erase, etc.) will affect to the block between specific "Start" and "End" address.

Start: Start address of the block for Block mode writing. It is always 0 (fixed).

End: End address of the block for Block mode writing.

(6) Command options

Setting the options for a target device command.

[Blank check before Erase] "Blank" command is performed before "Erase" command is performed. If the flash memory is blank, "Erase" will not be performed.

[Security flag set after Program] The security flag specified in "Security Setting" will be written after the writing by "Program" command is completed.

[Checksum after program] checksum from the target device is retrieved and

compared by "Checksum" command after the writing by "Program" command is completed. If the value is not matched, it returns an error.

(7) Security flag setting

Setting the options for security flag.

[Chip Erase disabled] If it sets to "Enable", it cannot erase flash memory.

Note: If this is enabled to a target device, it cannot write and erase anything on the memory.

[Block Erase disabled] If it sets to "Enable", it cannot erase with a block area of flash memory.

[Program disabled] If it sets to "Enable", it cannot write on the memory.

This can be canceled when you perform "Erase" command with "Chip" mode.

(8) Stand-alone Operation

Specifying performing command when it is a stand-alone operation without PC connected.

When you perform a stand-alone operation, make sure that you select "Target voltage" for the "Power supply" setting.

[Stand-alone Operation]

EPV: Performing "EPV" command.

Erase Only: Performing "Erase" command.

Blank Check Only: Performing "Blank" command.

No operation: Performing no command.

[Log record]

Enable: Recording the number of devices written, the number of failed devices and error numbers for the failure (the last 32 histories) during stand-alone operation in the EEPROM built into StickWriter. The record details can be confirmed in the "Logging" of the "Device" menu.

Disable: No log will be recorded.

(9) Extension reset time

[Extension at reset time (uSec)]

Specifying the extending reset time. (Maximum 4 seconds)

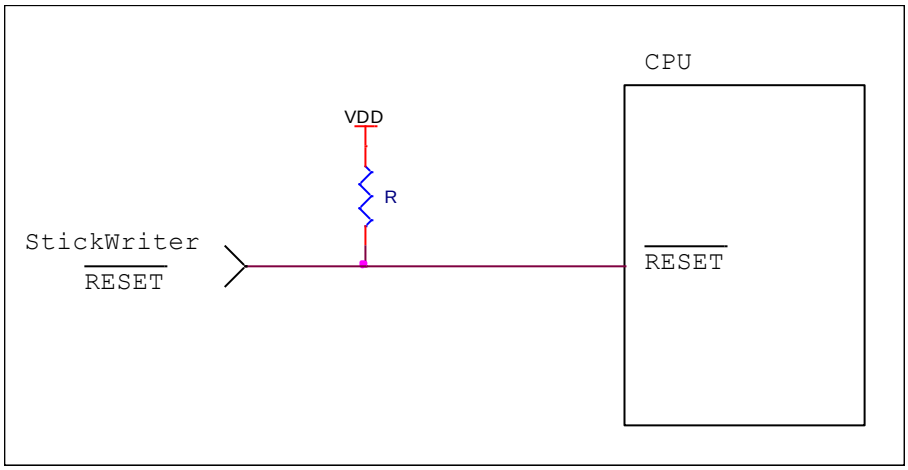
5.1.2 Target I/F

Check the user's manual of the target device as well.

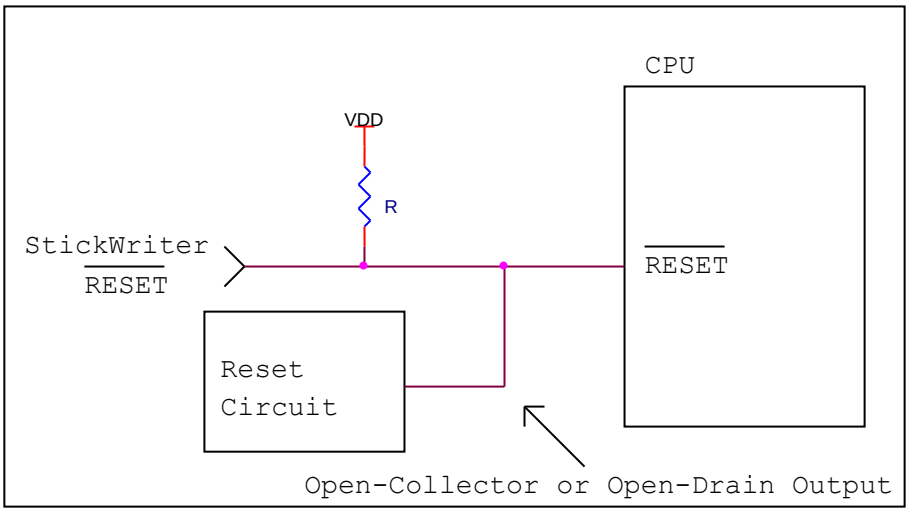
(1) RESET

When StickWriter resets the target CPU, it outputs “Low”.
When StickWriter cancels the reset, it changes to “Hi-Z”. Please connect pull-up resistor

When there is no external reset circuit



When there is an external reset circuit



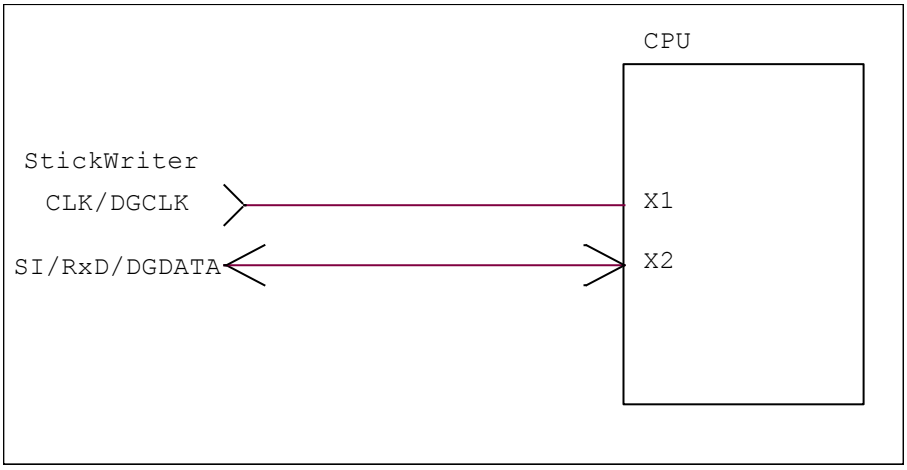
Set the external reset circuit as Open-Collector or Open-Drain output. Set the Wired OR Connection with the reset signal from StickWriter. Make sure that reset will not occur while writing to the target CPU from StickWriter. Be cautious when using an external watch-dog timer.

Note: 78K0S can use RESET Circuit as a port by option byte settings. When it is used as a port, it cannot use "Flash Memory Programming Mode".

(2) X1, X2

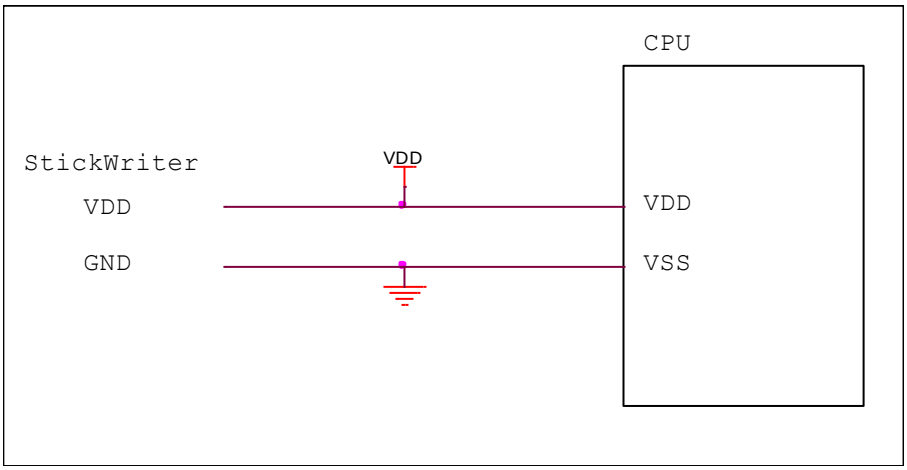
X1, X2 terminals are used as serial interfaces. When external devices are connected to those terminals, be cautious not to inhibit communication. Keep in mind that external devices may malfunction due to communication data with the StickWriter.

CLK/DGCLK	Connect to X1
SI/RxD/DGDATA	Connect to X2

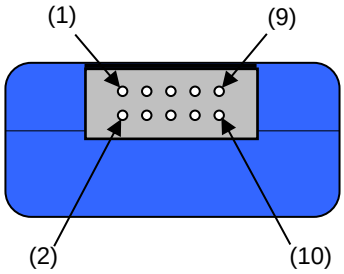


(3) VDD, GND

Connect the power supply of the target device.



5.1.3 Target I/F Connector



Pin No	StickWriter Signal Name	Connect to Target Device
(1)	GND	VSS
(2)	$\overline{RESET}$	$\overline{RESET}$
(3)	SI/RxD/DGDATA	X2
(4)	VDD	VDD
(5)	SO/TxD	
(6)	FLMD0	
(7)	SCK	
(8)	H/S	
(9)	CLK/DGCLK	X1
(10)	Reserved	

StickWriter Side Connector Type No:

- DF11-10DP-2DS (Hirose Electronics)

Appropriate Target Side Connectors:

- SMT Type DF11CZ-10DS-2V
- DIP Type DF11-10DS-2DSA
- Insulation Displacement Socket DF11-10DS-2R26
- Clamping Socket DF11-10DS-2C

5.2 78K0 Series

5.2.1 Setup Screen

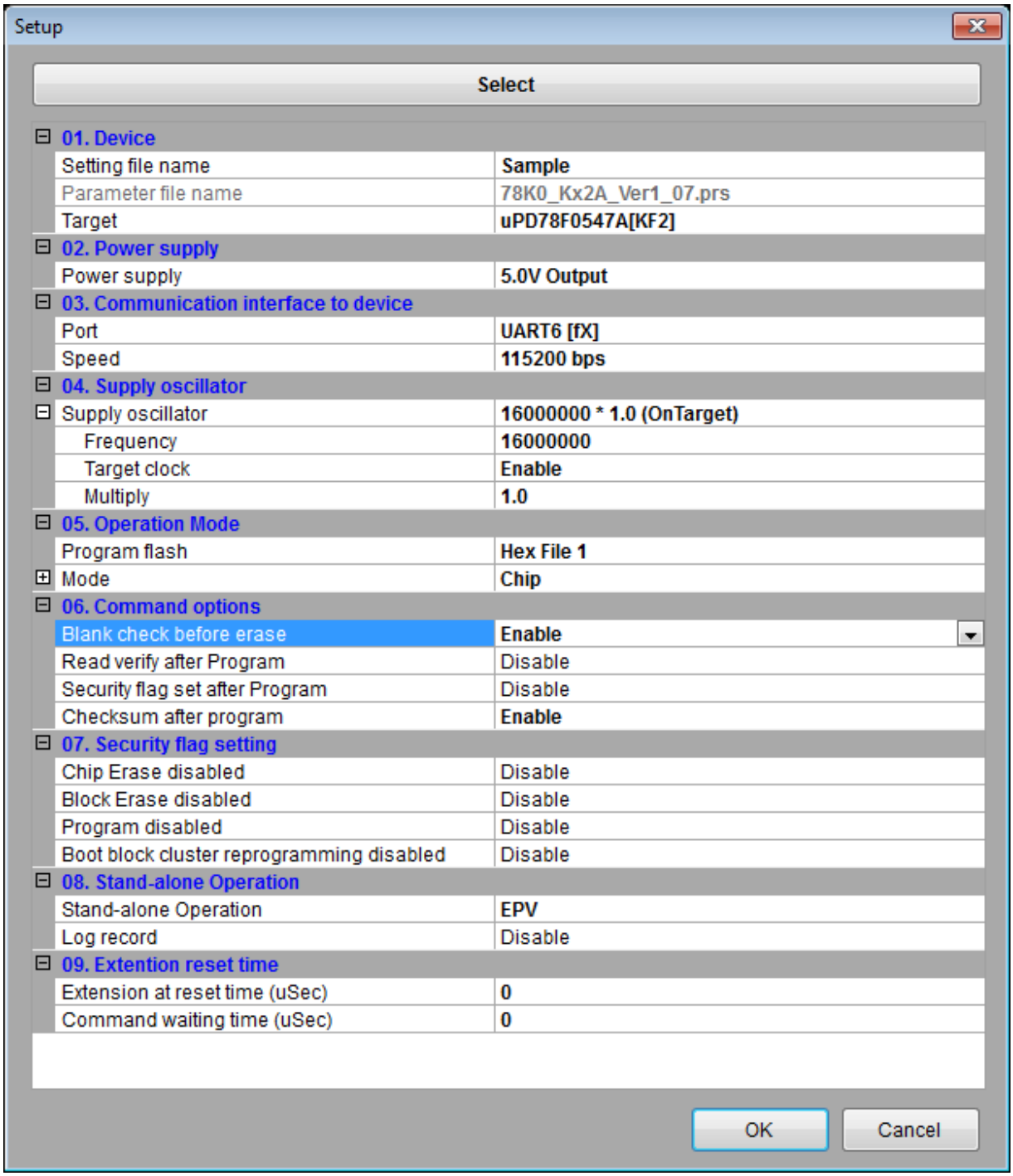


Fig 52

(1) Device

[Setting file name]

The information file name saved in StickWriter. You can change the file name here as well.

[Parameter file name]

The parameter file name with the settings such as memory size of the device, communication timing, and so on.

[Target]

The device used with this setting file. You can select a device.

(2) Power supply

Setting the power supply of the target device.

Target voltage: No power supplied from StickWriter. It uses the power from the target board.

3.3V Output: 3.3V output from StickWriter

5.0V Output: 5.0V output from StickWriter

(3) Communication interface to device

Displaying the communication method between the target device and StickWriter.

[Port]

Indicating the communication method with target device. You can select UART, CSI, etc. For more detail, please refer to the user's manual for the device.

[Speed]

Indicating the communication speed.

(4) Supply oscillator

Specifying the operation frequency for the target device. You can use the device built-in oscillator depending on the writing communication method. If this is the case, this item will be blank.

[Frequency (Hz)]

setting the frequency supplying to the target device.

[Target clock]

Set to "Enable" when the clock is supplied on board and "Disable" when the clock is output the "Frequency" setting from StickWriter.

[Multiply]

Set the multiplying rate if the target device supports frequency multiplying.

(5) Operation Mode

[Program flash]

Specifying the program HEX file number for writing.

[Mode]

Displaying the writing mode. Click beside the "Mode" to change it.

Area: **Chip** and **Block** are available.

- Chip: Operation (Write, Erase, etc.) will affect to all flash memory in device.
- Block Operation (Write, Erase, etc.) will affect to the block between specific "Start" and "End" address.

Start: Start address of the block for Block mode writing. It is always 0 (fixed).

End: End address of the block for Block mode writing.

(6) Command options

Setting the options for a target device command.

[Blank check before Erase] "Blank" command is performed before "Erase" command is performed. If the flash memory is blank, "Erase" will not be performed.

[Read verify after Program] "Verify" command is performed after "Program" command id completed.

[Security flag set after Program] The security flag specified in "Security Setting" will be written after the writing by "Program" command is completed.

[Checksum after program] checksum from the target device is retrieved and compared by "Checksum" command after the writing by "Program" command is completed. If the value is not matched, it returns an error.

(7) Security flag setting

Setting the options for security flag.

[Chip Erase disabled] If it sets to "Enable", it cannot erase flash memory.

Note: If this is enabled to a target device, it cannot write and erase anything on the memory.

[Block Erase disabled] If it sets to "Enable", it cannot erase with a block area of flash memory.

[Program disabled] If it sets to "Enable", it cannot write on the memory.

This can be canceled when you perform "Erase" command with "Chip" mode.

[Boot block cluster reprogramming disabled] If it sets to "Enable", it cannot write on the boot block.

Note: If this is enabled to a target device, it cannot write anything on the boot block.

(8) Stand-alone Operation

Specifying performing command when it is a stand-alone operation without PC connected.

When you perform a stand-alone operation, make sure that you select "Target voltage" for the "Power supply" setting.

[Stand-alone Operation]

EPV: Performing "EPV" command.

Verify Only: Performing "Verify" command.

Erase Only: Performing "Erase" command.

Blank Check Only: Performing "Blank" command.

No operation: Performing no command.

[Log record]

Enable: Recording the number of devices written, the number of failed devices and error numbers for the failure (the last 32 histories) during stand-alone operation in the EEPROM built into StickWriter. The record details can be confirmed in the "Logging" of the "Device" menu.

Disable: No log will be recorded.

(9) Extension reset time

If target device is reset with reset IC, set the time that align to the reset IC.

[Extension at reset time (uSec)]

Specifying the extending reset time. (Maximum 4 seconds)

[Command waiting time (uSec)]

Specifying the extended time before sending commands after resetting (Maximum 4 seconds). Basically, you do not need to set this.

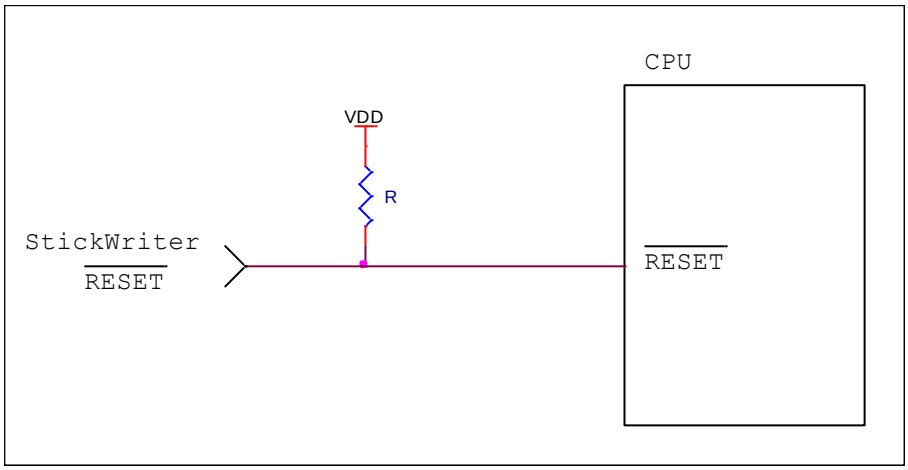
5.2.2 Target I/F

Check the user's manual of the target device as well.

