

Universal Probe

Software Users Manual

Firmware Selector

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No. E090964-03

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NOTES

Thank you for purchasing the “Universal Probe” from Sohwa & Sophia Technologies. Correctly understand notes and other information in this document before using this product.

1. A permission from the Japanese government is required when exporting the product and technologies described in this document to which the “Foreign Exchange and Foreign Trade Act” applies or bringing them out of Japan.
2. The product described in this document is intended to be used in general electronics such as business equipment, communication equipment, measurement equipment, or home appliances. Do not use this product in special-purpose equipment such as automobile, railway, marine, or aerospace equipment, transportation equipment, combustion equipment, safety devices, medical equipment, infrastructure equipment, or nuclear power that requires special quality and reliability and of which failure or malfunction may directly threaten human lives or injure human bodies. The customer should be responsible for using this product in such equipment.
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4. The contents of this document are subject to changes without notice.
5. The specifications in this document may lead to different results depending on your environment or measurement conditions.
6. Note that we bear no responsibility for consequence of operating this product.
7. “Operating Precautions” in this document are important notes to prevent damage on users and third parties as well as assets and to use the product safely and correctly. Be sure to read these precautions before using this product.
8. The product names and trade names in this document are trademarks or registered trademarks of respective owners.



Contact information can be obtained on the website of **Sohwa & Sophia Technologies Inc.**
URL > <http://www.ss-technologies.co.jp/en/index.html>

Operating Precautions



Failure to observe the following precautions may lead to human death or severe injury.



Do

Avoid supplying voltage out of the range specified in the specifications of this product. Supplying the voltage out of the range may cause damage or fire.



Do

When using the target equipped with the ground terminal, ensure that the ground terminals of the target and peripheral equipment are connected. Failure to do so may cause an equipment failure or electric shock.
Avoid connecting the ground terminal to the gas pipe. This causes a fire or explosion.



Don't

Do not transport this product with equipment connected.
In particular, hold the plug when removing or inserting the cable. Failure to do so may damage the cable, causing a fire or electric shock.



Don't

Observe the following points when handling the cable. Do not damage, process, forcibly bend, twist, pull, putting any object on or heat the cable, moving the cable close to the heating device, or touch the cable with a wet hand.
Failure to observe these precautions may cause a fire or electric shock.
If the cable is damaged, stop using it.



Don't

When you hear thunders, do not touch the power plug. This causes an electric shock.
If the product seems to be damaged by lightning strike, stop using it.



Don't

Do not let a staple, clip or other metal item enter into the product. This may cause a fire or failure.



Don't

Do not use or leave the product in direct sunlight, near heating devices, in an extremely hot or cold environment, under hard vibrations, in dusty area with a large amount of metal dust or oily dust, or noisy area full of spike noise.
Do not apply a strong shock to the product.



Do not

disassemble

Do not disassemble, alter or repair the product. This may cause a fire or electric shock.



No wetting

Do not use the product at a place where there is liquid or at a humid place such as bathroom or in vicinity to glasses.
This may cause an electric shock.
If liquid enters into this product, immediately turn it off and stop using it.



Caution

Touching the energized product for a long time may cause low-temperature burns.
Do not use this product covering with comforter or other cloth.



Pull out the plug.

Immediately turn the power off if unusual smell, noise, smoke or fire is detected or if the product is or may be damaged due to a fall or strong shock. Continuing to use it may lead to a serious accident. Stop using the product.

Abbreviations, Terms and Conventions

This section describes the abbreviations, terms and conventions used in this document.

- About numeric values ... All the numeric values are positive unless otherwise specified.
- K (capital letter) ... Represents $2^{10}=1024$. (Example: 16K=16384)
- k (small letter) ... Represents 1000. (Example: 1kHz=1000Hz)
- [xxxxx] ... Represents the window title, xxxxx.
- <xxxxx> ... Represents the item named xxxxx in the window.

The annotations and notes used in this document are as shown in Figure 1.

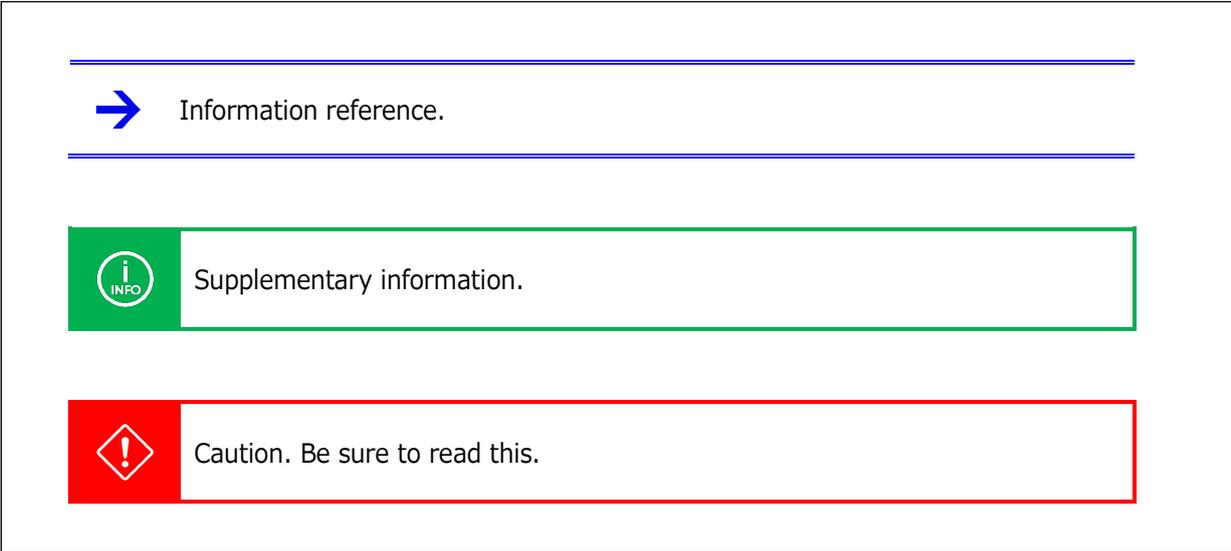


Figure 1

The abbreviations and terms are as shown in Table 1.

Table 1

Abbreviations and terms	Description
This product	Universal Probe including accessories.
Probe	Universal Probe itself.
This software	Firmware Selector.
Firmware	Control application that operates on the Universal Probe.
IDE	Integrated development environment.
CMSIS-DAP	Standards for connecting the integrated development environment and the probe.
S/N	Stands for the serial number. Probe ID.
FW	Stands for the firmware.
Ver	Stands for the version. Version number of firmware.
ARM Writer	JTAG memory writer for ARM. (Option software)
SPI Writer	Memory writer for SPI connection. (Option software)
LA	Stands for Logic Analyzer. (Option software)
PG	Stands for Pattern Generator. (Option software)
License Code	Code to add the functions that can be used in this device. This code is required for each function.
Host PC	PC where this software runs.
N/A	Stands for not available. This abbreviation indicates that the item cannot be used.