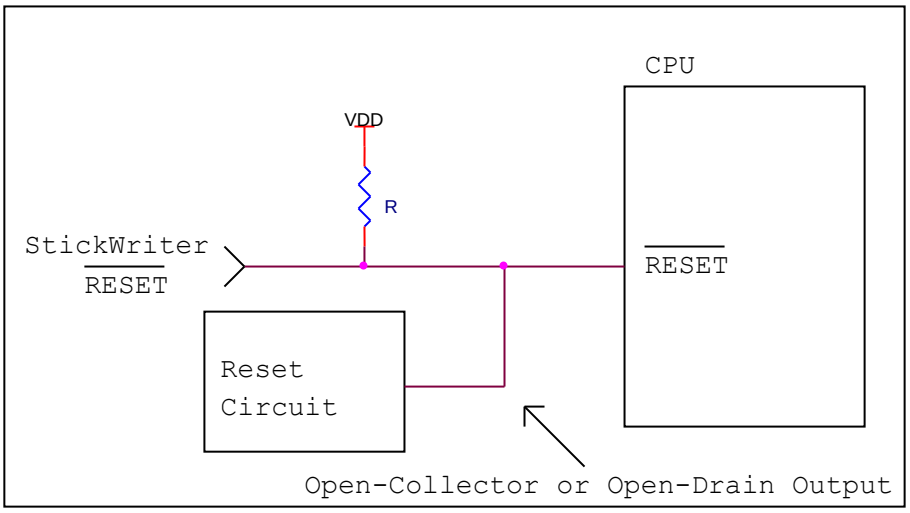
(1) RESET

When StickWriter resets the target CPU, it outputs “Low”.
When StickWriter cancels the reset, it changes to “Hi-Z”. Please connect pull-up resistor

When there is no external reset circuit



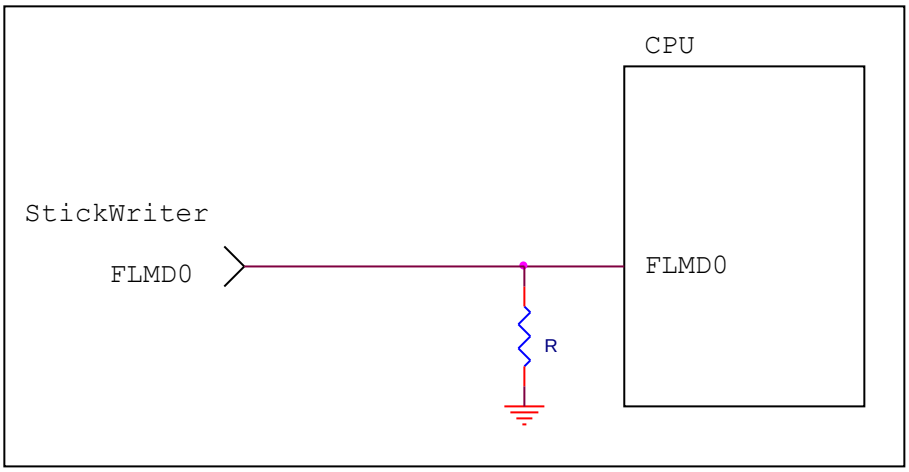
When there is an external reset circuit



Set the external reset circuit as Open-Collector or Open-Drain output. Set the Wired OR Connection with the reset signal from StickWriter. Make sure that reset will not occur while writing to the target CPU from StickWriter. Be cautious when using an external watch-dog timer.

(2) FLMD0

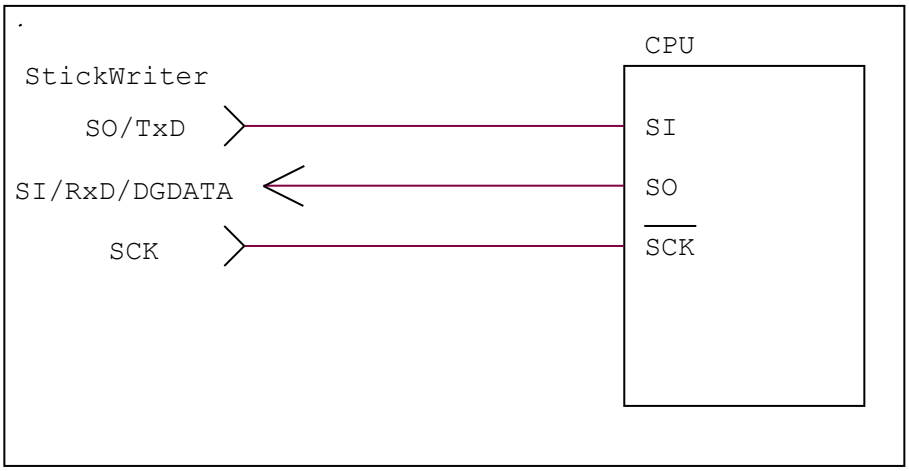
A pulse is output from StickWriter to determine the communication method.
Perform the “pull-down” process on the target board.



(3) CSI

Connect when you use the CSI terminal as serial interface.
When external devices are connected to those terminals, be cautious not to inhibit communication. Keep in mind that external devices may malfunction due to communication data with the StickWriter.

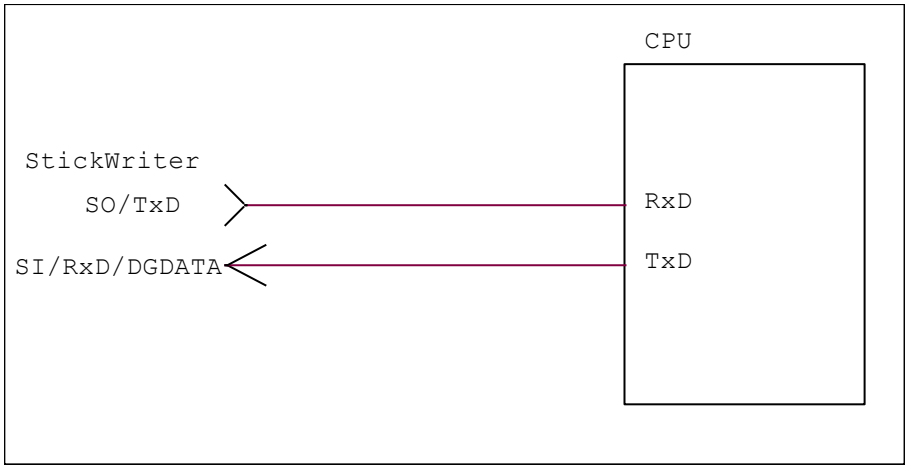
SO/TxD	Connect to SI
SI/RxD/DGDATA	Connect to SO
SCK	Connect to SCK



(4) UART

Connect when you use the UART terminal as serial interface.
When external devices are connected to those terminals, be cautious not to inhibit communication. Keep in mind that external devices may malfunction due to communication data with the StickWriter.

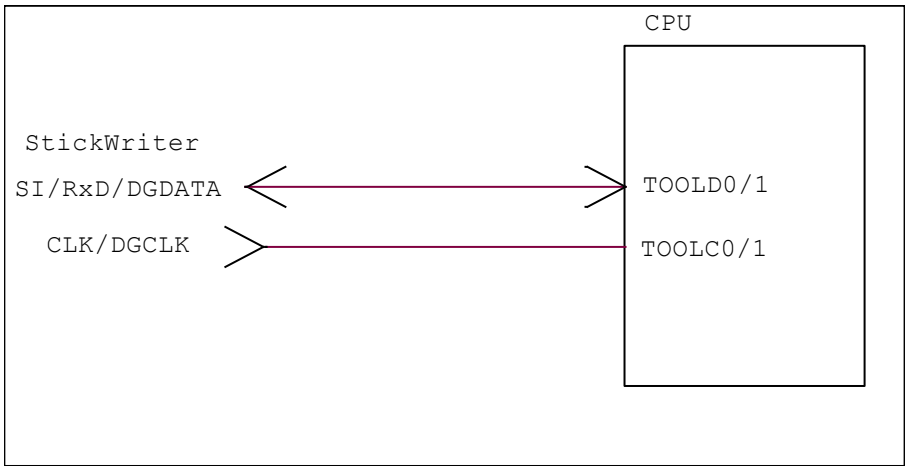
SO/TxD	Connect to RxD
SI/RxD/DGDATA	Connect to TxD



(5) TOOLD0/1, TOOLC0/1

Connect when you use the TOOLD0/1, TOOLC0/1 terminal as serial interface.
When external devices are connected to those terminals, be cautious not to inhibit communication. Keep in mind that external devices may malfunction due to communication data with the StickWriter.
Use TOOLD0 together with TOOLC0. In the same way, use TOOLD1 together with TOOLC1.

SI/RxD/DGDATA	Connect to TOOLD0 or TOOLD1
CLK/DGCLK	Connect to TOOLC0 or TOOLD1

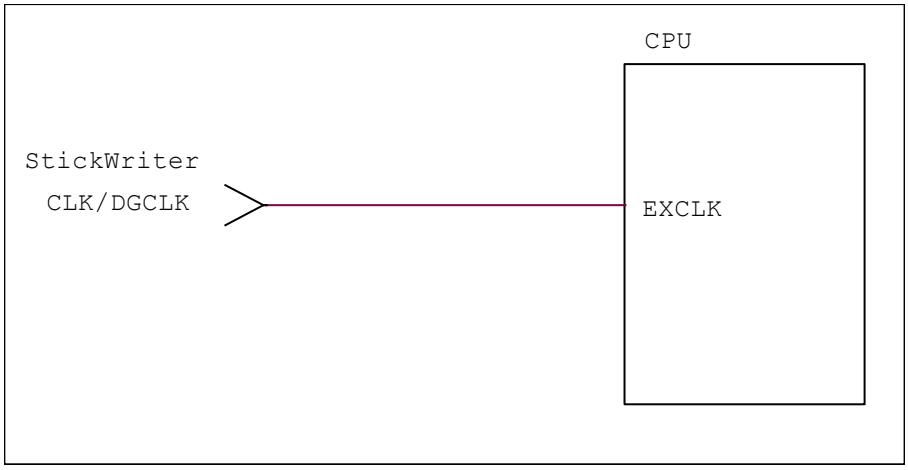


(6) EXCLK

It can output the clock from StickWriter. You need to connect when all of the following conditions apply.

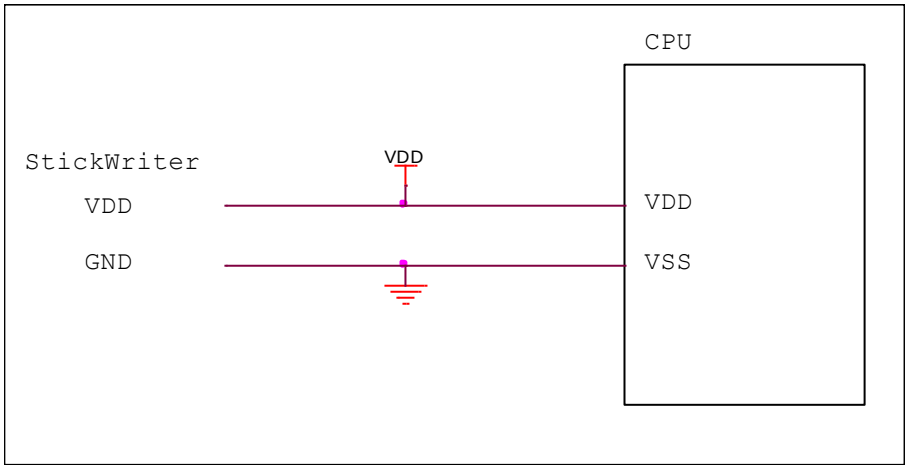
- The serial interface used for writing is UART
- High speed built-in oscillator clock is not available
- External main system clock is not connected to the target board.

CLK/DGCLK Connect to EXCLK

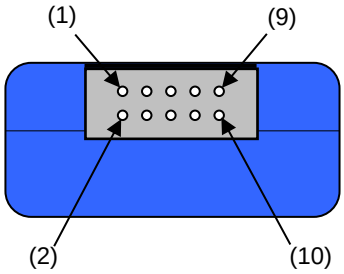


(7) VDD, GND

Connect the power supply of the target device.



5.2.3 Target I/F Connector



Pin No	StickWriter Signal Name	Connect to Target Device
(1)	GND	VSS
(2)	$\overline{RESET}$	$\overline{RESET}$
(3)	SI/RxD/DGDATA	SO or TxD
(4)	VDD	VDD
(5)	SO/TxD	SI or RxD
(6)	FLMD0	FLMD0
(7)	SCK	SCK
(8)	H/S	
(9)	CLK/DGCLK	X1
(10)	Reserved	

StickWriter Side Connector Type No:

- DF11-10DP-2DS (Hirose Electronics)

Appropriate Target Side Connectors:

- SMT Type DF11CZ-10DS-2V
- DIP Type DF11-10DS-2DSA
- Insulation Displacement Socket DF11-10DS-2R26
- Clamping Socket DF11-10DS-2C

5.3 78K0R Series

5.3.1 Setup Screen

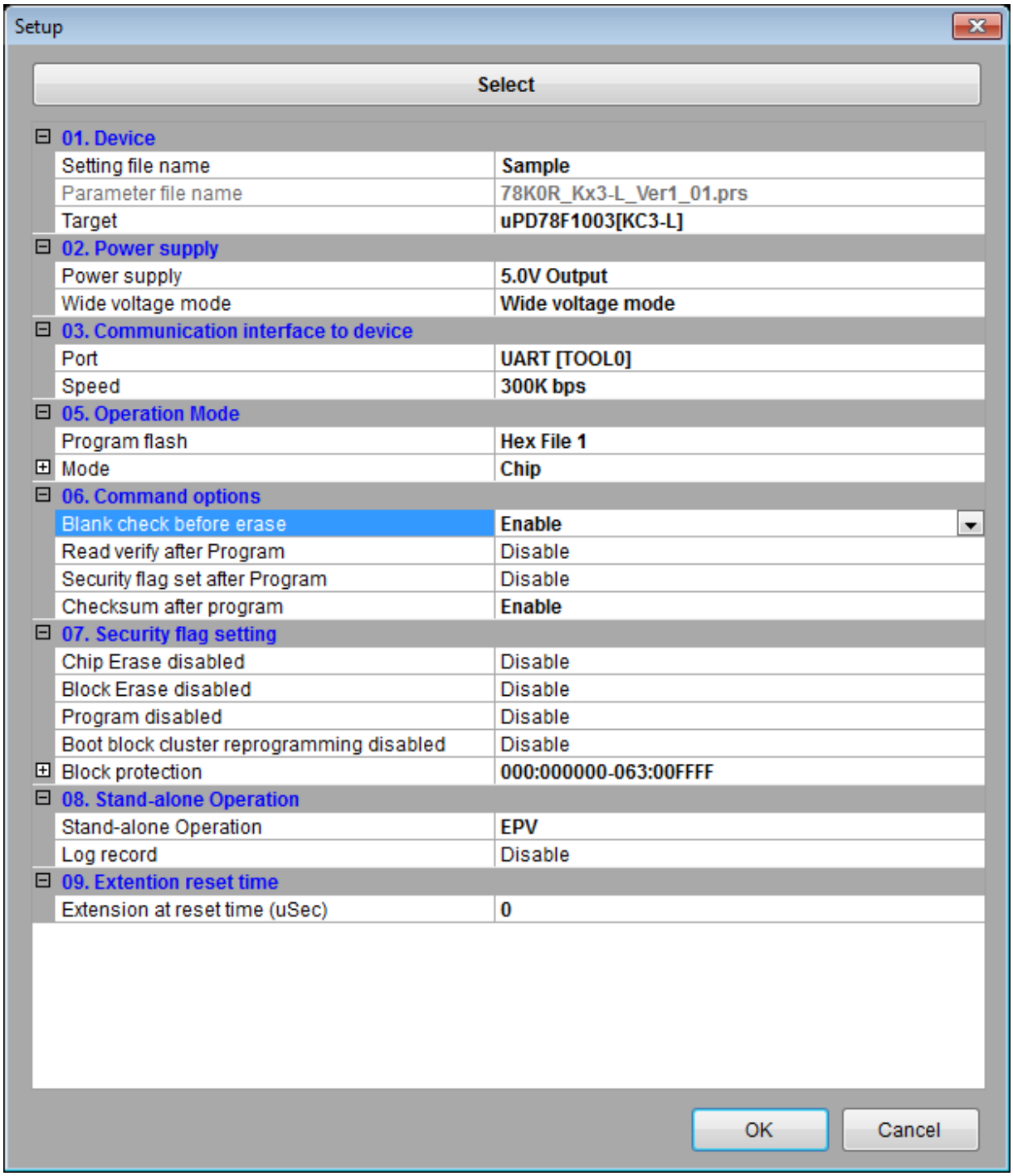


Fig 53

(1) Device

[Setting file name]

The information file name saved in StickWriter. You can change the file name here as well.

[Parameter file name]

The parameter file name with the settings such as memory size of the device, communication timing, and so on.

[Target]

The device used with this setting file. You can select a device.

(2) Power supply

[Power supply]

Setting the power supply of the target device.

Target voltage: No power supplied from StickWriter. It uses the power from the target board.

3.3V Output: 3.3V output from StickWriter

5.0V Output: 5.0V output from StickWriter

[Wide voltage mode]

You can select the wide voltage mode if the device supports flash writing with low voltage. For details, please refer to user's manuals of the device.

Full speed mode: Wring with full speed mode

Wide voltage mode: Writing with wide voltage mode

(3) Communication interface to device

Displaying the communication method between the target device and StickWriter.

[Port]

UART [TOOL0] is only available.

[Speed]

Indicating the communication speed.

(4) Operation Mode

[Program flash]

Specifying the program HEX file number for writing.

[Mode]

Displaying the writing mode. Click ⊞ beside the "Mode" to change it.

Area: **Chip** and **Block** are available.

- Chip: Operation (Write, Erase, etc.) will affect to all flash memory in device.
- Block Operation (Write, Erase, etc.) will affect to the block between specific "Start" and "End" address.

Start: Start address of the block for Block mode writing. It is always 0 (fixed).

End: End address of the block for Block mode writing.

(5) Command options

Setting the options for a target device command.

[Blank check before Erase] "Blank" command is performed before "Erase" command is performed. If the flash memory is blank, "Erase" will not be performed.

[Read verify after Program] "Verify" command is performed after "Program" command id completed.

[Security flag set after Program] The security flag specified in "Security Setting" will be written after the writing by "Program" command is completed.

[Checksum after program] checksum from the target device is retrieved and compared by "Checksum" command after the writing by "Program" command is completed. If the value is not matched, it returns an error.

(6) Security flag setting

Setting the options for security flag.

[Chip Erase disabled] If it sets to "Enable", it cannot erase flash memory.

Note: If this is enabled to a target device, it cannot write and erase anything on the memory.

[Block Erase disabled] If it sets to "Enable", it cannot erase with a block area of flash memory.

[Program disabled] If it sets to "Enable", it cannot write on the memory.

This can be canceled when you perform "Erase" command with "Chip" mode.

[Boot block cluster reprogramming disabled] If it sets to "Enable", it cannot write on the boot block.

Note: If this is enabled to a target device, it cannot write anything on the boot block.

[Block protection] Setting the block function "Flash shield window" when it is self-programming. For details, please refer to the user's manuals of the device. Click ⊞ beside the "Block protection" to change its range.

(7) Stand-alone Operation

Specifying performing command when it is a stand-alone operation without PC connected.

When you perform a stand-alone operation, make sure that you select "Target voltage" for the "Power supply" setting.

[Stand-alone Operation]

EPV: Performing "EPV" command.

Verify Only: Performing "Verify" command.

Erase Only: Performing "Erase" command.

Blank Check Only: Performing "Blank" command.

No operation: Performing no command.

[Log record]

Enable: Recording the number of devices written, the number of failed devices and error numbers for the failure (the last 32 histories) during stand-alone operation in the EEPROM built into StickWriter. The record details can be confirmed in the "Logging" of the "Device" menu.

Disable: No log will be recorded.

(8) Extension reset time

If target device is reset with reset IC, set the time that align to the reset IC.