1. Overview of This Software

This chapter provides an overview of this software.

This software is used to change or update the firmware for the Universal Probe.

The following two types of firmware are provided for the Universal Probe.

Table 2

Firmware	Description
Standard configuration	Firmware installed when the Universal Probe is shipped.
CMSIS-DAP configuration	Firmware used to connect to the IDE. The CMSIS-DAP standards are used for this connection.

This software can be used to change respective firmware or update the version of CMSIS-DAP firmware for the probe connected to the host PC.

1.1. System Requirements

The following system is required to run this software.

- PC running Microsoft Windows 7 or later
- CPU: 1GHz or faster (depending on the requirements of the used OS)
- Memory: 1GB or larger (depending on the requirements of the used OS)
- HDD: 500MB or larger free hard disk space
- OS : Windows 7 or later (32bit or 64bit versions are supported)
- One or more empty USB 2.0 ports
- .NET Framework 4.5 or higher.

1.2. Characteristics

This software has the following characteristics.

- Lists the serial numbers, firmware types, and versions of the probes connected to the host PC.
- Displays the registration status of license code for the selected probe.
- Changes the firmware for the selected probe.
- Updates the CMSIS-DAP firmware for the selected probe.
- Manages the downloaded CMSIS-DAP firmware.

1.3. Turning On or Off the Power

1.3.1. Turning On the Power

Turning on the power with the following procedure:

- 1) Connect the USB cable of the probe.
- 2) Start this software, and do such as the changing of firmware.

1.3.2. Turning Off the Power

Turning off the power with the following procedure:

- 1) Exit this software.
- 2) Disconnect the USB cable of the probe.

 For details of the hardware specifications of probe, refer to the "Hardware Users Manual."

2. How to Operate

This chapter explains how to operate this software.

2.1. Starting This Software

This section describes how to start this software.

2.1.1. Starting Operations

Click "All Programs" → "Universal Probe" → "Firmware Selector" from the "Start" menu.

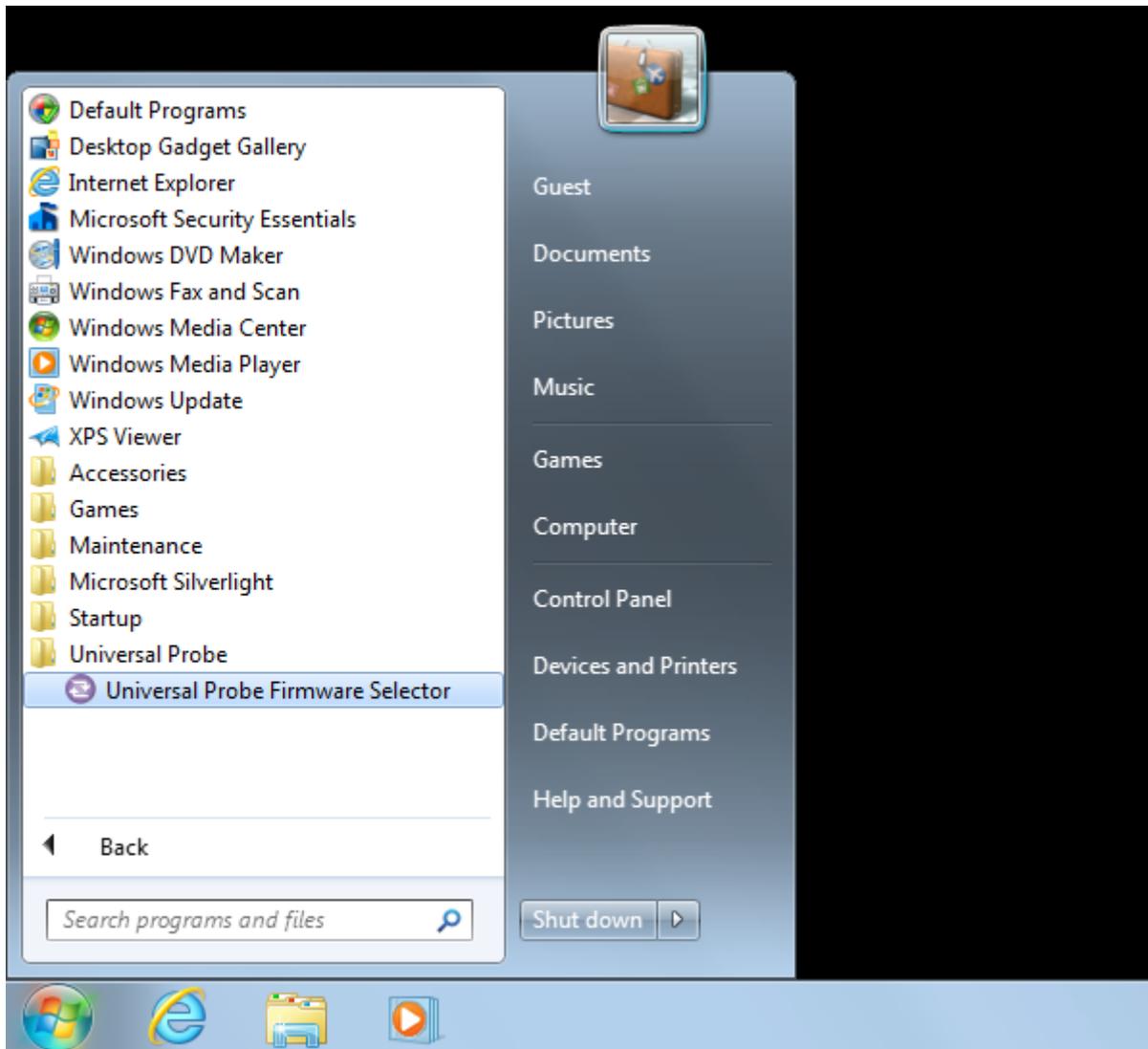


Figure 2

These operations start this software as shown in the figure below.