[Extension at reset time (uSec)]

Specifying the extending reset time. (Maximum 4 seconds)

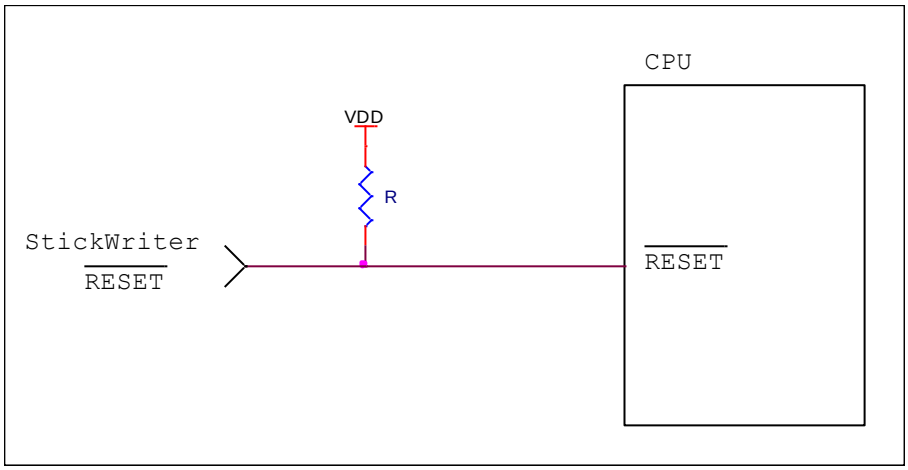
5.3.2 Target I/F

Check the user's manual of the target device as well.

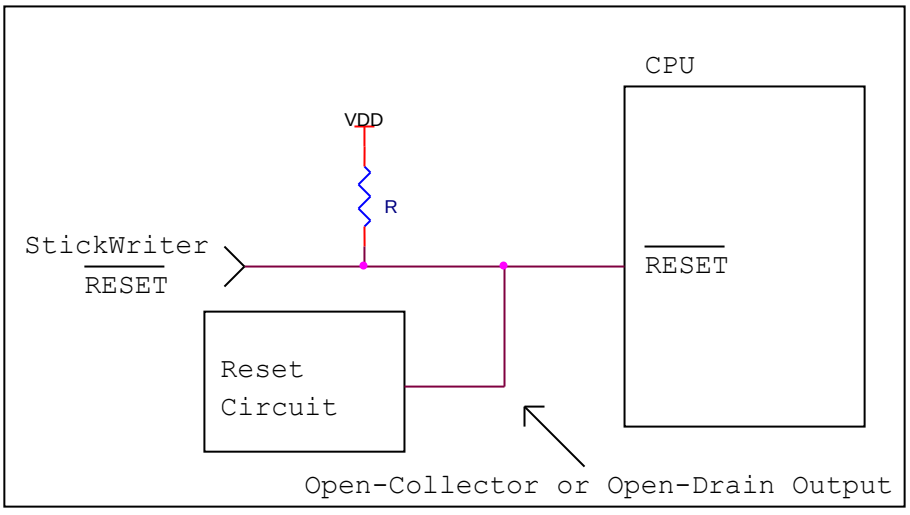
(1) RESET

When StickWriter resets the target CPU, it outputs “Low”.
When StickWriter cancels the reset, it changes to “Hi-Z”. Please connect pull-up resistor

When there is no external reset circuit



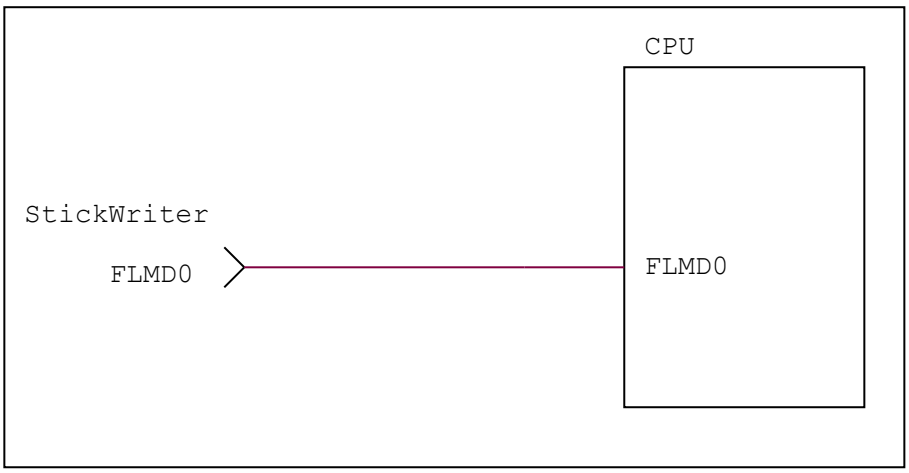
When there is an external reset circuit



Set the external reset circuit as Open-Collector or Open-Drain output. Set the Wired OR Connection with the reset signal from StickWriter. Make sure that reset will not occur while writing to the target CPU from StickWriter. Be cautious when using an external watch-dog timer.

(2) FLMD0

A pulse is output from StickWriter to determine the communication method.

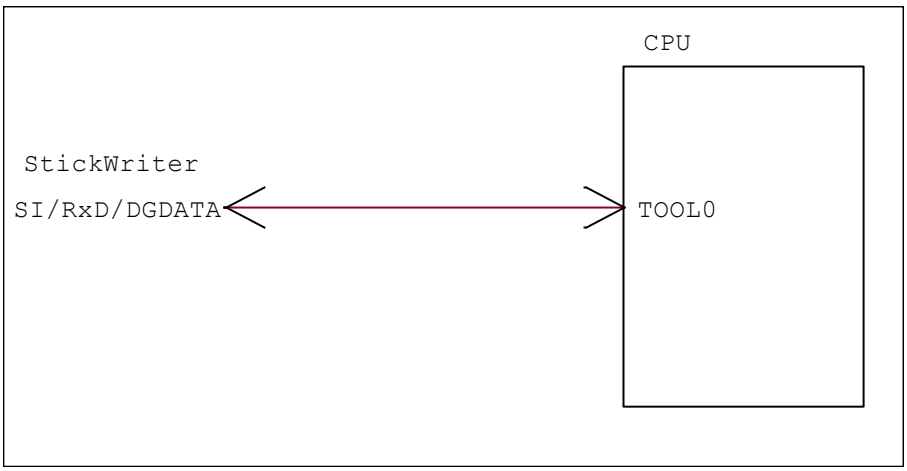


(3) TOOL0

Connect when you use the TOOL0 terminal as serial interface.

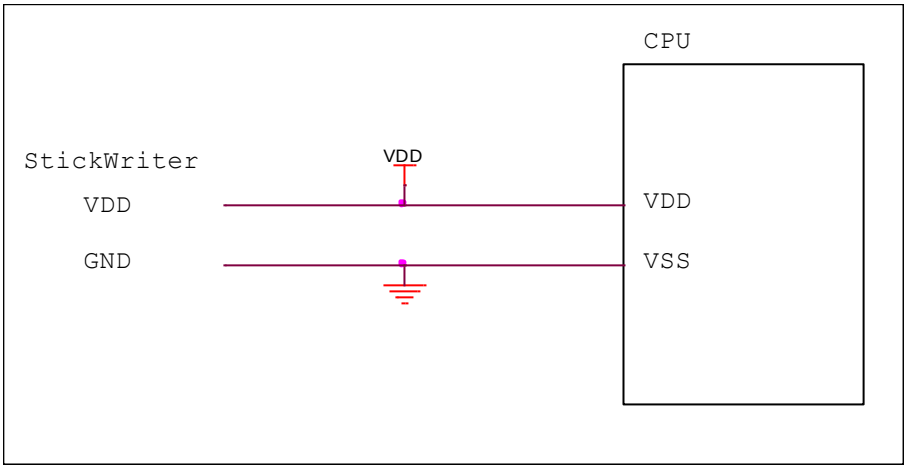
When external devices are connected to those terminals, be cautious not to inhibit communication. Keep in mind that external devices may malfunction due to communication data with the StickWriter.

SI/RxD/DGDATA Connect to TOOL0

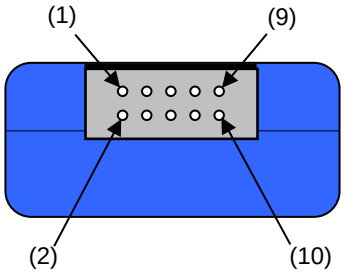


(4) VDD, GND

Connect the power supply of the target device.



5.3.3 Target I/F Connector



Pin No	StickWriter Signal Name	Connect to Target Device
(1)	GND	VSS
(2)	$\overline{RESET}$	$\overline{RESET}$
(3)	SI/RxD/DGDATA	TOOL0
(4)	VDD	VDD
(5)	SO/TxD	
(6)	FLMD0	FLMD0
(7)	SCK	
(8)	H/S	
(9)	CLK/DGCLK	
(10)	Reserved	

StickWriter Side Connector Type No:

- DF11-10DP-2DS (Hirose Electronics)

Appropriate Target Side Connectors:

- SMT Type DF11CZ-10DS-2V
- DIP Type DF11-10DS-2DSA
- Insulation Displacement Socket DF11-10DS-2R26
- Clamping Socket DF11-10DS-2C

5.4 V850E, V850ES Series

5.4.1 Setup Screen

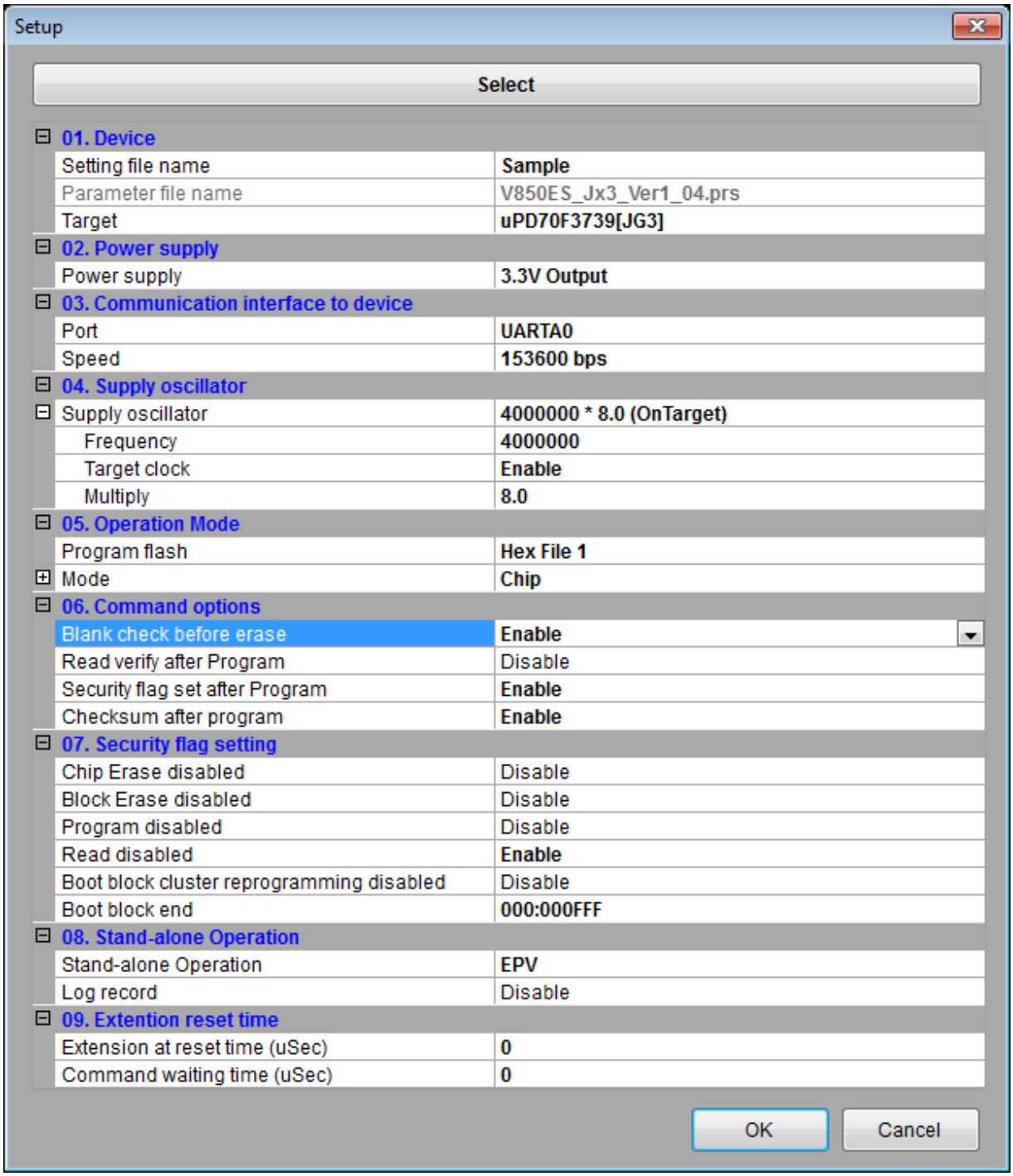


Fig 54

(1) Device

[Setting file name]

The information file name saved in StickWriter. You can change the file name here as well.

[Parameter file name]

The parameter file name with the settings such as memory size of the device, communication timing, and so on.

[Target]

The device used with this setting file. You can select a device.

(2) Power supply

Setting the power supply of the target device.

Target voltage: No power supplied from StickWriter. It uses the power from the target board.

3.3V Output: 3.3V output from StickWriter

5.0V Output: 5.0V output from StickWriter (This is not available if the device does not support 5V)

(3) Communication interface to device

Displaying the communication method between the target device and StickWriter.

[Port]

Indicating the communication method with target device. You can select UART, CSI, etc. For more detail, please refer to the user's manual for the device.

[Speed]

Indicating the communication speed.

(4) Supply oscillator

Specifying the operation frequency for the target device.

[Frequency (Hz)]

setting the frequency supplying to the target device.

[Target clock]

Set to "Enable" when the clock is supplied on board and "Disable" when the clock is output the "Frequency" setting from StickWriter.

[Multiply]

Set the multiplying rate if the target device supports frequency multiplying.

(5) Operation Mode

[Program flash]

Specifying the program HEX file number for writing.

[Mode]

Displaying the writing mode. Click beside the "Mode" to change it.

Area: **Chip** and **Block** are available.

- Chip: Operation (Write, Erase, etc.) will affect to all flash memory in device.
- Block Operation (Write, Erase, etc.) will affect to the block between specific "Start" and "End" address.

Start: Start address of the block for Block mode writing. It is always 0 (fixed).

End: End address of the block for Block mode writing.

(6) Command options

Setting the options for a target device command.

[Blank check before Erase] "Blank" command is performed before "Erase" command is performed. If the flash memory is blank, "Erase" will not be performed.

[Read verify after Program] "Verify" command is performed after "Program" command id completed.

[Security flag set after Program] The security flag specified in "Security Setting" will be written after the writing by "Program" command is completed.

[Checksum after program] checksum from the target device is retrieved and compared by "Checksum" command after the writing by "Program" command is completed. If the value is not matched, it returns an error.

(7) Security flag setting

Setting the options for security flag. If the items are not available for the device, they will not be appeared.

[Chip Erase disabled] If it sets to "Enable", it cannot erase flash memory.

Note: If this is enabled to a target device, it cannot write and erase anything on the memory.

[Block Erase disabled] If it sets to "Enable", it cannot erase with a block area of flash memory.

[Program disabled] If it sets to "Enable", it cannot write on the memory.

This can be canceled when you perform "Erase" command with "Chip" mode.

[Read disabled] If it sets to "Enable", it cannot read the program written by writer.

This can be canceled when you perform "Erase" command with "Chip" mode.

[Reset vector] This change the reset vector to the address specified.

This can be initialized when you perform "Erase" command with "Chip" mode.

[Boot block cluster reprogramming disabled] If it sets to "Enable", it cannot write on the boot block.

Note: If this is enabled to a target device, it cannot write anything on the boot block.

[Boot block end] This specifies the end of not-rewritable boot block area when "Boot block cluster reprogramming disabled" sets to "Enable".

(8) Stand-alone Operation

Specifying performing command when it is a stand-alone operation without PC connected.

When you perform a stand-alone operation, make sure that you select "Target voltage" for the "Power supply" setting.

[Stand-alone Operation]

EPV: Performing "EPV" command.

Verify Only: Performing "Verify" command.

Erase Only: Performing "Erase" command.

Blank Check Only: Performing "Blank" command.

No operation: Performing no command.

[Log record]

Enable: Recording the number of devices written, the number of failed devices and error numbers for the failure (the last 32 histories) during stand-alone operation in the EEPROM built into StickWriter. The record details can be

confirmed in the "Logging" of the "Device" menu.
Disable: No log will be recorded.

(9) Extension reset time

If target device is reset with reset IC, set the time that align to the reset IC.

[Extension at reset time (uSec)]

Specifying the extending reset time. (Maximum 4 seconds)

[Command waiting time (uSec)]

Specifying the extended time before sending commands after resetting (Maximum 4 seconds). Set this when the oscillator stable time for the main clock is longer than normal.

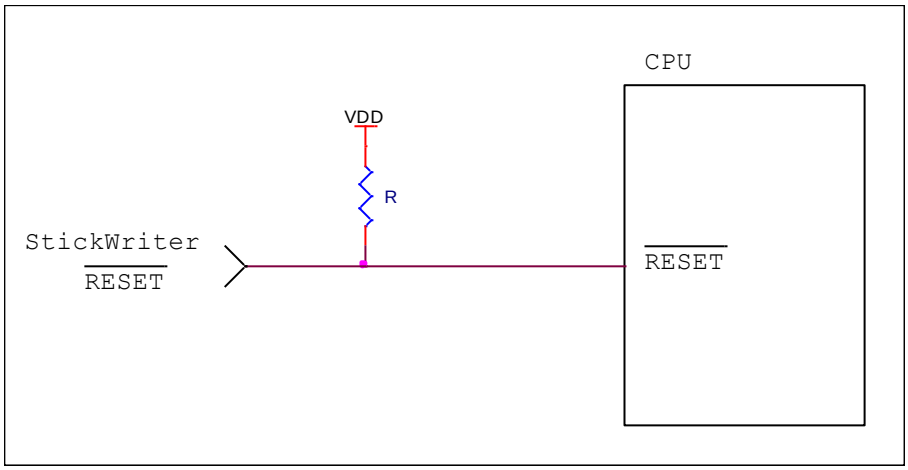
5.4.2 Target I/F

Check the user's manual of the target device as well.

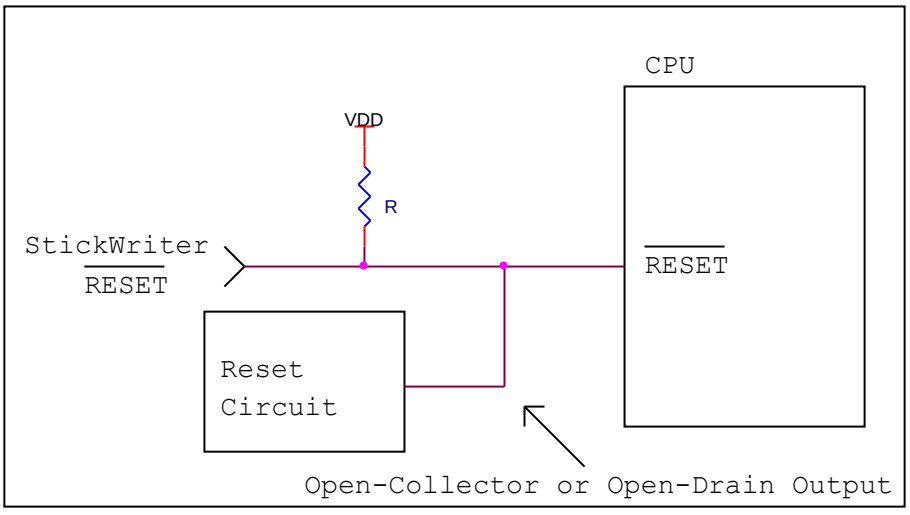
(1) RESET

When StickWriter resets the target CPU, it outputs “Low”.
When StickWriter cancels the reset, it changes to “Hi-Z”. Please connect pull-up resistor

When there is no external reset circuit



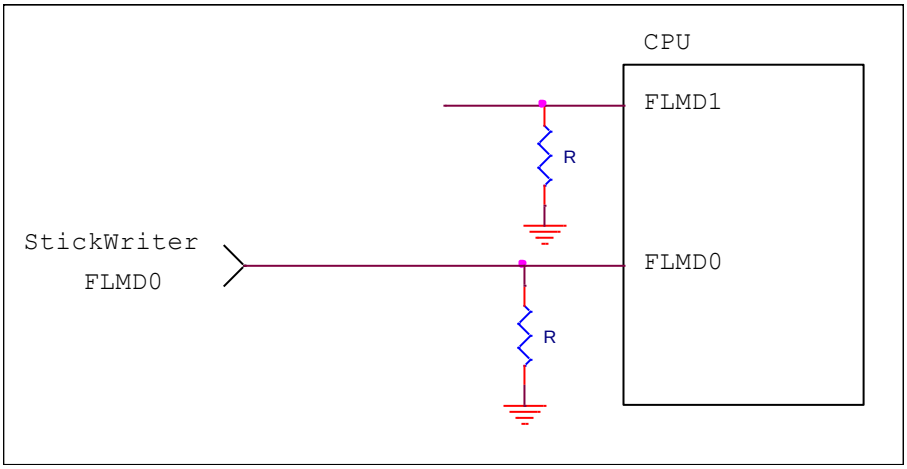
When there is an external reset circuit



Set the external reset circuit as Open-Collector or Open-Drain output. Set the Wired OR Connection with the reset signal from StickWriter. Make sure that reset will not occur while writing to the target CPU from StickWriter. Be cautious when using an external watch-dog timer.

(2) FLMD0, FLMD1

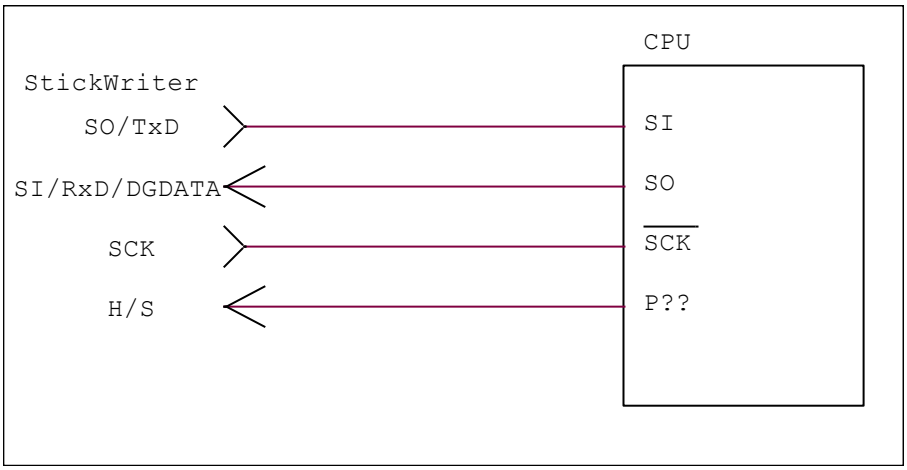
A pulse is output from StickWriter to determine the communication method.
Perform the “pull-down” process on the target board.
If the target device has FLMD1 terminal, keep the "Low" level by processing pull-down and such while StickWriter is connected.



(3) CSI

Connect when you use the CSI terminal as serial interface.
When external devices are connected to those terminals, be cautious not to inhibit communication. Keep in mind that external devices may malfunction due to communication data with the StickWriter.

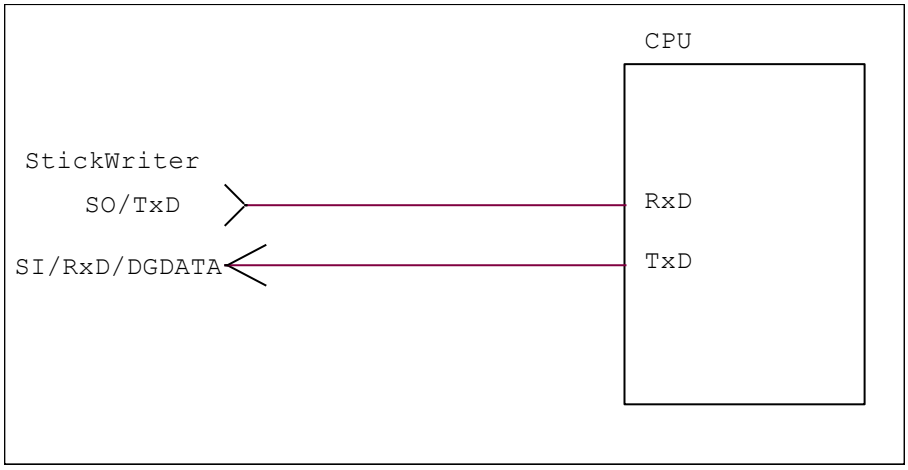
SO/TxD	Connect to SI
SI/RxD/DGDATA	Connect to SO
SCK	Connect to SCK
H/S	Connect to an appropriate terminal for handshake when you use communication with handshake control.



(4) UART

Connect when you use the UART terminal as serial interface.
When external devices are connected to those terminals, be cautious not to inhibit communication. Keep in mind that external devices may malfunction due to communication data with the StickWriter.

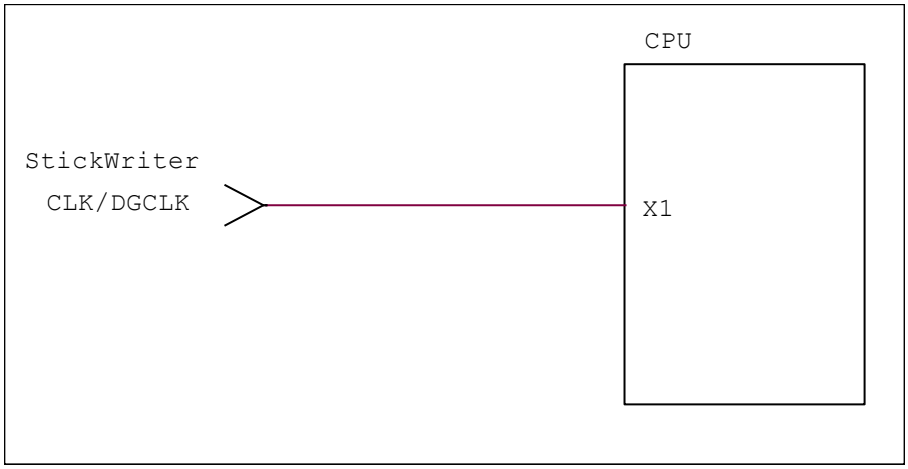
SO/TxD	Connect to RxD
SI/RxD/DGDATA	Connect to TxD



(5) X1

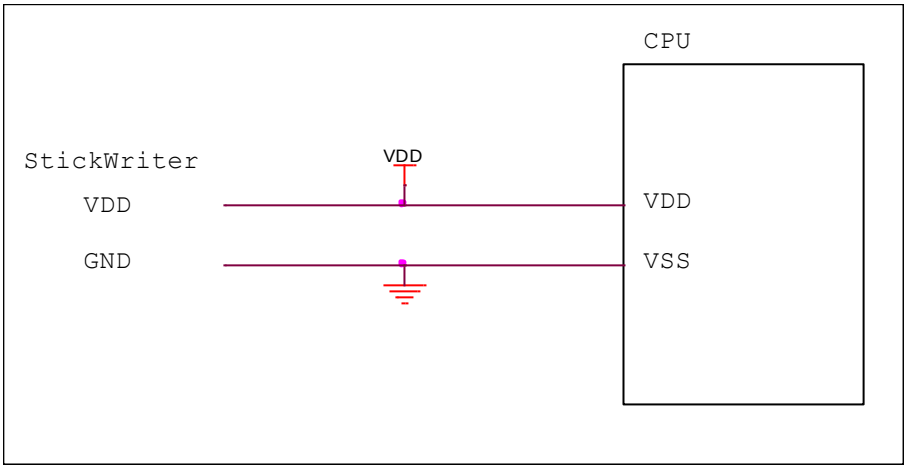
It can output the clock from StickWriter. Connect when the target board does not support oscillator circuit. Note that there are target devices which do not support clock supply.

CLK/DGCLK	Connect to X1

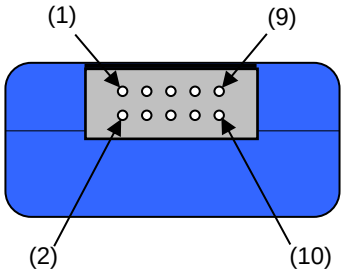


(6) VDD, GND

Connect the power supply of the target device.



5.4.3 Target I/F Connector



Pin No	StickWriter Signal Name	Connect to Target Device
(1)	GND	VSS
(2)	$\overline{RESET}$	$\overline{RESET}$
(3)	SI/RxD/DGDATA	SO or TxD
(4)	VDD	VDD
(5)	SO/TxD	SI or RxD
(6)	FLMD0	FLMD0
(7)	SCK	SCK
(8)	H/S	P??
(9)	CLK/DGCLK	X1
(10)	Reserved	

StickWriter Side Connector Type No:

- DF11-10DP-2DS (Hirose Electronics)

Appropriate Target Side Connectors:

- SMT Type DF11CZ-10DS-2V
- DIP Type DF11-10DS-2DSA
- Insulation Displacement Socket DF11-10DS-2R26
- Clamping Socket DF11-10DS-2C

5.5 V850E2 Series

5.5.1 Setup Screen

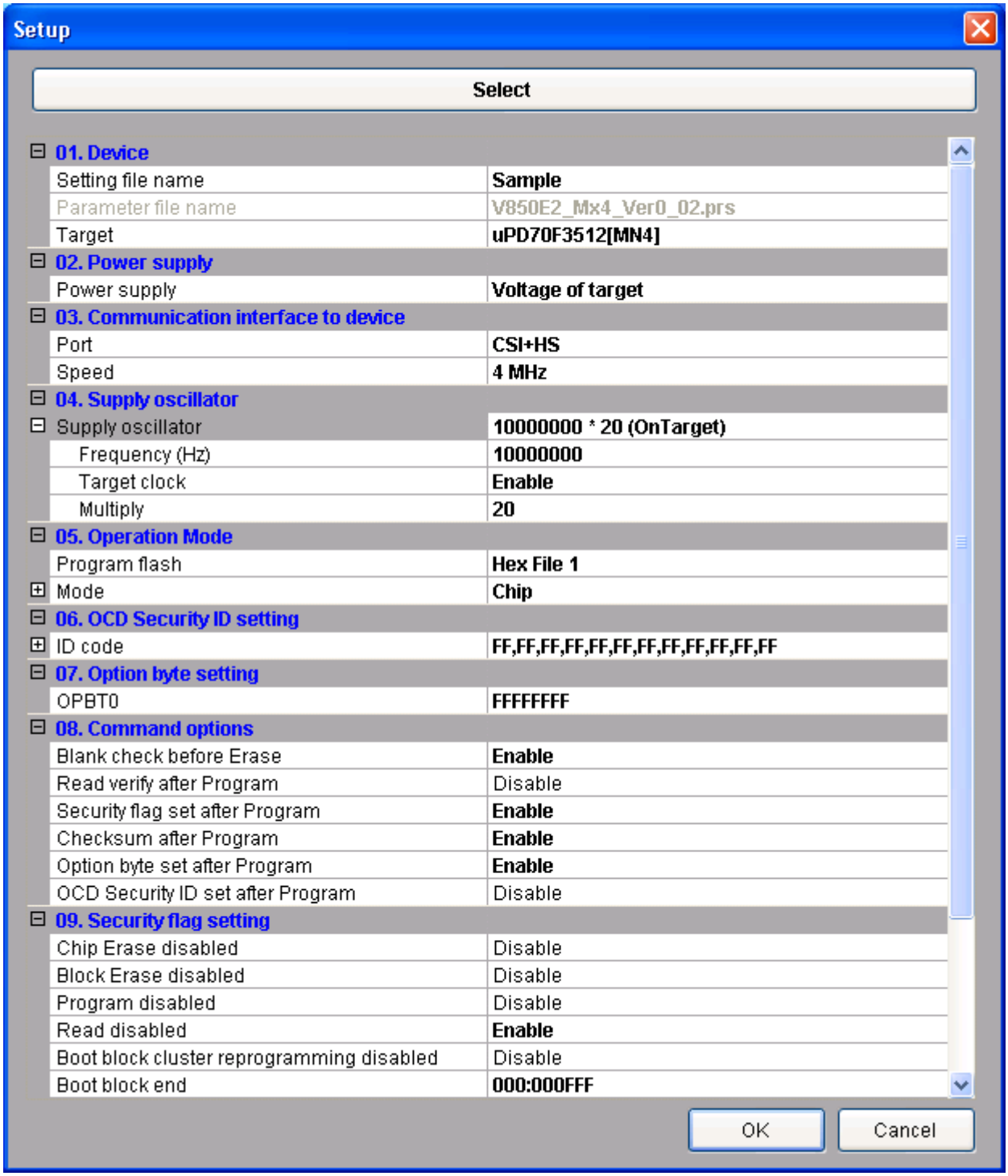


Fig 55

(1) Device

[Setting file name]

The information file name saved in StickWriter. You can change the file name here as well.

[Parameter file name]

The parameter file name with the settings such as memory size of the device, communication timing, and so on.

[Target]

The device used with this setting file. You can select a device.

(2) Power supply

Setting the power supply of the target device.

Target voltage: No power supplied from StickWriter. It uses the power from the target board.

3.3V Output: 3.3V output from StickWriter

5.0V Output: 5.0V output from StickWriter (This is not available if the device does not support 5V)

(3) Communication interface to device

Displaying the communication method between the target device and StickWriter.

[Port]

Indicating the communication method with target device. You can select UART or CSI+HS. Please refer to the user's manual for the device.

[Speed]

Indicating the communication speed.

(4) Supply oscillator

Specifying the operation frequency for the target device.

[Frequency (Hz)]

setting the frequency supplying to the target device.

[Target clock]

Set to "Enable" when the clock is supplied on board and "Disable" when the clock is output the "Frequency" setting from StickWriter.

[Multiply]

Set the multiplying rate if the target device supports frequency multiplying.

(5) Operation Mode

[Program flash]

Specifying the program HEX file number for writing.

[Mode]

Displaying the writing mode. Click beside the "Mode" to change it.

Area: **Chip** and **Block** are available.

- Chip: Operation (Write, Erase, etc.) will affect to all flash memory in device.
- Block Operation (Write, Erase, etc.) will affect to the block between specific "Start" and "End" address.

Start: Start address of the block for Block mode writing. It is always 0 (fixed).

End: End address of the block for Block mode writing.

(6) OCD Security ID setting

The OCD security ID can be set in this area.

(7) Option byte setting

The option bytes can be set in this area.

(8) Command options

Setting the options for a target device command.

[Blank check before Erase] "Blank" command is performed before "Erase" command is performed. If the flash memory is blank, "Erase" will not be performed.

[Read verify after Program] "Verify" command is performed after "Program" command id completed.

[Security flag set after Program] The security flag specified in "Security Setting" will be written after the writing by "Program" command is completed.

[Checksum after program] checksum from the target device is retrieved and compared by "Checksum" command after the writing by "Program" command is completed. If the value is not matched, it returns an error.

[Option byte set after Program] The option byte specified in "Option byte setting" will be written after the writing by "Program" command is completed.

[OCD Security ID set after Program] The OCD security ID specified in "OCD Security ID setting" will be written after the writing by "Program" command is completed.

(9) Security flag setting

Setting the options for security flag. If the items are not available for the device, they will not be appeared.

[Chip Erase disabled] If it sets to "Enable", it cannot erase flash memory.

Note: If this is enabled to a target device, it cannot write and erase anything on the memory.

[Block Erase disabled] If it sets to "Enable", it cannot erase with a block area of flash memory.

[Program disabled] If it sets to "Enable", it cannot write on the memory.

This can be canceled when you perform "Erase" command with "Chip" mode.

[Read disabled] If it sets to "Enable", it cannot read the program written by writer.

This can be canceled when you perform "Erase" command with "Chip" mode.

[Boot block cluster reprogramming disabled] If it sets to "Enable", it cannot write on the boot block.

Note: If this is enabled to a target device, it cannot write anything on the boot block.

[Boot block end] This specifies the end of not-rewritable boot block area when "Boot block cluster reprogramming disabled" sets to "Enable".

[Block protection] Setting the block function "Flash shield window" when it is self-programming. For details, please refer to the user's manuals of the device. Click ⊞ beside the "Block protection" to change its range.

(10) Stand-alone Operation

Specifying performing command when it is a stand-alone operation without PC connected.

When you perform a stand-alone operation, make sure that you select "Target

voltage" for the "Power supply" setting.

[Stand-alone Operation]

EPV: Performing "EPV" command.

Verify Only: Performing "Verify" command.

Erase Only: Performing "Erase" command.

Blank Check Only: Performing "Blank" command.

No operation: Performing no command.

[Log record]

Enable: Recording the number of devices written, the number of failed devices and error numbers for the failure (the last 32 histories) during stand-alone operation in the EEPROM built into StickWriter. The record details can be confirmed in the "Logging" of the "Device" menu.

Disable: No log will be recorded.

(11) Extension reset time

If target device is reset with reset IC, set the time that align to the reset IC.

[Extension at reset time (uSec)]

Specifying the extending reset time. (Maximum 4 seconds)

[Command waiting time (uSec)]

Specifying the extended time before sending commands after resetting (Maximum 4 seconds). Set this when the oscillator stable time for the main clock is longer than normal.

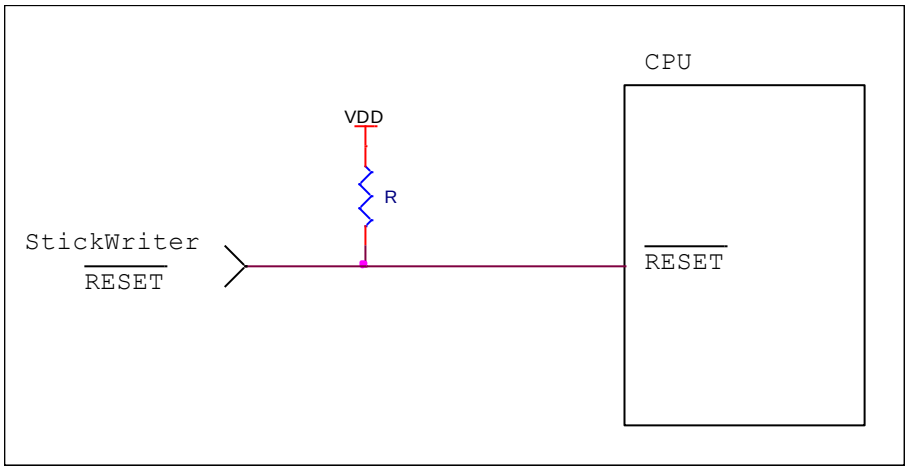
5.5.2 Target I/F

Check the user's manual of the target device as well.