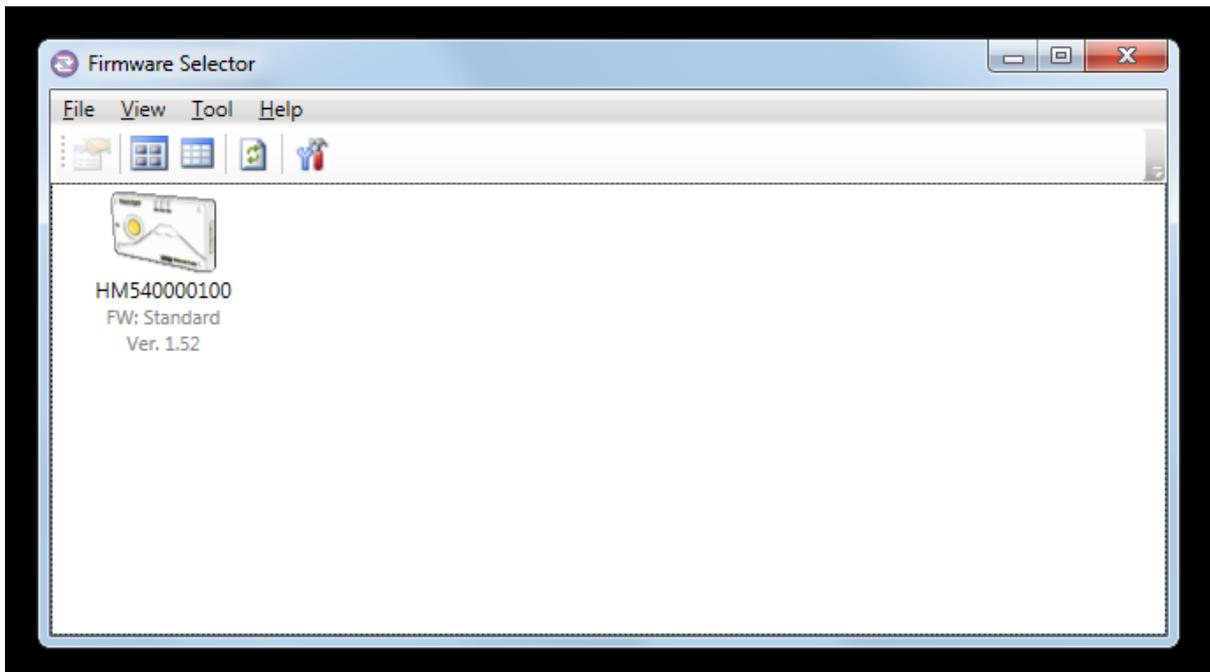


Figure 3

When this software starts, the probes connected to the host PC are displayed.

2.2. Exiting This Software

This section describes how to exit this software.

2.2.1. When Using the Application Menu

Select the following menu items to exit this software.

Tool button	Operation on the menu bar	Shortcut key
---	File → Exit	Alt + F4

2.2.2. When Using the Button

Click the X button at the right top of the window.

2.2.3. When Using the System Menu

Double-click the icon at the left top of the window. Or, click at the left top of the window, right-click the caption, or press the Alt + Space keys to display the system menu and select "Close."

2.3. Changing or Updating Firmware

This section describes how to change and update firmware in this software.

2.3.1. Main Window

The main window of this software is shown below.

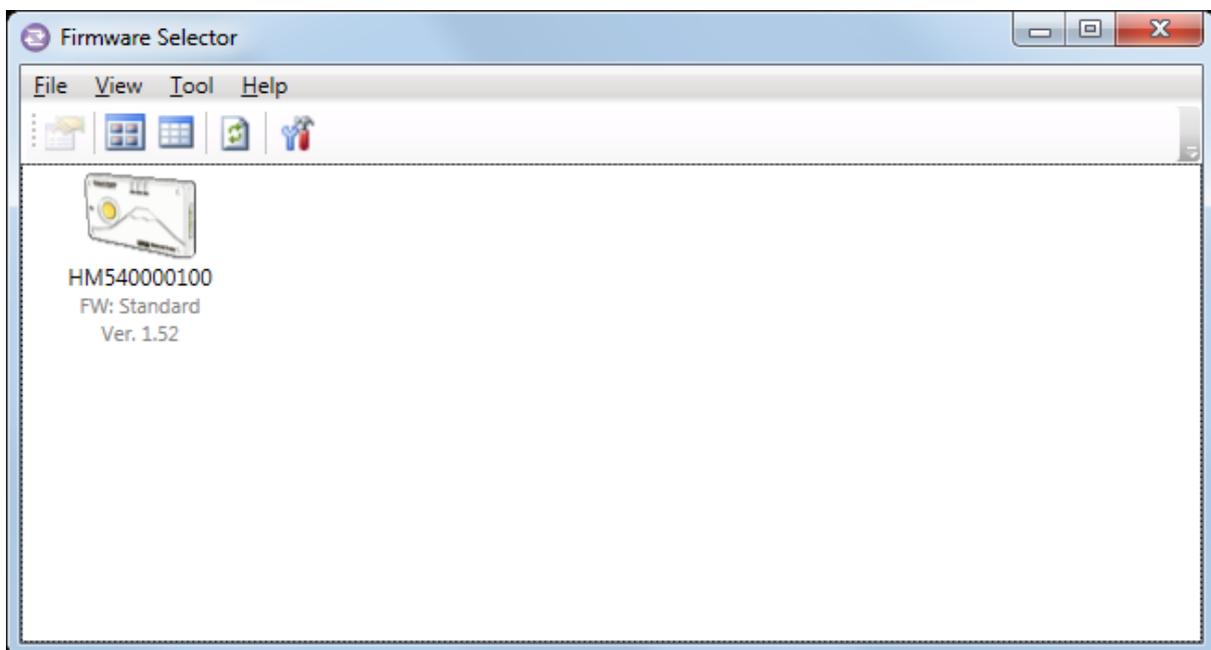


Figure 4

The serial numbers, firmware types, and versions of the Universal Probes connected to the host PC are displayed when the software starts.

2.3.2. Writing CMSIS-DAP Firmware

To change the standard firmware to the CMSIS-DAP firmware, select the Universal Probe for which firmware is changed and click the following menu bar items.

Tool button	Operation on the menu bar	Shortcut key
---	Tools → Write CMSIS-DAP Firmware	---

Or, click the following context menu item.

Tool button	Operation on the context menu	Shortcut key
---	Write CMSIS-DAP Firmware	---

The [Select CMSIS-DAP Firmware] window opens.

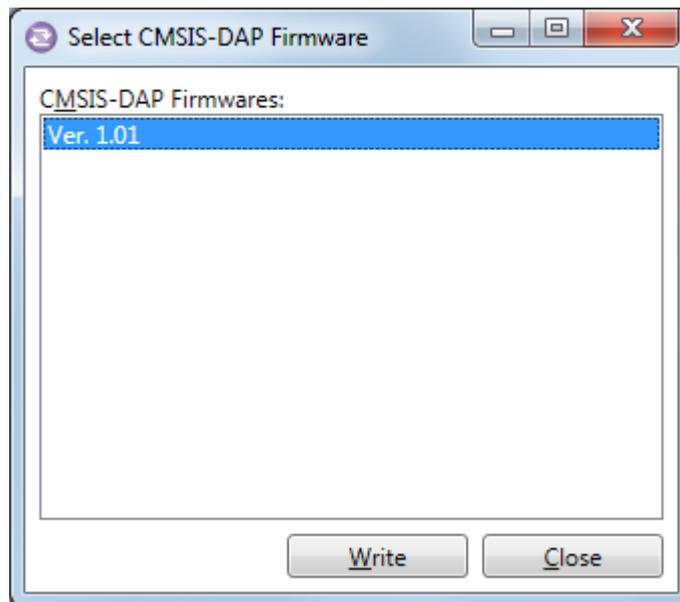


Figure 5

Select the CMSIS-DAP firmware to be written into the Universal Probe from the <CMSIS-DAP firmwares> list and click button. The confirmation message is displayed.

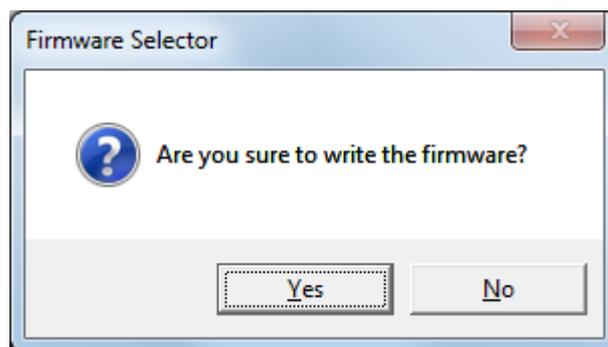


Figure 6

Clicking button displays the [Writing Firmware] window and writes the selected CMSIS-DAP firmware into the Universal Probe.

 The license code must be registered to change the standard firmware to the CMSIS-DAP firmware. If the license code is not registered in the probe, register it by referring to "Registering the license code."

The progress is displayed while firmware is being written.

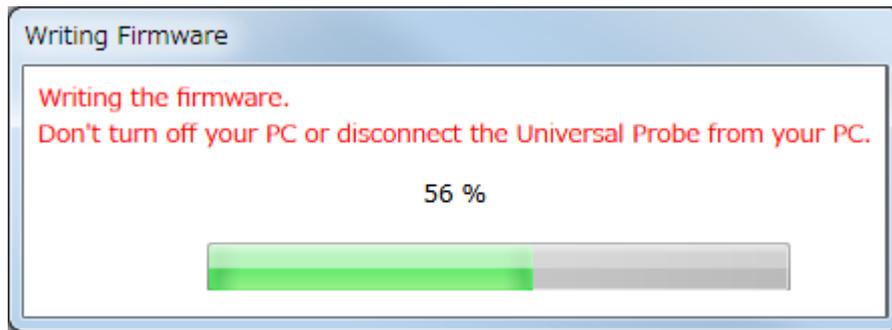


Figure 7

 Do not turn off the PC or remove the Universal Probe while firmware is being written.

The probe list is updated when the firmware is completely written.

 If the probe for which the new firmware was written is not displayed in the list after the firmware is completely written, remove the probe from the host PC, connect it again, and then update the list. Please refer to "2.6. Updating Probe Information." for details.

● **Registering the license code**

If the license code for the charge-free software is not registered in the probe, the [License Registration] window is displayed when the CMSIS-DAP firmware is written.

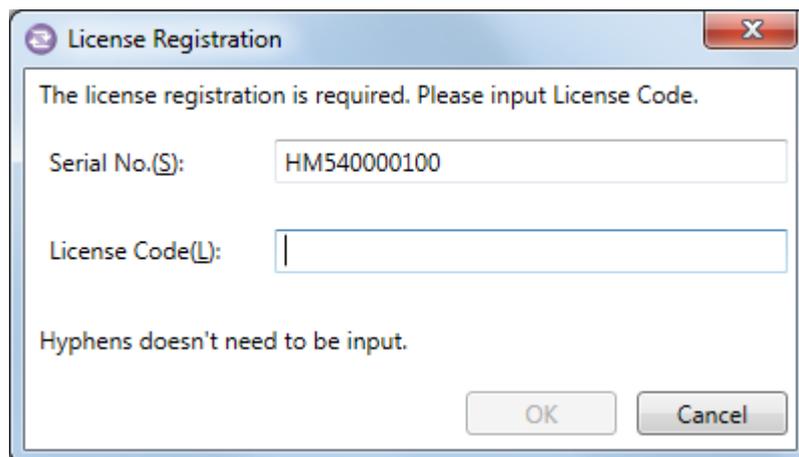


Figure 8

Enter the license code in <License Code>. When the license code is registered, the CMSIS-DAP firmware is written.

● **Notes on entering the license code**

Enter exactly the same license code as the received information.



If the license code is rejected even though it matches the code in the received email, contact us.

● **Error display list**

Table 3

Display	Meaning	Action
Invalid license code.	Displayed when the license code cannot be analyzed due to invalid format of license code or for other reasons.	Check the email that includes the license and enter it again.
The license code does not match the serial number.	Displayed when the S/N of the selected probe does not match the S/N of the probe to which the license code applies.	Check the email that includes the license code and enter it again.
The license code is not for CMSIS-DAP.	Displayed when the license code does not apply to charge-free software.	Check the email that includes the license code and enter it again.
License information cannot be obtained from the probe. The probe may not be working.	Displayed when information required for license authentication cannot be obtained from the probe.	Reconnect the probe and the host PC (by removing and reinserting it from and to the USB port) and restart this software. Contact us if this message continues to appear.



It is also possible to check whether the license code is registered or not. Please refer to "2.5. Viewing the Registration Status of License Code." for detail.

2.3.3. Updating CMSIS-DAP Firmware

To change the CMSIS-DAP firmware written in the Universal Probe to another version of CMSIS-DAP firmware, use the same operation as the one described in "2.3.2. Writing CMSIS-DAP Firmware."

 [Refer to "2.3.2. Writing CMSIS-DAP Firmware."](#)



The CMSIS-DAP firmware used for update must be registered in this software. Please refer to "2.4.1. Adding CMSIS-DAP Firmware." for details.

2.3.4. Writing Standard Firmware

To change the CMSIS-DAP firmware to the standard firmware, select the Universal Probe for which firmware is changed and click the following menu bar items.

Tool button	Operation on the menu bar	Shortcut key
---	Tools → Write Standard Firmware	---

Or, click the following context menu item.

Tool button	Operation on the context menu	Shortcut key
---	Write Standard Firmware	---

The [Select Standard Firmware] window opens.