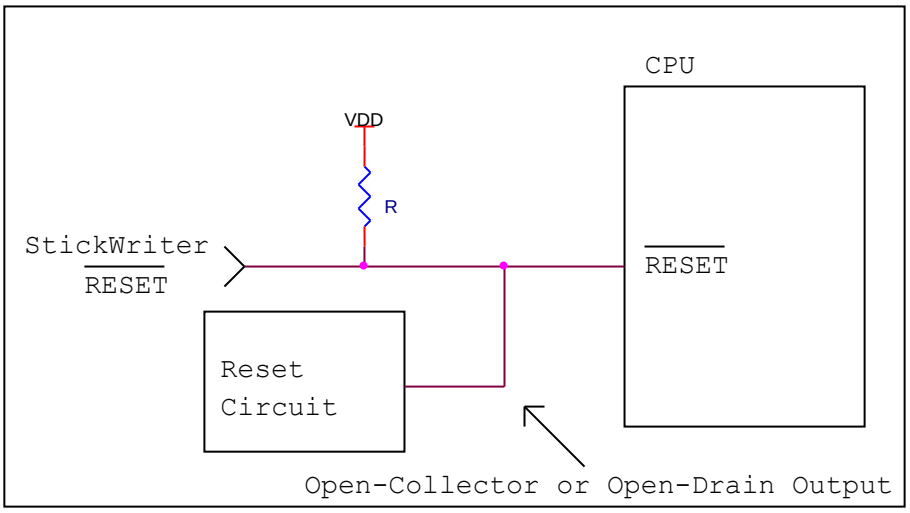
(1) RESET

When StickWriter resets the target CPU, it outputs “Low”.
When StickWriter cancels the reset, it changes to “Hi-Z”. Please connect pull-up resistor

When there is no external reset circuit



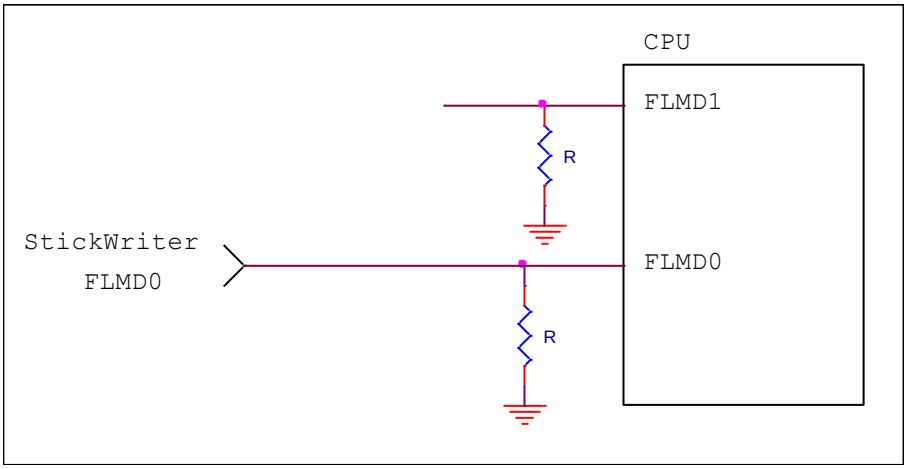
When there is an external reset circuit



Set the external reset circuit as Open-Collector or Open-Drain output. Set the Wired OR Connection with the reset signal from StickWriter. Make sure that reset will not occur while writing to the target CPU from StickWriter. Be cautious when using an external watch-dog timer.

(2) FLMD0, FLMD1

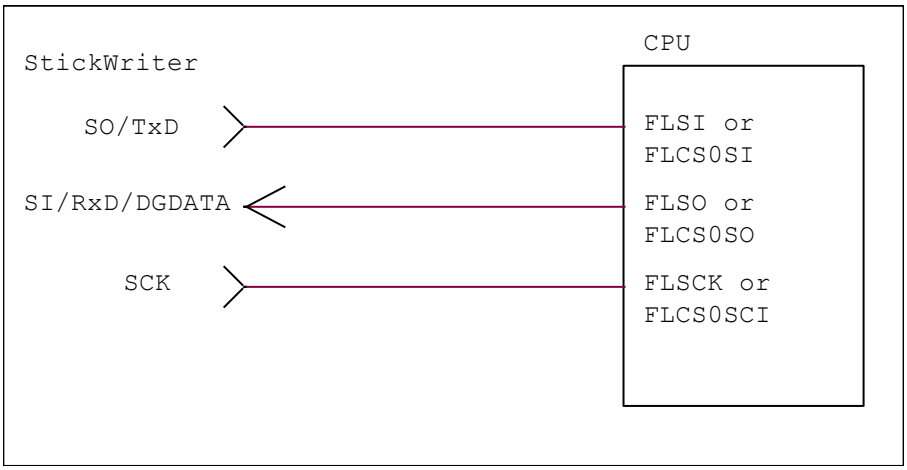
A pulse is output from StickWriter to determine the communication method.
Perform the “pull-down” process on the target board.
If the target device has FLMD1 terminal, keep the "Low" level by processing pull-down and such while StickWriter is connected.



(3) CSI

Connect when you use a synchronous serial flash programming interface.

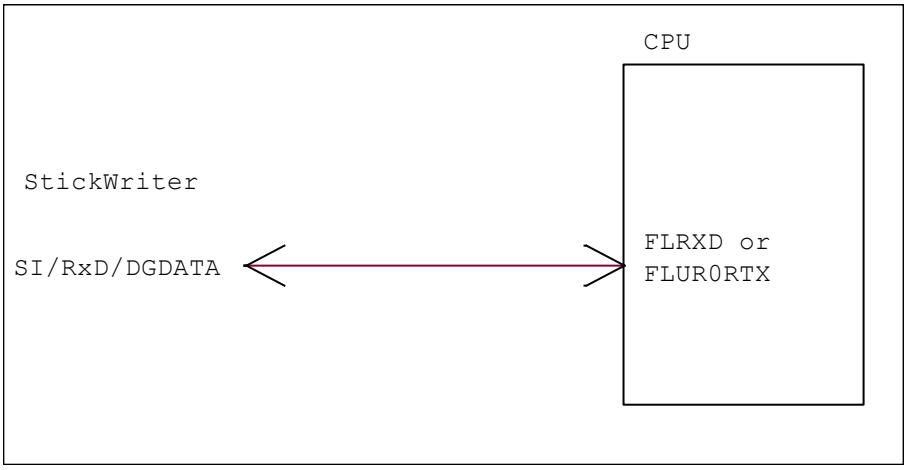
SO/TxD	Connect to serial-data input terminal.
SI/RxD/DGDATA	Connect to serial-data output terminal.
SCK	Connect to serial-data clock input terminal.



(4) UART

Connect when you use a single wire asynchronous serial programming interface.

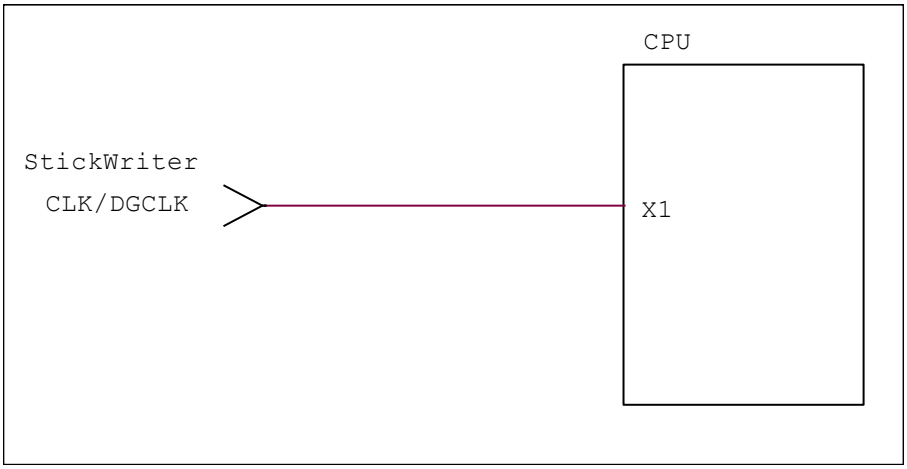
SI/RxD/DGDATA Connect to reception/transmission data terminal.



(5) X1

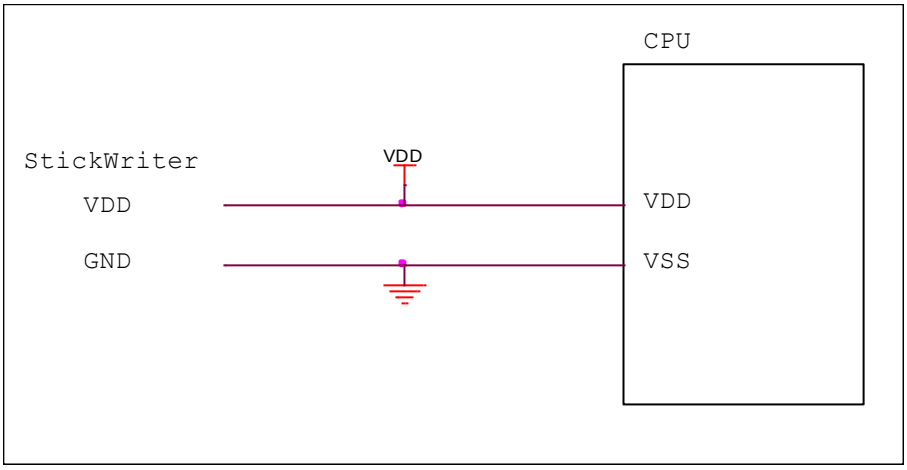
It can output the clock from StickWriter. Connect when the target board does not support oscillator circuit. Note that there are target devices which do not support clock supply.

CLK/DGCLK Connect to X1

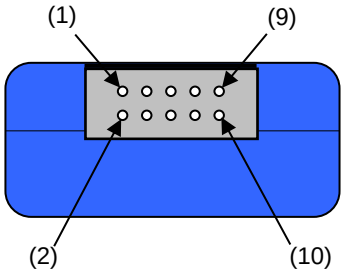


(6) VDD, GND

Connect the power supply of the target device.



5.5.3 Target I/F Connector



Pin No	StickWriter Signal Name	Connect to Target Device	
		UART	CSI
(1)	GND	VSS	
(2)	$\overline{RESET}$	$\overline{RESET}$	
(3)	SI/RxD/DGDATA	**FLRXD**	FLSO
(4)	VDD	EVDD	
(5)	SO/TxD	N.C.	FLSI
(6)	FLMD0	FLMD0	
(7)	SCK	N.C.	FLSCK
(8)	H/S	N.C.	
(9)	CLK/DGCLK	N.C.	
(10)	Reserved	N.C.	

Please fix FLMD1 to a Low level on a target board.

StickWriter Side Connector Type No:

- DF11-10DP-2DS (Hirose Electronics)

Appropriate Target Side Connectors:

- SMT Type DF11CZ-10DS-2V
- DIP Type DF11-10DS-2DSA
- Insulation Displacement Socket DF11-10DS-2R26
- Clamping Socket DF11-10DS-2C

5.6 R8C Series

5.6.1 Setup Screen

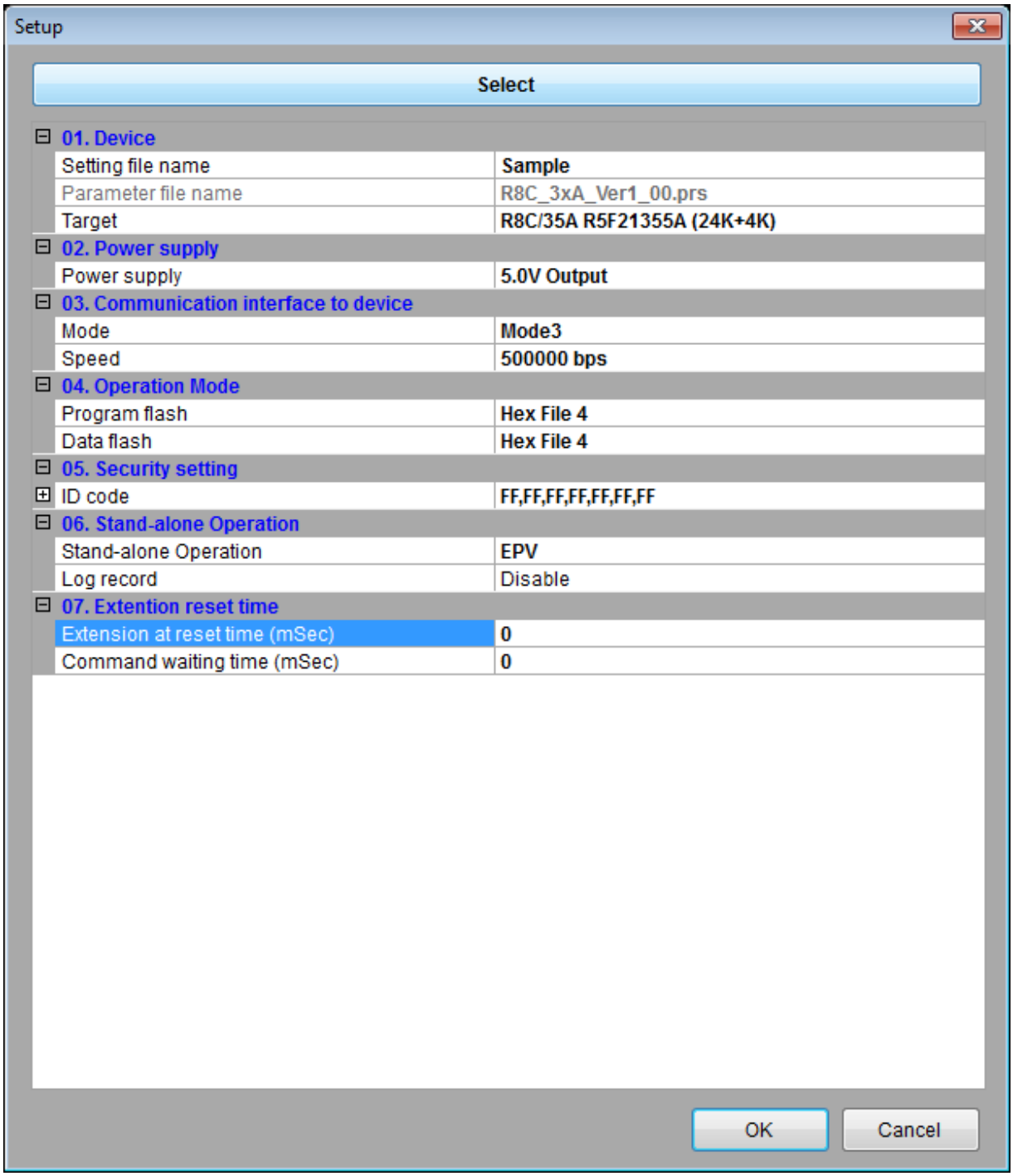


Fig 56

(1) Device

[Setting file name]

The information file name saved in StickWriter. You can change the file name here as well.

[Parameter file name]

The parameter file name with the settings such as memory size of the device, communication timing, and so on.

[Target]

The device used with this setting file. You can select a device.

(2) Power supply

Setting the power supply of the target device.

Target voltage: No power supplied from StickWriter. It uses the power from the target board.

3.3V Output: 3.3V output from StickWriter

5.0V Output: 5.0V output from StickWriter (This is not available if the device does not support 5V)

(3) Communication interface to device

Displaying the communication method between the target device and StickWriter.

[Mode]

Mode 3 is only available.

[Speed]

Indicating the communication speed.

(4) Operation Mode

[Program flash]

Specifying the program HEX file number for writing.

[Data flash]

Specifying the program HEX file number for writing on data flash area. You can select the same file as Program flash.

(5) Security setting

Displaying the ID code. Click beside the "ID code" to expand it by 1Byte.

(6) Stand-alone Operation

Specifying performing command when it is a stand-alone operation without PC connected.

When you perform a stand-alone operation, make sure that you select "Target voltage" for the "Power supply" setting.

[Stand-alone Operation]

EPV: Performing "EPV" command.

Verify Only: Performing "Verify" command.

Erase Only: Performing "Erase" command.

Blank Check Only: Performing "Blank" command.

No operation: Performing no command.

[Log record]

Enable: Recording the number of devices written, the number of failed devices

and error numbers for the failure (the last 32 histories) during stand-alone operation in the EEPROM built into StickWriter. The record details can be confirmed in the "Logging" of the "Device" menu.
Disable: No log will be recorded.

(7) Extension reset time

If target device is reset with reset IC, set the time that align to the reset IC.

[Extension at reset time (mSec)]

Specifying the extending reset time. (Maximum 4 seconds)

[Command waiting time (mSec)]

Specifying the extended time before sending commands after resetting (Maximum 4 seconds). Basically, you do not need to set this.

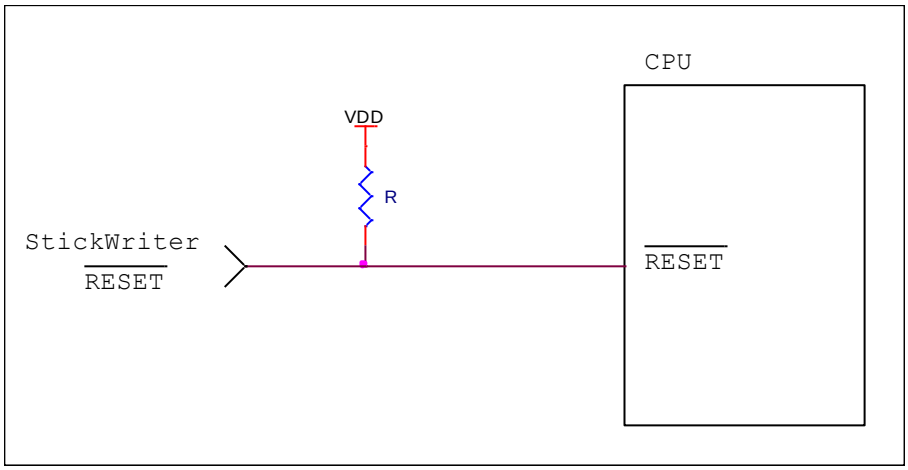
5.6.2 Target I/F

Check the user's manual of the target device as well.