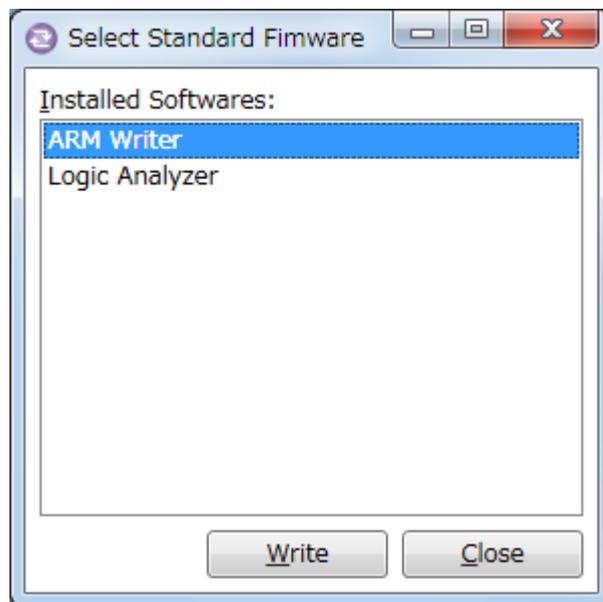


Figure 9

Select the software where the standard firmware to be written into the Universal Probe is located from the <Installed Softwares> list and click button. The confirmation message is displayed.

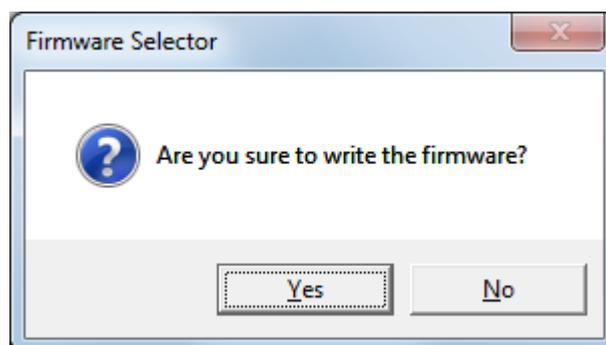


Figure 10

Clicking button displays the [Writing Firmware] window and writes the standard firmware located in the selected installed software into the Universal Probe.

The progress is displayed while firmware is being written.

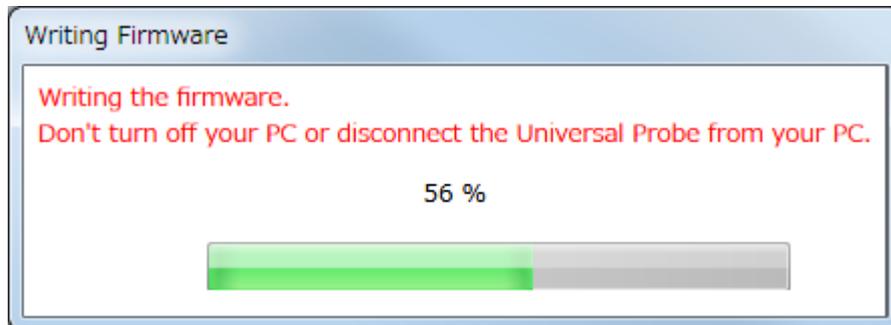


Figure 11



Do not turn off the PC or remove the Universal Probe while firmware is being written.

The probe list is updated when the firmware is completely written.



If the probe for which the new firmware was written is not displayed in the list after the firmware is completely written, remove the probe from the host PC, connect it again, and then update the list.
Please refer to "2.6. Updating Probe Information." for details.



Because the standard firmware depends on the version of respective software for the Universal Probe, the version optimal to respective software is installed with the software.
If a different version of standard firmware is written when the software starts, the firmware installed with the started software will be written.

Usually, the rewriting of the firmware is necessary, it is only when you are using the CMSIS-DAP function. If you want to use in other than the CMSIS-DAP, it rewrites automatically to the standard firmware at the time of each software start-up.

2.4. Managing CMSIS-DAP Firmware

This section describes how to manage the CMSIS-DAP firmware used to change or update this software. If the version of CMSIS-DAP firmware is upgraded, the new CMSIS-DAP firmware can be downloaded from our Web site.

2.4.1. Adding CMSIS-DAP Firmware

Click the following toolbar button or menu bar items.

Tool button	Operation on the menu bar	Shortcut key
	Tools → Manage CMSIS-DAP Firmware	---

The [Manage CMSIS-DAP Firmware] window opens.

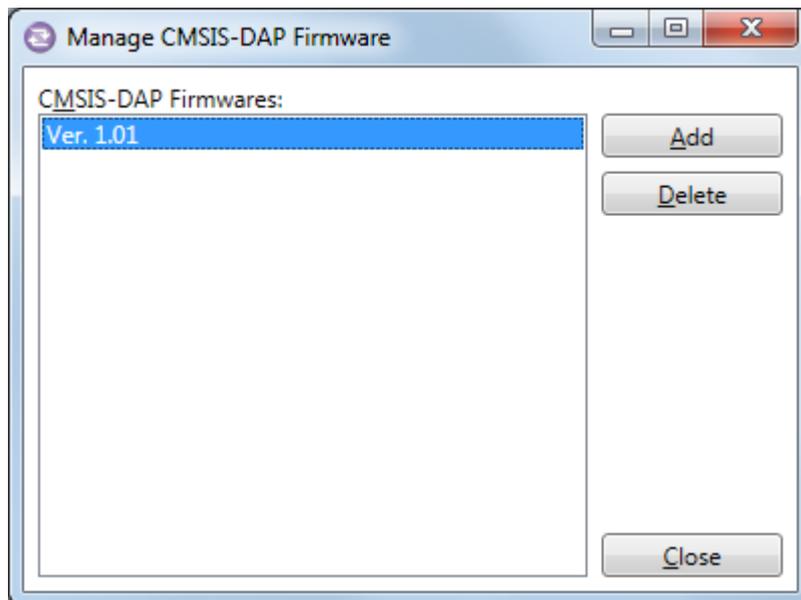


Figure 12

Clicking  button opens the [Open] window.

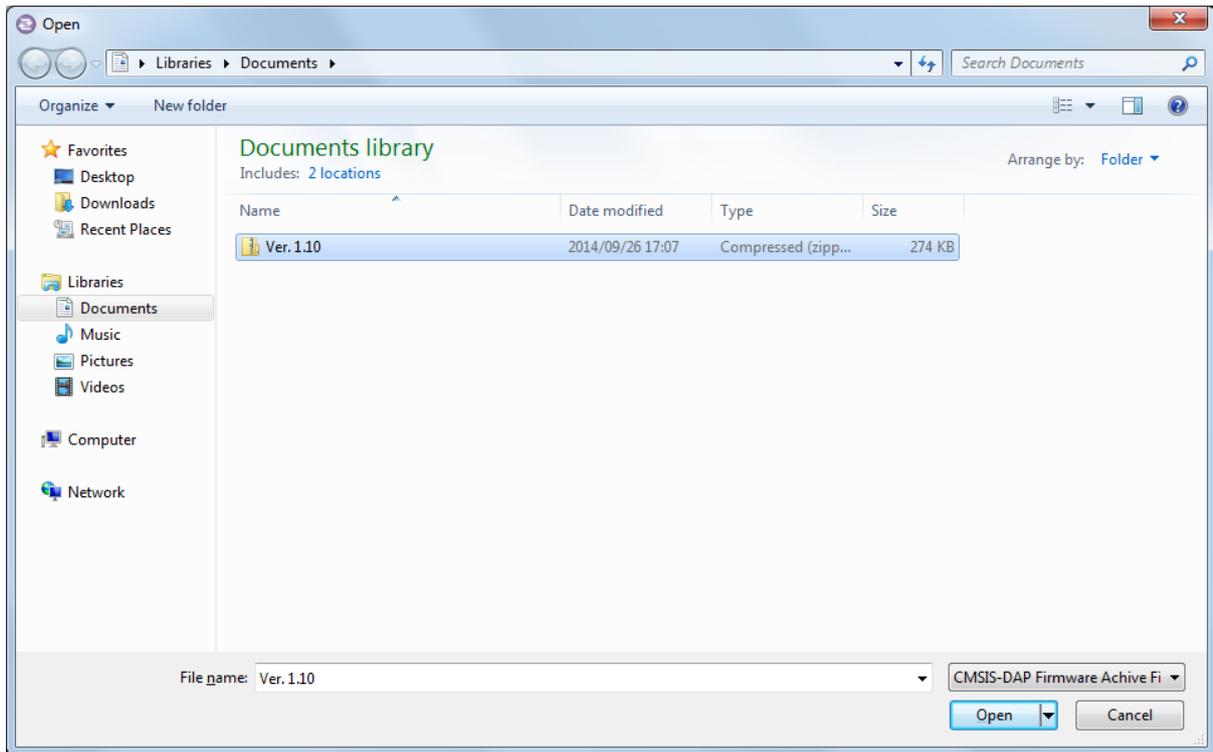


Figure 13

Select the downloaded CMSIS-DAP firmware file and click button to add it to the <CMSIS-DAP firmwares> list.

If the same version of CMSIS-DAP firmware is already registered, the confirmation message is displayed.

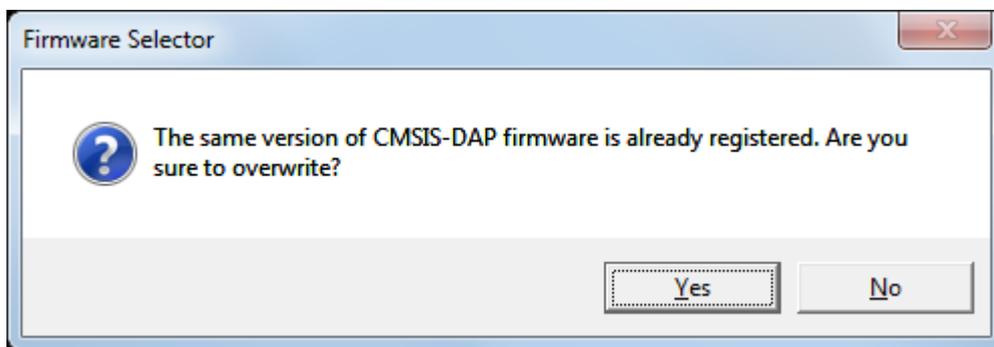


Figure 14

Clicking button overwrites the CMSIS-DAP firmware.

2.3.2. Deleting Registered CMSIS-DAP Firmware

Click the following toolbar button or menu bar items.

Tool button	Operation on the menu bar	Shortcut key
	Tools → Manage CMSIS-DAP Firmware	---

The [Manage CMSIS-DAP Firmware] window opens.

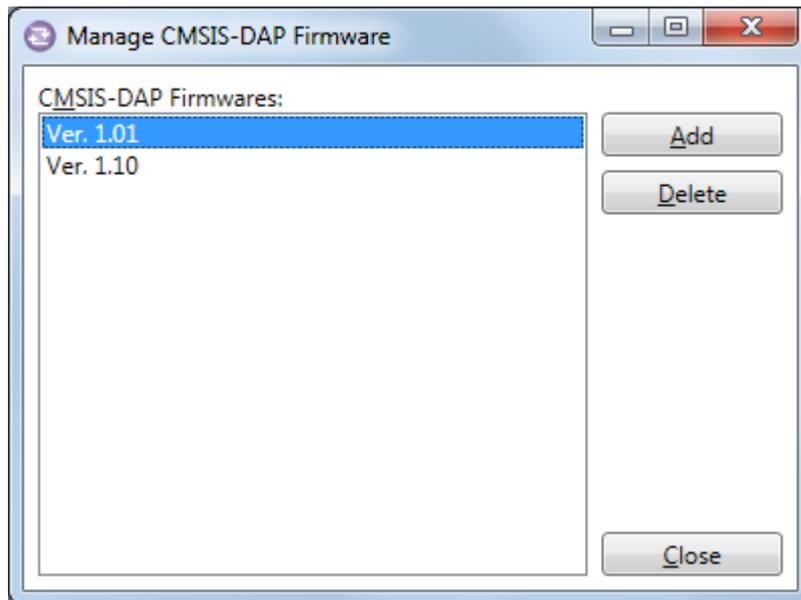


Figure 15

When you select the CMSIS-DAP firmware to be deleted and click button, the following confirmation message is displayed.

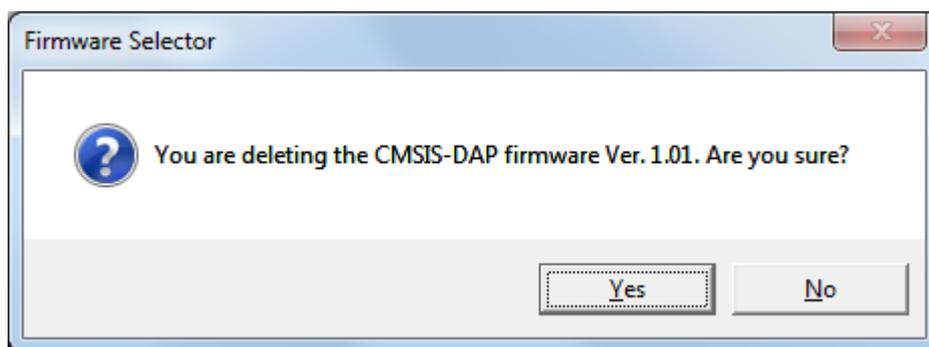


Figure 16

Clicking button deletes the CMSIS-DAP firmware.