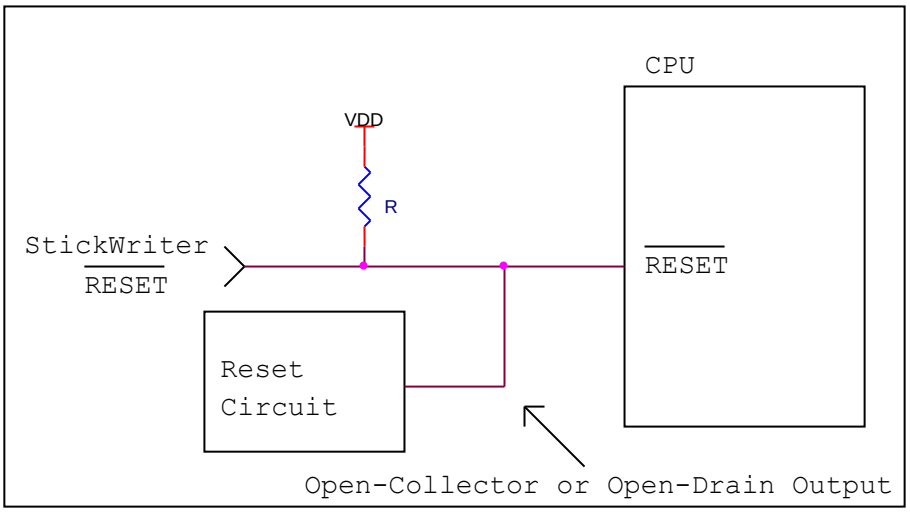
(1) RESET

When StickWriter resets the target CPU, it outputs “Low”.
When StickWriter cancels the reset, it changes to “Hi-Z”. Please connect pull-up resistor

When there is no external reset circuit



When there is an external reset circuit

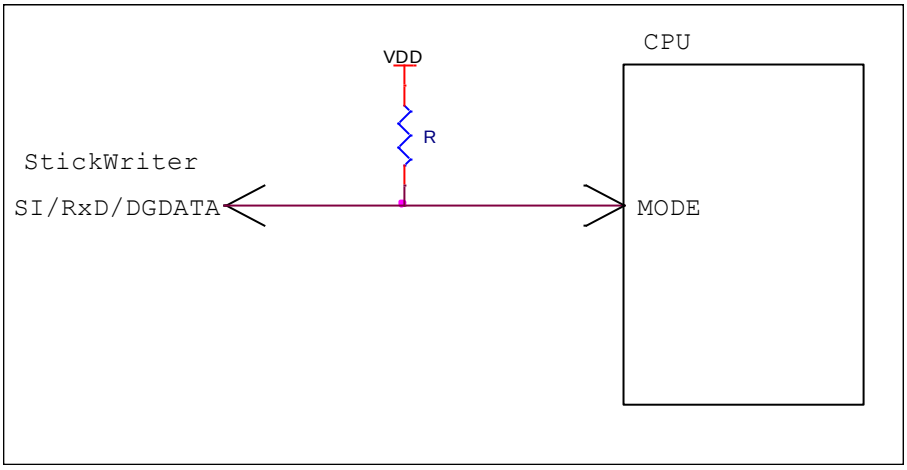


Set the external reset circuit as Open-Collector or Open-Drain output. Set the Wired OR Connection with the reset signal from StickWriter. Make sure that reset will not occur while writing to the target CPU from StickWriter. Be cautious when using an external watch-dog timer.

(2) MODE

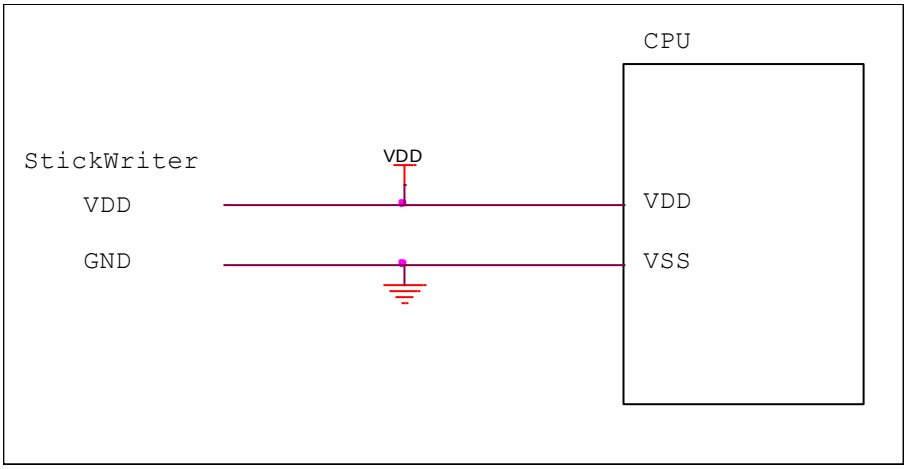
Use MODE terminal as serial interface.

SI/RxD/DGDATA Connect to MODE

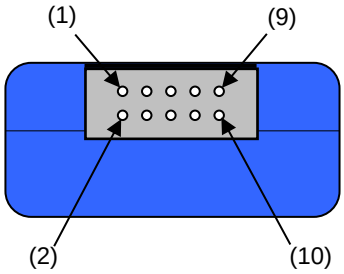


(3) VDD, GND

Connect the power supply of the target device.



5.6.3 Target I/F Connector



Pin No	StickWriter Signal Name	Connect to Target Device
(1)	GND	VSS
(2)	$\overline{RESET}$	$\overline{RESET}$
(3)	SI/RxD/DGDATA	MODE
(4)	VDD	VCC
(5)	SO/TxD	
(6)	FLMD0	
(7)	SCK	
(8)	H/S	
(9)	CLK/DGCLK	
(10)	Reserved	

StickWriter Side Connector Type No:

- DF11-10DP-2DS (Hirose Electronics)

Appropriate Target Side Connectors:

- SMT Type DF11CZ-10DS-2V
- DIP Type DF11-10DS-2DSA
- Insulation Displacement Socket DF11-10DS-2R26
- Clamping Socket DF11-10DS-2C

5.7 RX, SH Series

5.7.1 Setup Screen

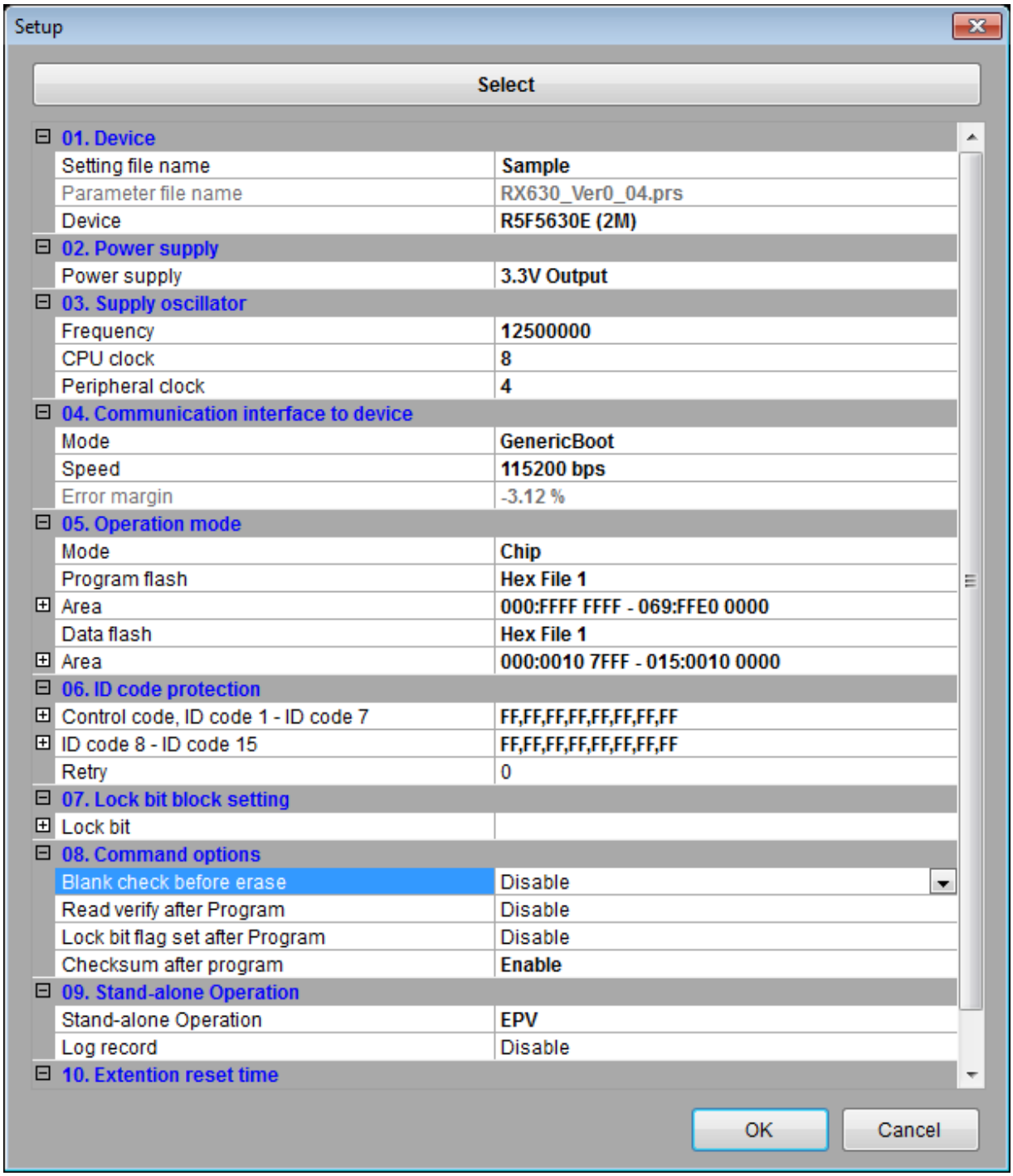


Fig 57

(1) Device

[Setting file name]

The information file name saved in StickWriter. You can change the file name here as well.

[Parameter file name]

The parameter file name with the settings such as memory size of the device, communication timing, and so on.

[Target]

The device used with this setting file. You can select a device.

(2) Power supply

Setting the power supply of the target device.

Target voltage: No power supplied from StickWriter. It uses the power from the target board.

3.3V Output: 3.3V output from StickWriter

5.0V Output: 5.0V output from StickWriter (This is not available if the device does not support 5V)

(3) Supply oscillator

Specifying the operation frequency for the target device.

[Frequency (Hz)]

setting the frequency supplying to the target device.

[CPU clock]

Set the multiplying rate of the main clock.

[Peripheral clock]

Set the multiplying rate of the peripheral clock.

(4) Communication interface to device

Displaying the communication method between the target device and StickWriter.

[Mode]

Generic Boot is only available.

[Speed]

Indicating the communication speed.

[Error margin]

Displaying the difference of the "Peripheral clock" setting and "Speed". Set the speed with less than 4% difference.

(5) Operation Mode

[Mode]

Displaying the writing mode. **Chip** and **Block** are available.

- **Chip**: Operation (Write, Erase, etc.) will affect to all flash memory in device.
- **Block** Operation (Write, Erase, etc.) will affect to the block specified at "Area".

[Program flash]

Specifying the program HEX file number for writing.

[Area]

Indicating the area for program flash. This cannot be changed if Chip mode is selected. When it is Block mode, click ⊞ beside the "Area" to change the

"Start" and "End" address.

[Data flash]

Specifying the program HEX file number for writing on data flash area. You can select the same file as Program flash.

[Area]

Indicating the area for data flash. This cannot be changed if Chip mode is selected. When it is Block mode, click ⊞ beside the "Area" to change the "Start" and "End" address. When "None" is chosen, it does not access to a data flash.

[User boot flash]

Specifying the program HEX file number for writing on user boot area.

[Area]

Indicating the area for user boot flash. This cannot be changed if Chip mode is selected. When it is Block mode, click ⊞ beside the "Area" to change the "Start" and "End" address.

(6) ID code protect

Setting the ID code sending to the target device when writing. This is available if the target device supports it.

[Control code, ID code 1 - ID code 7]

Displaying control code, ID code 1 – 7. Click ⊞ to expand by 1Byte

[ID code 8 - ID code 15]

Displaying ID code 8 - 15. Click ⊞ to expand by 1Byte

[Retry]

When it sets to "0", then it makes an error with incorrect ID code without retrying. When it sets to "2", it retries 2 times before make it an error. If the device has the control code of 45h, and if the device receives the third consecutive incorrect ID code, it becomes the case of all deletion. Even this case, it will make an error. Therefore, re-perform the command again.

(7) Lock bit block setting

Setting the lock bit as the software protect function. Click ⊞ to change the setting. This is available if the target device supports it. For those device support lock bit, it makes the setting to "Disable" just before writing or erasing is performed, and makes the setting to "Enable" after the command is completed. It set the lock bit when it writes with "Lock bit set after Program" enabled or when it performs "Security" command.

(8) Command options

Setting the options for a target device command.

[Blank check before Erase] "Blank" command is performed before "Erase" command is performed. If the flash memory is blank, "Erase" will not be performed.

[Read verify after Program] "Read" command is performed after "Program" command id completed.

[Lock bit set after Program] It set the lock bit after the writing by "Program" command is completed.

[Checksum after program] checksum from the target device is retrieved and compared by "Checksum" command after the writing by "Program" command is

completed. If the value is not matched, it returns an error. This is not available when it selects Block mode.

When all verify, lock bit, and checksum is enabled, it will process with following order. If error occurs, it will not process after that.

- Verify
- Checksum
- Lock bit

(9) Stand-alone Operation

Specifying performing command when it is a stand-alone operation without PC connected.

When you perform a stand-alone operation, make sure that you select "Target voltage" for the "Power supply" setting.

[Stand-alone Operation]

EPV: Performing "EPV" command.

Verify Only: Performing "Verify" command.

Erase Only: Performing "Erase" command.

Blank Check Only: Performing "Blank" command.

No operation: Performing no command.

[Log record]

Enable: Recording the number of devices written, the number of failed devices and error numbers for the failure (the last 32 histories) during stand-alone operation in the EEPROM built into StickWriter. The record details can be confirmed in the "Logging" of the "Device" menu.

Disable: No log will be recorded.

(10) Extension reset time

If target device is reset with reset IC, set the time that align to the reset IC.

[Extension at reset time (mSec)]

Specifying the extending reset time. (Maximum 4 seconds)

[Command waiting time (mSec)]

Specifying the extended time before sending commands after resetting (Maximum 4 seconds). Basically, you do not need to set this.

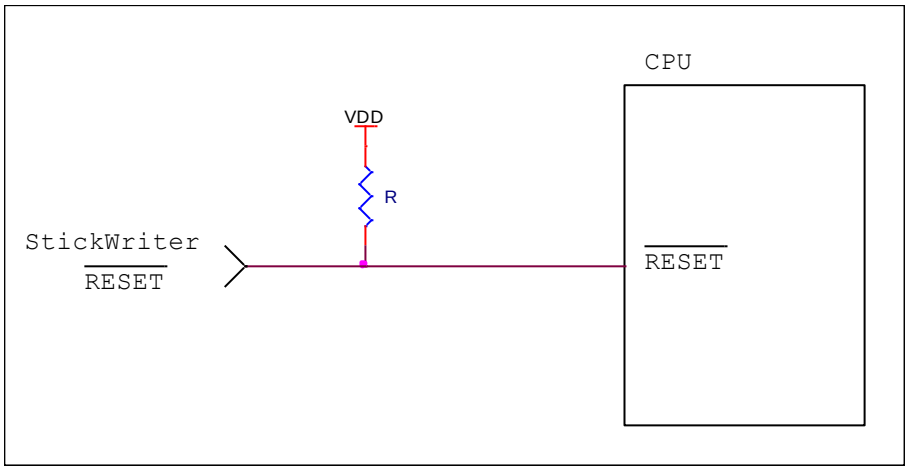
5.7.2 Target I/F

Check the user's manual of the target device as well.

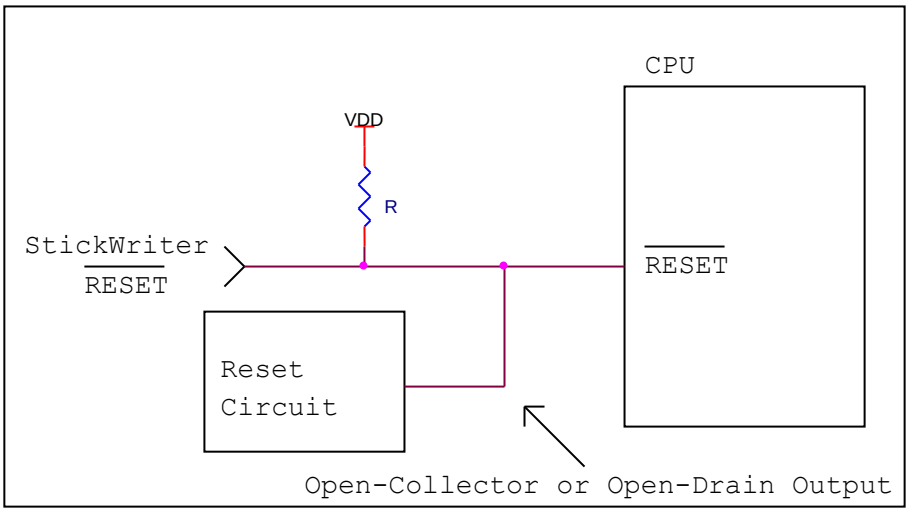
(1) RESET

When StickWriter resets the target CPU, it outputs “Low”.
When StickWriter cancels the reset, it changes to “Hi-Z”. Please connect pull-up resistor

When there is no external reset circuit



When there is an external reset circuit

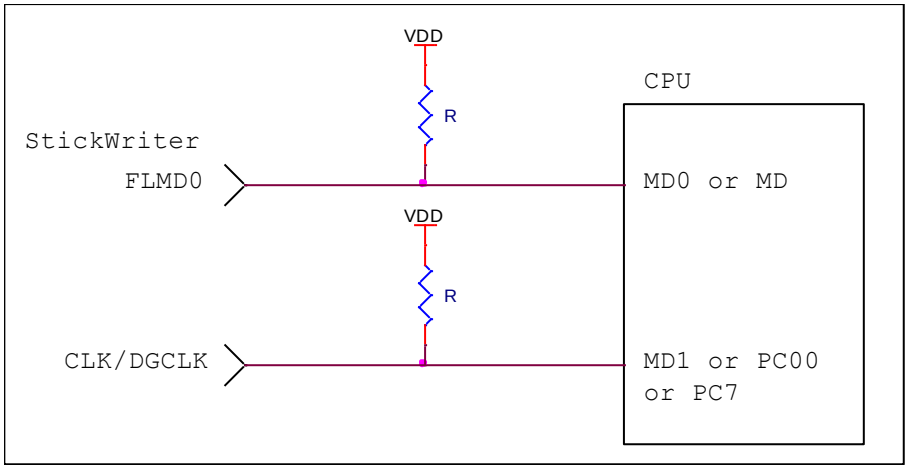


Set the external reset circuit as Open-Collector or Open-Drain output. Set the Wired OR Connection with the reset signal from StickWriter. Make sure that reset will not occur while writing to the target CPU from StickWriter. Be cautious when using an external watch-dog timer.

(2) MD, MD0, MD1

A signal is output from StickWriter to set the boot mode.
Perform the “pull-up” or “pull-down” process on the target board.
If the target device has the terminal for setting boot mode, you do not need to connect this. Keep the boot mode while StickWriter is connected.