2.5. Viewing the Registration Status of License Code

This section describes how to check the registration status of the license code registered in the probe in this software.



Only the license code for the charge-free software can be registered in this software. Register other license codes in respective software.

2.5.1. Checking the Registration Status of the License Code for the Selected Probe

Select the probe for which registration status of license code you want to check in the main window.

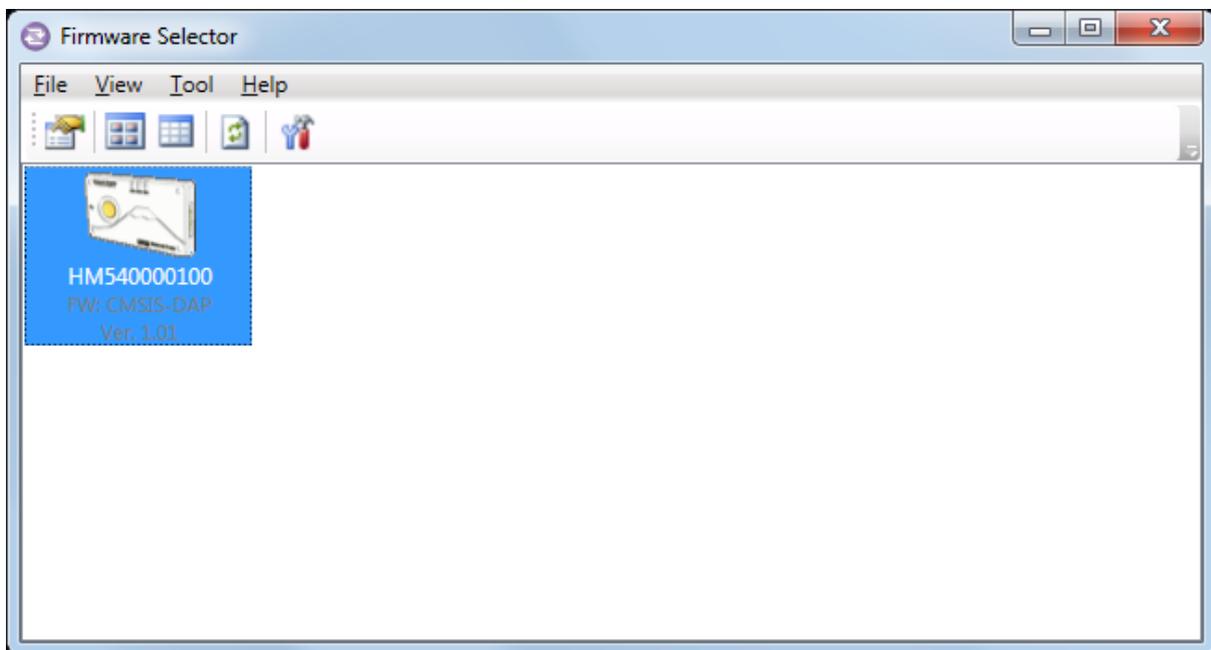


Figure 17

Select the probe and click the following toolbar button or menu bar items.

Tool button	Operation on the menu bar	Shortcut key
	File → Properties	---

Or, click the following context menu item.

Tool button	Operation on the context menu	Shortcut key
	Properties	---

The [Properties] window shown below opens.

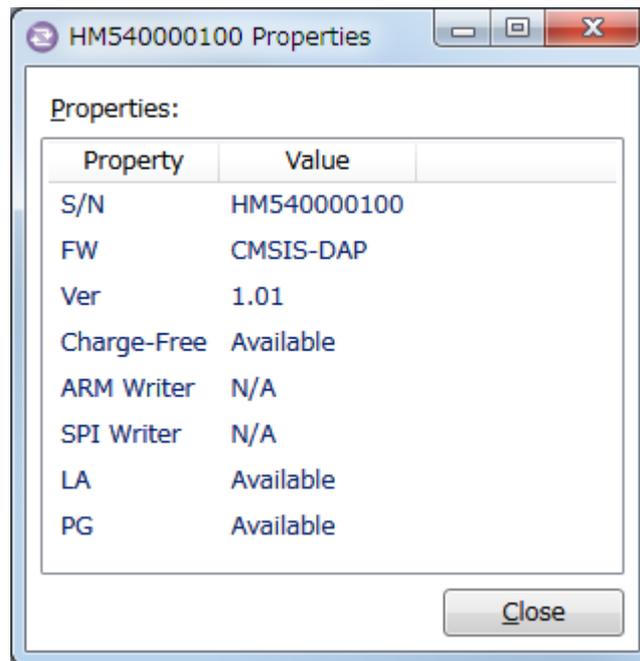


Figure 18

The properties for the selected probe is displayed in the <Properties> list. The items displayed in the <Property> and <Value> fields have the following meanings.

Table 4

Property	Description
S/N	Serial number of probe.
FW	Type of firmware currently written. "CMSIS-DAP" or "standard."
Ver	Version of firmware currently written.
Charge-Free	CMSIS-DAP firmware, Boundary-Scan Tool, Registration statuses of license codes for ARM Writer[Size-limited] and SPI Writer[Size-limited].
ARM Writer	Registration status of license code for ARM Writer.
SPI Writer	Registration status of license code for SPI Writer.
LA	Registration status of license code for Logic Analyzer.
PG	Registration status of license code for Pattern Generator.

Table 5

Value	Description
Available	The license code is registered. The software can be used.
N/A	The license code is not registered. The software cannot be used.
-	Data cannot be acquired due to an error or other cause.