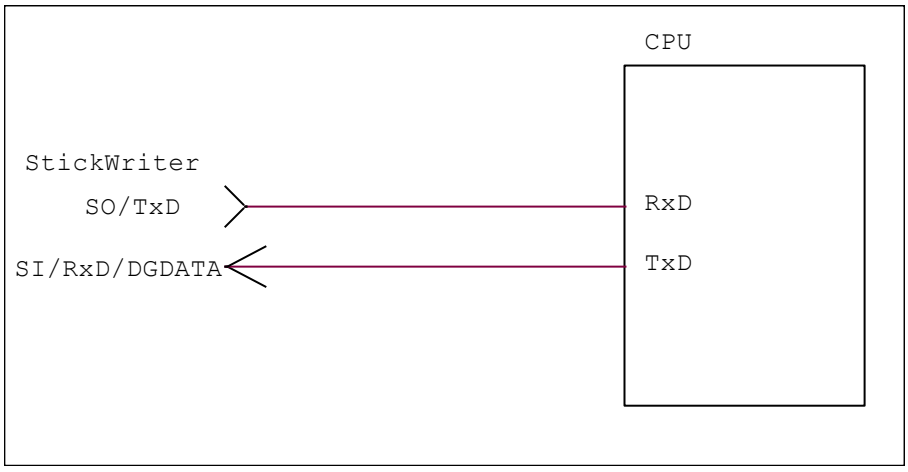
FLMD0	Connect to MD0 or MD
CLK/DGCLK	Connect to MD1, P00 or PC7



(3) UART

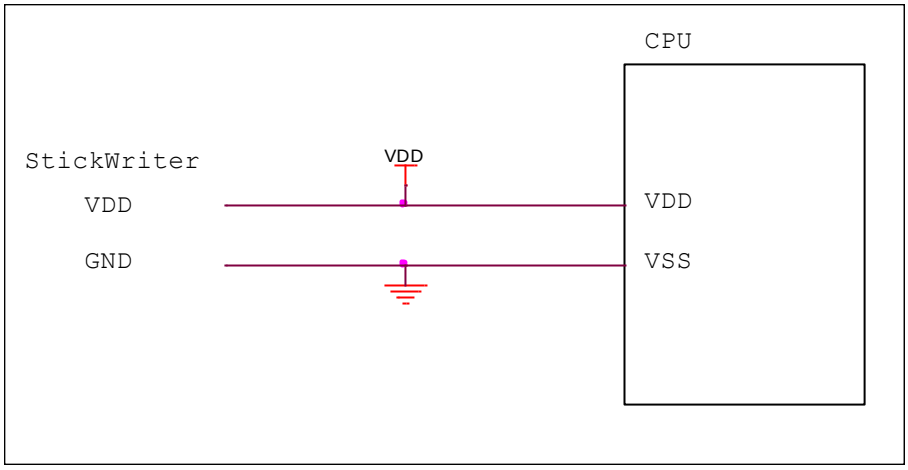
Connect when you use the UART terminal as serial interface.
When external devices are connected to those terminals, be cautious not to inhibit communication. Keep in mind that external devices may malfunction due to communication data with the StickWriter.

SO/TxD	Connect to RxD
SI/RxD/DGDATA	Connect to TxD

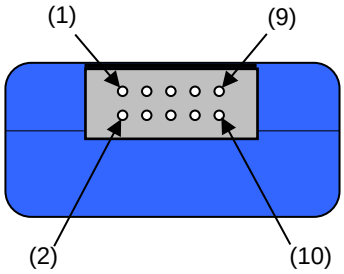


(4) VDD, GND

Connect the power supply of the target device.



5.7.3 Target I/F Connector



Pin No	StickWriter Signal Name	Connect to Target Device
(1)	GND	VSS
(2)	$\overline{RESET}$	$\overline{RESET}$
(3)	SI/RxD/DGDATA	TxD
(4)	VDD	VCC
(5)	SO/TxD	RxD
(6)	FLMD0	MD0 or MD
(7)	SCK	
(8)	H/S	
(9)	CLK/DGCLK	MD1 or P00 or PC7
(10)	Reserved	

StickWriter Side Connector Type No:

- DF11-10DP-2DS (Hirose Electronics)

Appropriate Target Side Connectors:

- SMT Type DF11CZ-10DS-2V
- DIP Type DF11-10DS-2DSA
- Insulation Displacement Socket DF11-10DS-2R26
- Clamping Socket DF11-10DS-2C

5.8 RL78 Series

5.8.1 Setup Screen

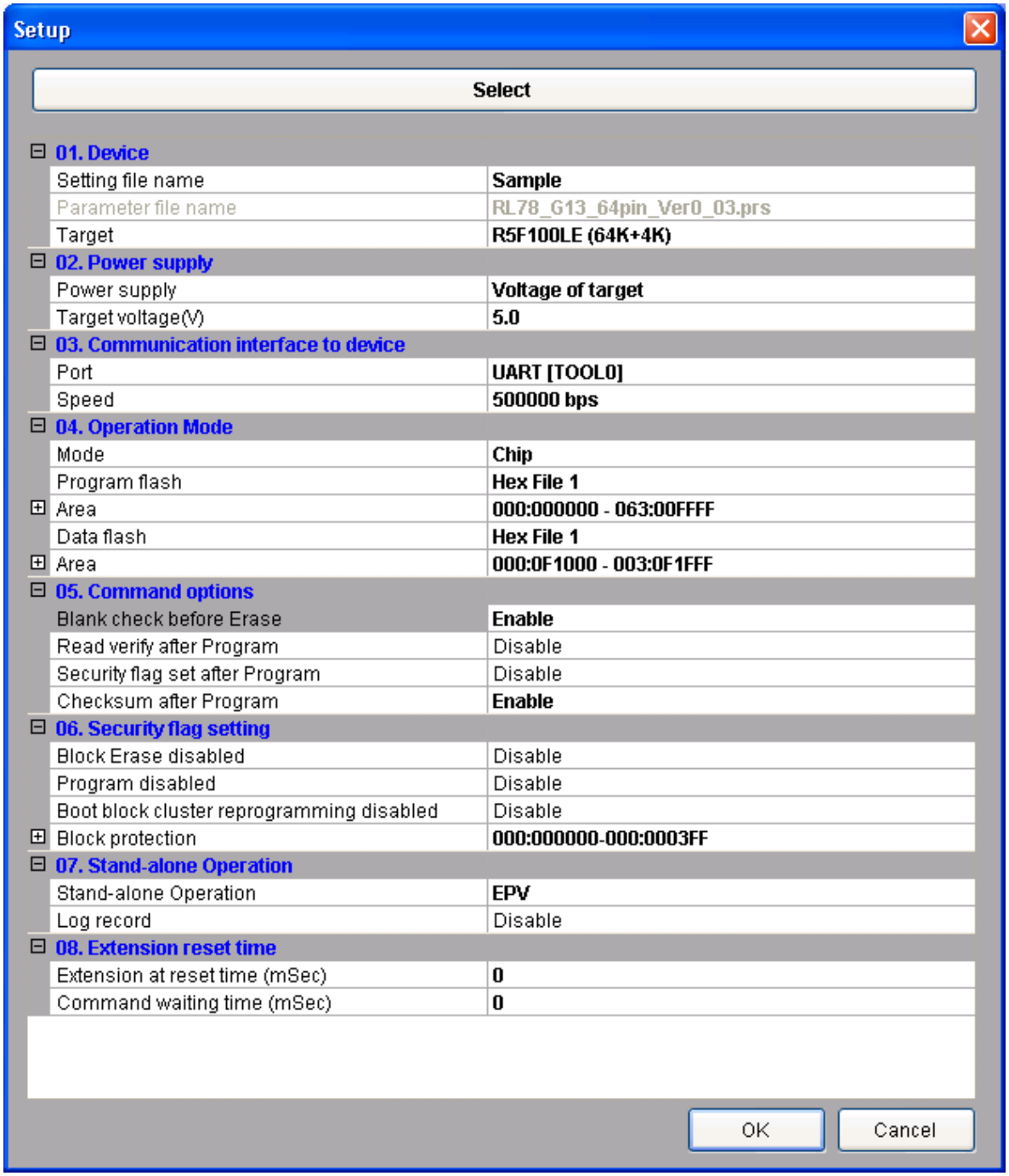


Fig 58

(1) Device

[Setting file name]

The information file name saved in StickWriter. You can change the file name here as well.

[Parameter file name]

The parameter file name with the settings such as memory size of the device, communication timing, and so on.

[Target]

The device used with this setting file. You can select a device.

(2) Power supply

[Power supply]

Setting the power supply of the target device.

Voltage of target: No power supplied from StickWriter. It uses the power from the target board.

3.3V Output: 3.3V output from StickWriter

5.0V Output: 5.0V output from StickWriter

[Target voltage]

When "Voltage of target" is selected in the power supply, the voltage of the target board is input.

(3) Communication interface to device

Displaying the communication method between the target device and StickWriter.

[Port]

UART [TOOL0] is only available.

[Speed]

Indicating the communication speed.(500Kbps, 250Kbps, 115.2Kbps)

(4) Operation Mode

[Mode]

Displaying the writing mode. **Chip** and **Block** are available.

- **Chip**: Operation (Write, Erase, etc.) will affect to all flash memory in device.
- **Block** Operation (Write, Erase, etc.) will affect to the block specified at "Area".

[Program flash]

Specifying the program HEX file number for writing.

[Area]

Indicating the area for program flash. This cannot be changed if Chip mode is selected. When it is Block mode, click ⊞ beside the "Area" to change the "Start" and "End" address.

[Data flash]

Specifying the program HEX file number for writing on data flash area. You can select the same file as Program flash.

[Area]

Indicating the area for data flash. This cannot be changed if Chip mode is selected. When it is Block mode, click ⊞ beside the "Area" to change the "Start" and "End" address. When "None" is chosen, it does not access to a data flash.

(5) Command options

Setting the options for a target device command.

[Blank check before Erase] "Blank" command is performed before "Erase" command is performed. If the flash memory is blank, "Erase" will not be performed.

[Read verify after Program] "Verify" command is performed after "Program" command id completed.

[Security flag set after Program] The security flag specified in "Security Setting" will be written after the writing by "Program" command is completed.

[Checksum after program] checksum from the target device is retrieved and compared by "Checksum" command after the writing by "Program" command is completed. If the value is not matched, it returns an error.

(6) Security flag setting

Setting the options for security flag.

[Block Erase disabled] If it sets to "Enable", it cannot erase with a block area of flash memory.

Note: If this is enabled to a target device, it cannot write and erase anything on the memory.

[Program disabled] If it sets to "Enable", it cannot write on the memory.

This can be canceled when you perform "Erase" command with "Chip" mode.

[Boot block cluster reprogramming disabled] If it sets to "Enable", it cannot write on the boot block.

Note: If this is enabled to a target device, it cannot write anything on the boot block.

[Block protection] Setting the block function "Flash shield window" when it is self-programming. For details, please refer to the user's manuals of the device. Click ⊞ beside the "Block protection" to change its range.

(7) Stand-alone Operation

Specifying performing command when it is a stand-alone operation without PC connected.

When you perform a stand-alone operation, make sure that you select "Target voltage" for the "Power supply" setting.

[Stand-alone Operation]

EPV: Performing "EPV" command.

Verify Only: Performing "Verify" command.

Erase Only: Performing "Erase" command.

Blank Check Only: Performing "Blank" command.

No operation: Performing no command.

[Log record]

Enable: Recording the number of devices written, the number of failed devices and error numbers for the failure (the last 32 histories) during stand-alone operation in the EEPROM built into StickWriter. The record details can be confirmed in the "Logging" of the "Device" menu.

Disable: No log will be recorded.

(8) Extension reset time

If target device is reset with reset IC, set the time that align to the reset IC.

[Extension at reset time (mSec)]

Specifying the extending reset time. (Maximum 4 seconds)

[Command waiting time (mSec)]

Specifying the extended time before sending commands after resetting (Maximum 4 seconds). Basically, you do not need to set this.

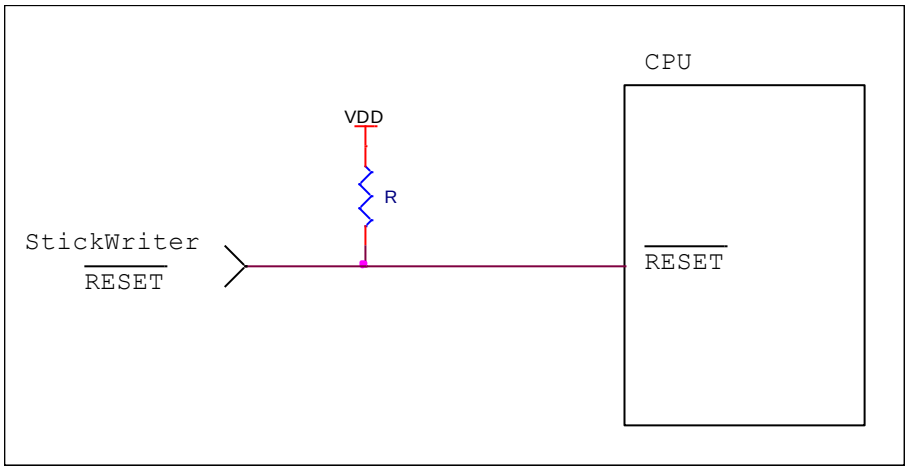
5.8.2 Target I/F

Check the user's manual of the target device as well.

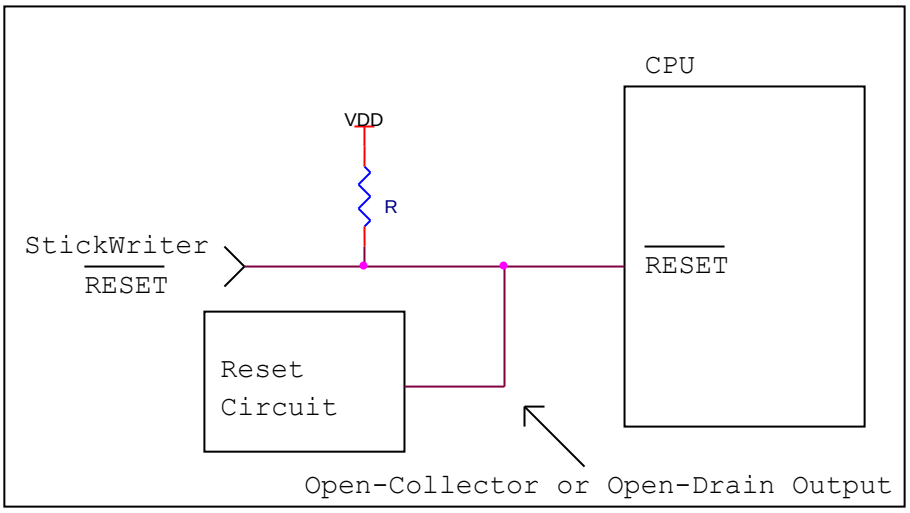
(1) RESET

When StickWriter resets the target CPU, it outputs “Low”.
When StickWriter cancels the reset, it changes to “Hi-Z”. Please connect pull-up resistor

When there is no external reset circuit



When there is an external reset circuit



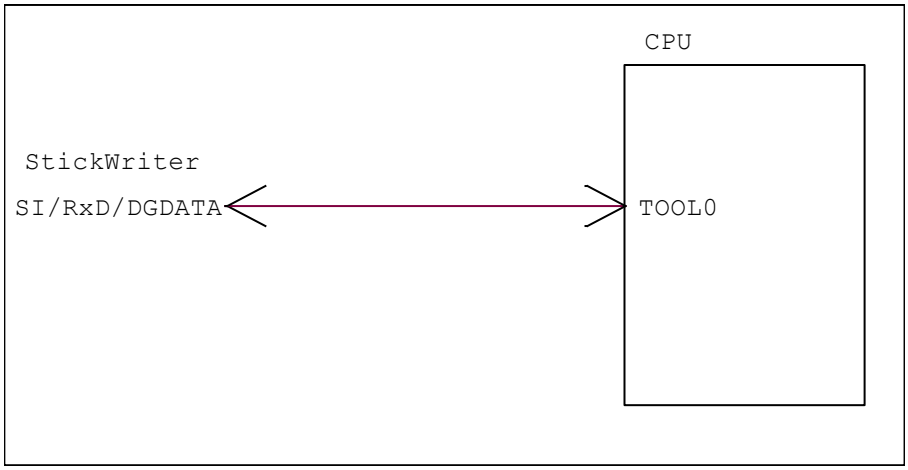
Set the external reset circuit as Open-Collector or Open-Drain output. Set the Wired OR Connection with the reset signal from StickWriter. Make sure that reset will not occur while writing to the target CPU from StickWriter. Be cautious when using an external watch-dog timer.

(2) TOOL0

Connect when you use the TOOL0 terminal as serial interface.

When external devices are connected to those terminals, be cautious not to inhibit communication. Keep in mind that external devices may malfunction due to communication data with the StickWriter.

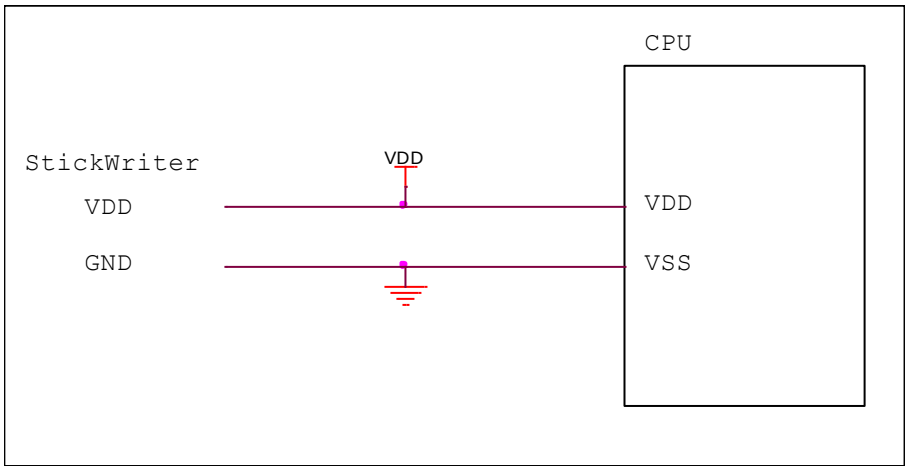
SI/RxD/DGDATA Connect to TOOL0



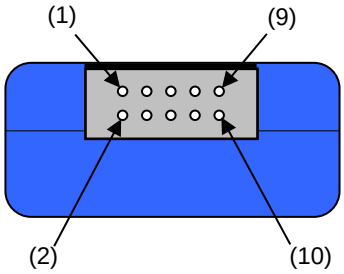
(3) VDD, GND

Connect the power supply of the target device.

Connect EVDD for the microcomputer with the terminal EVDD.



5.8.3 Target I/F Connector



Pin No	StickWriter Signal Name	Connect to Target Device
(1)	GND	VSS
(2)	$\overline{RESET}$	$\overline{RESET}$
(3)	SI/RxD/DGDATA	TOOL0
(4)	VDD	EVDD(VDD)
(5)	SO/TxD	
(6)	FLMD0	
(7)	SCK	
(8)	H/S	
(9)	CLK/DGCLK	
(10)	Reserved	

StickWriter Side Connector Type No:

- DF11-10DP-2DS (Hirose Electronics)

Appropriate Target Side Connectors:

- SMT Type DF11CZ-10DS-2V
- DIP Type DF11-10DS-2DSA
- Insulation Displacement Socket DF11-10DS-2R26
- Clamping Socket DF11-10DS-2C

5.9 R32C Series

5.9.1 Setup Screen

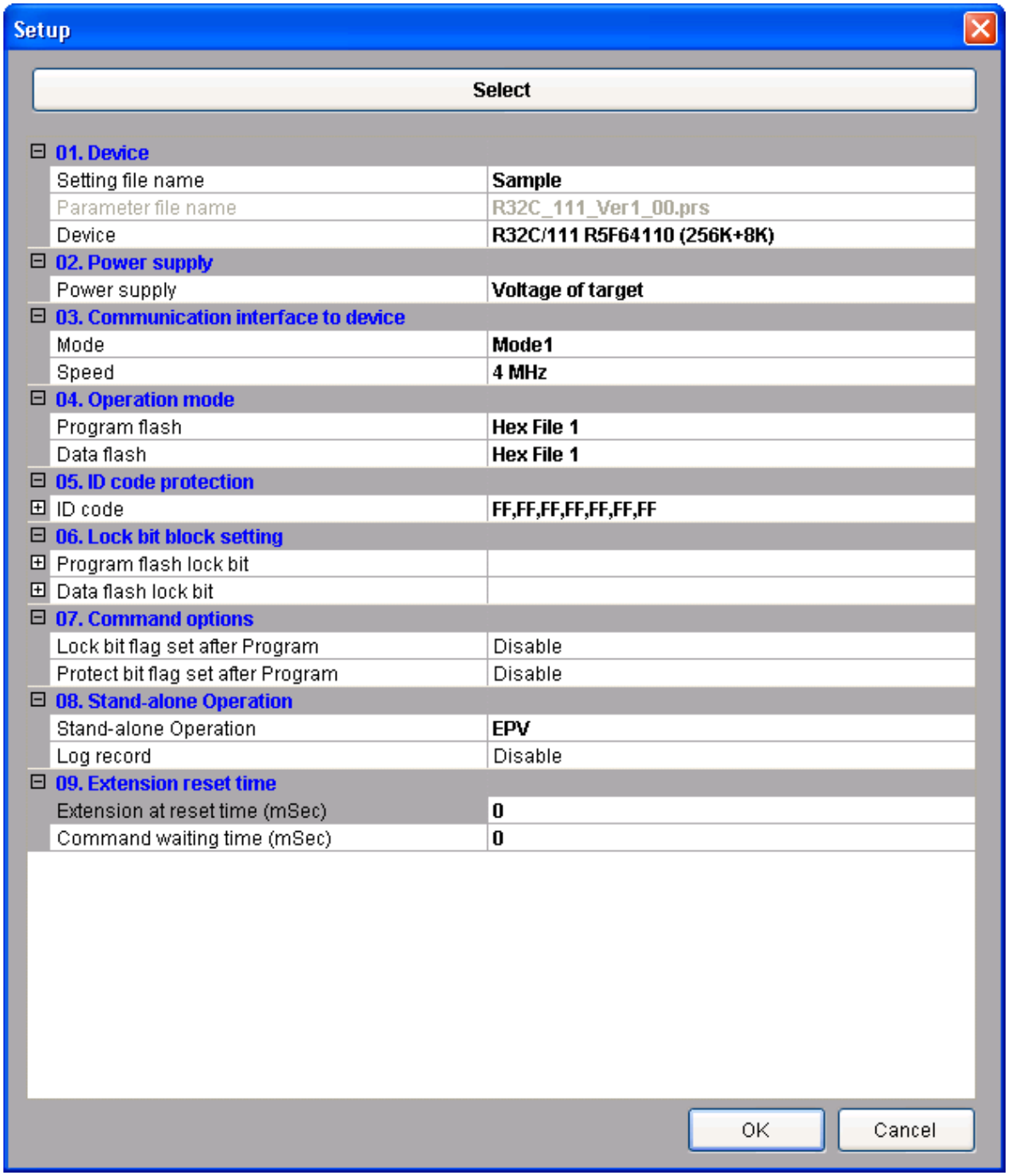


Fig 59

(1) Device

[Setting file name]

The information file name saved in StickWriter. You can change the file name here as well.

[Parameter file name]

The parameter file name with the settings such as memory size of the device, communication timing, and so on.

[Target]

The device used with this setting file. You can select a device.

(2) Power supply

[Power supply]

Setting the power supply of the target device.

Voltage of target: No power supplied from StickWriter. It uses the power from the target board.

3.3V Output: 3.3V output from StickWriter

5.0V Output: 5.0V output from StickWriter

(3) Communication interface to device

Displaying the communication method between the target device and StickWriter.

[Port]

Indicating the communication method with target device. You can select Mode1, Mode2. For more detail, please refer to the user's manual for the device.

[Speed]

Indicating the communication speed.

(4) Operation Mode

[Program flash]

Specifying the program HEX file number for writing.

[Data flash]

Specifying the program HEX file number for writing on data flash area. You can select the same file as Program flash.

(5) ID code protection

Displaying the ID code. Click ⊞ beside the "ID code" to expand it by 1Byte.

(6) Lock bit block setting

Setting the lock bit as the software protect function. Click ⊞ to change the setting. This is available if the target device supports it. For those device support lock bit, it makes the setting to "Disable" just before writing or erasing is performed, and makes the setting to "Enable" after the command is completed. It set the lock bit when it writes with "Lock bit set after Program" enabled.

(7) Command options

Setting the options for a target device command.

[Lock bit flag set after Program] It set the lock bit after the writing by "Program" command is completed.

[Protect bit flag set after Program] It set the protect bit after the writing by "Program"

command is completed.

(8) Stand-alone Operation

Specifying performing command when it is a stand-alone operation without PC connected.

When you perform a stand-alone operation, make sure that you select "Target voltage" for the "Power supply" setting.

[Stand-alone Operation]

EPV: Performing "EPV" command.

Verify Only: Performing "Verify" command.

Erase Only: Performing "Erase" command.

Blank Check Only: Performing "Blank" command.

No operation: Performing no command.

[Log record]

Enable: Recording the number of devices written, the number of failed devices and error numbers for the failure (the last 32 histories) during stand-alone operation in the EEPROM built into StickWriter. The record details can be confirmed in the "Logging" of the "Device" menu.

Disable: No log will be recorded.

(9) Extension reset time

If target device is reset with reset IC, set the time that align to the reset IC.

[Extension at reset time (mSec)]

Specifying the extending reset time. (Maximum 4 seconds)

[Command waiting time (mSec)]

Specifying the extended time before sending commands after resetting (Maximum 4 seconds). Basically, you do not need to set this.

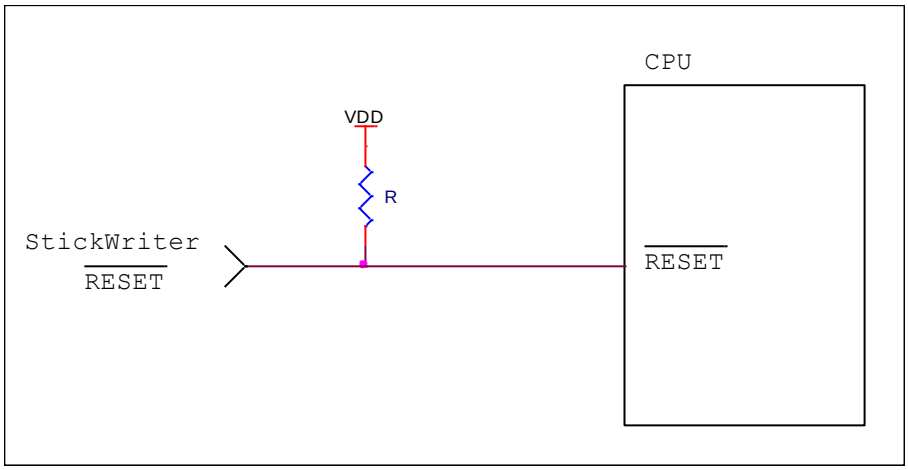
5.9.2 Target I/F

Check the user's manual of the target device as well.

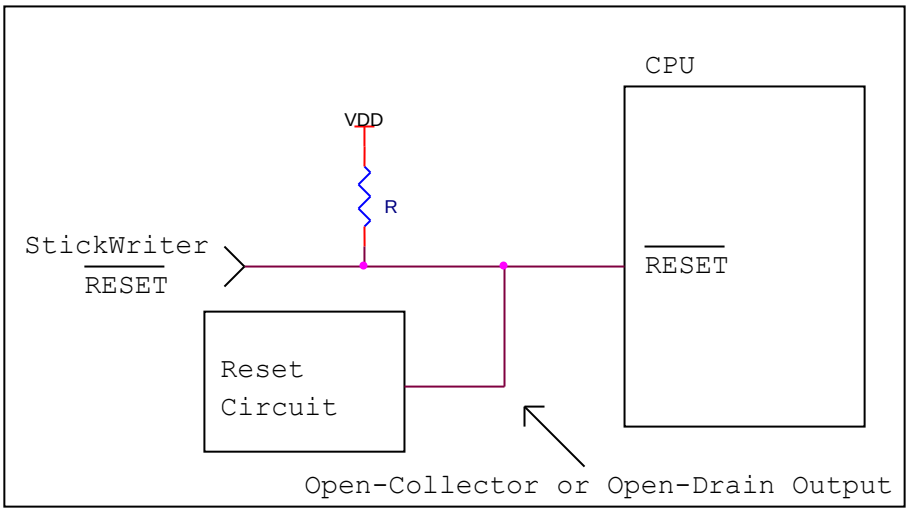
(1) RESET

When StickWriter resets the target CPU, it outputs “Low”.
When StickWriter cancels the reset, it changes to “Hi-Z”. Please connect pull-up resistor

When there is no external reset circuit



When there is an external reset circuit



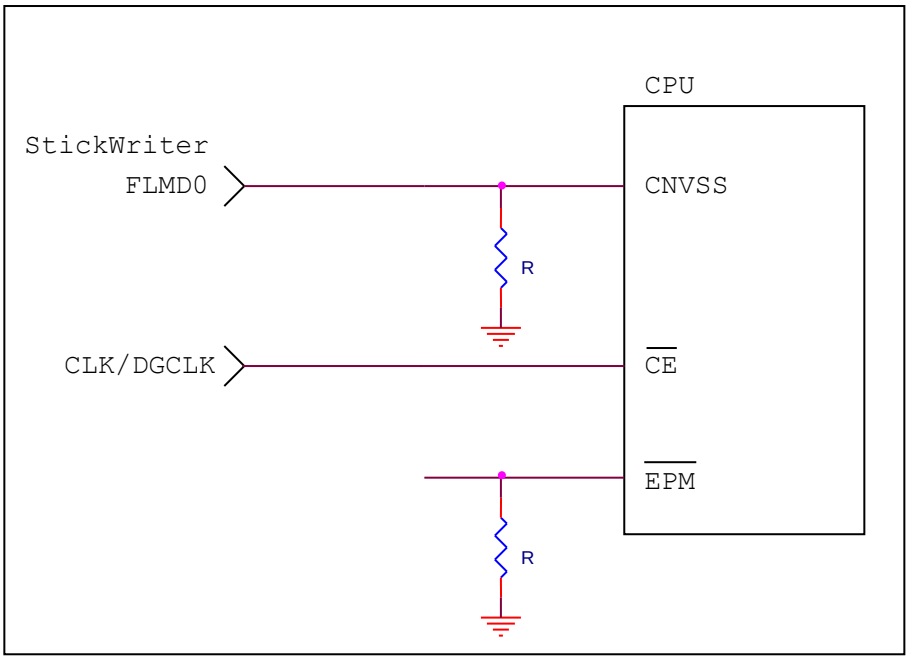
Set the external reset circuit as Open-Collector or Open-Drain output. Set the Wired OR Connection with the reset signal from StickWriter. Make sure that reset will not occur while writing to the target CPU from StickWriter. Be cautious when using an external watch-dog timer.

(2) CNVSS, CE, EPM

A signal is output from StickWriter to set the Standard Serial I/O mode.
If the target device has the terminal for setting Standard Serial I/O mode, you do not need to connect this. Keep the Standard Serial I/O mode while StickWriter is connected.

FLMD0	Connect to CNVSS
	Output "High" from StickWriter
CLK/DGCLK	Connect to CE
	Output "High" from StickWriter

If the target device has EPM terminal, keep the "Low" level by processing pull-down and such while StickWriter is connected.

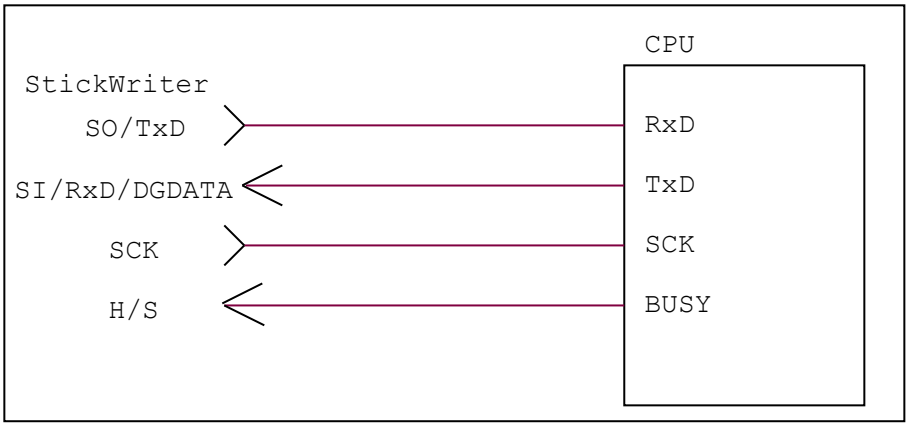


(3) CSI (Standard Serial I/O Mode 1)

Connect when you use the CSI terminal as serial interface.

When external devices are connected to those terminals, be cautious not to inhibit communication. Keep in mind that external devices may malfunction due to communication data with the StickWriter.

SO/TxD	Connect to RxD
SI/RxD/DGDATA	Connect to TxD
SCK	Connect to SCLK
H/S	Connect to BUSY



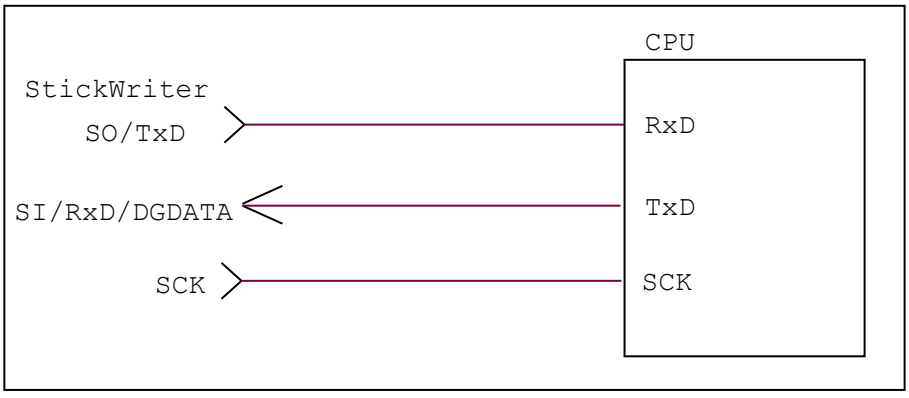
(4) UART (Standard Serial I/O Mode 2)

Connect when you use the UART terminal as serial interface.

When external devices are connected to those terminals, be cautious not to inhibit communication. Keep in mind that external devices may malfunction due to communication data with the StickWriter.

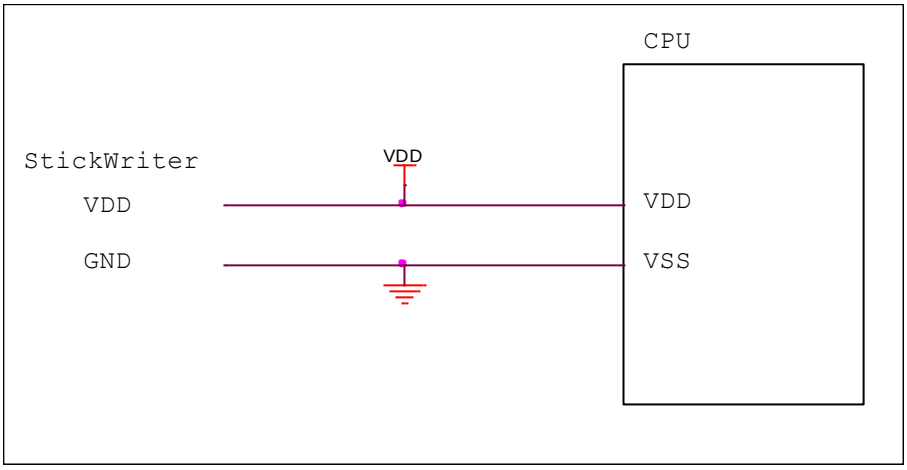
SO/TxD	Connect to RxD
SI/RxD/DGDATA	Connect to TxD

The SCK terminal should perform pull down processing, and during StickWriter connection, please maintain a "Low" level or connect it to SCK of StickWriter.

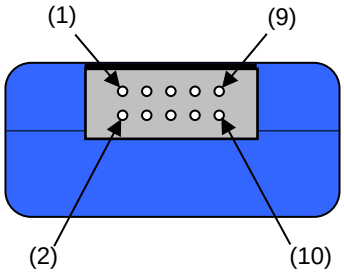


(5) VDD, GND

Connect the power supply of the target device.



5.9.3 Target I/F Connector



Pin No	StickWriter Signal Name	Connect to Target Device
(1)	GND	VSS
(2)	$\overline{RESET}$	$\overline{RESET}$
(3)	SI/RxD/DGDATA	TXD
(4)	VDD	VCC
(5)	SO/TxD	RXD
(6)	FLMD0	CNVSS
(7)	SCK	SCLK
(8)	H/S	BUSY
(9)	CLK/DGCLK	$\overline{CE}$
(10)	Reserved	

Please fix EPM to a Low level on a target board.

StickWriter Side Connector Type No:

- DF11-10DP-2DS (Hirose Electronics)

Appropriate Target Side Connectors:

- SMT Type DF11CZ-10DS-2V
- DIP Type DF11-10DS-2DSA
- Insulation Displacement Socket DF11-10DS-2R26
- Clamping Socket DF11-10DS-2C

Chapter 6 Stand-alone Operation

StickWriter can perform stand-alone operation without using PC when writing.

<Preparation for stand-alone operation>

1. Set followings at "Setup" screen.
   - Set "Power supply" to "Target voltage"
   - Set "Stand-alone Operation" to "EPV"
   - Set others as needed
2. Connect StickWriter to the target board.
3. Turn on the target board.
4. Perform "EPV" using GUI.
5. Confirm successfully written.
6. Turn off the target board.
7. Disconnect StickWriter from the target board and exit the GUI.
8. Disconnect StickWriter from PC.
9. Set Power switch on StickWriter to "T".

<Actual writing operation>

1. Connect StickWriter to the target board.
2. Turn on the target board.
   - Power will be supplied to the StickWriter, and it will start writing. (Power LED (blue) will blink.)
3. Confirm that the blink of Power LED changes to lighting without blinking and Success LED (blue) will be turned on. The writing is successfully completed.
4. Turn off the target board.

When the writing is failed, Fail LED (red) will blink.
If it works with GUI but not with stand-alone, the reason for the error is about reset IC in many cases.
Adjust the "Extension at reset time (uSec)".
Target voltage for stand-alone operation requires higher or equal to 3.3V.
When the voltage of the target is less than 3.3V, it is necessary to supply power by USB.

Chapter 7 Additional Licenses

When first purchasing StickWriter, only one series of parameter files can be used; however, by purchasing additional licenses, additional parameter files can be added.

License Purchase Flow	
1. Customer	Purchase order product type “SW-AD01” for additional licenses.
↓	
2. Us	Deliver a “License Card” with a password.
↓	
3. Customer	Send e-mail including the password and StickWriter serial number to us. - The e-mail address is written on the license card. - The StickWriter serial number can be confirmed in "About" in the "Help" menu. Copy the information at "Serial No."
↓	
4. Us	Confirm the password and reply with an authorization code enabling the addition of any 1 series of parameter files (within 2 business days).
↓	
5. Customer	Enter the authorization code in “Authorization Code” in the “Programmer” menu. Download the new parameter file to StickWriter from “Parameter File Download” in the "File" menu. - The new parameter files can be downloaded from our website. (http://www.tessera.co.jp)