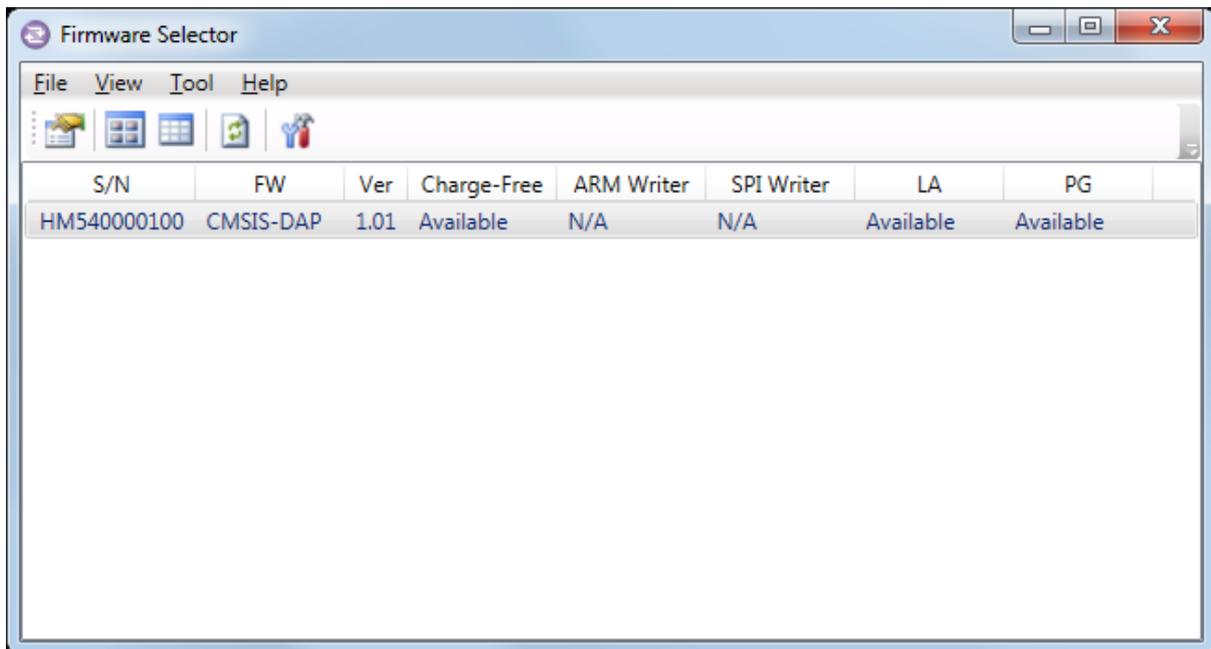
2.5.2. Listing the Registration Status of the License Code for the Probe

Change the main window to the detailed view to list the registration statuses of license codes for all the probes currently connected to the host PC.

Click the following toolbar button or menu bar items to switch to the list view.

Tool button	Operation on the menu bar	Shortcut key
	View → Details	---

The registration statuses of license codes for each probe are displayed in the table format as shown below.



S/N	FW	Ver	Charge-Free	ARM Writer	SPI Writer	LA	PG
HM540000100	CMSIS-DAP	1.01	Available	N/A	N/A	Available	Available

Figure 19

Each item in the table is described below.

Table 6

Item	Description
S/N	Serial number of probe.
FW	Type of firmware currently written. "CMSIS-DAP" or "standard."
Ver	Version of firmware currently written.
Charge-Free	CMSIS-DAP firmware, Boundary-Scan Tool, Registration statuses of license codes for ARM Writer[Size-limited] and SPI Writer[Size-limited].
ARM Writer	Registration status of license code for ARM Writer.
SPI Writer	Registration status of license code for SPI Writer.
LA	Registration status of license code for Logic Analyzer.
PG	Registration status of license code for Pattern Generator.

Click the following toolbar button or menu bar items to switch to the icon view.

Tool button	Operation on the menu bar	Shortcut key
	View → Icon	---

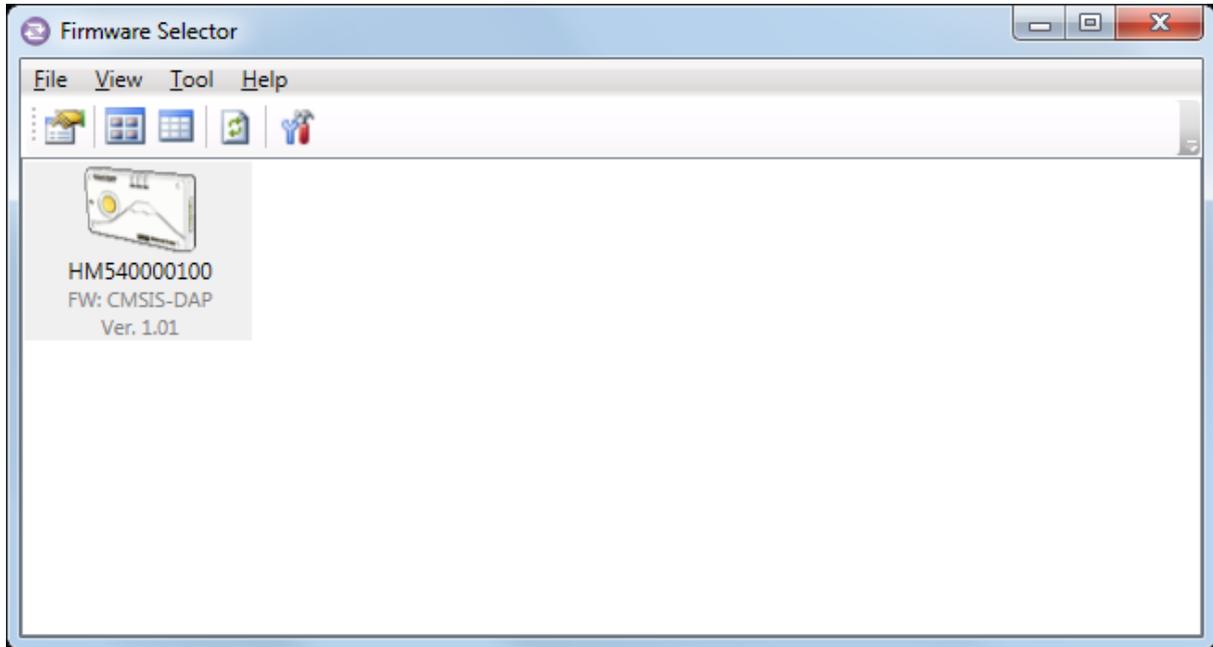


Figure 20

2.6. Updating Probe Information

This section describes how to update the probe display in this software.

Click the following menu bar items to update probe information.

Tool button	Operation on the menu bar	Shortcut key
---	View → Refresh	F5

2.7. Help

This section describes how to display the help and version information on this software.

2.7.1. Displaying Help

Click the following menu bar items to display the help.

Tool button	Operation on the menu bar	Shortcut key
---	Help → View Help	---

The page for Universal Probe in our web site is shown. Please download the manual and read it.

2.7.2. Displaying Version Information

Click the following menu bar items to display the version information on this software.

Tool button	Operation on the menu bar	Shortcut key
---	Help → About	---

The <Version Information> window is displayed.



Figure 21

Revision History

Ver. No.	Revision date	Content of revision
01	09/29/2014	Initial Release.
02	10/07/2014	Added "1.3. Turning On or Off the Power".
03	11/17/2014	Correction of typographical errors.

Manufacturer information



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