To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

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Renesas Electronics Corporation

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RENESAS

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User's Manual

Precautions on Using H8S/2378F E10A Emulator

User's Manual

Renesas Electronics
www.renesas.com

To all our customers

Regarding the change of names mentioned in the document, such as Hitachi Electric and Hitachi XX, to Renesas Technology Corp.

The semiconductor operations of Mitsubishi Electric and Hitachi were transferred to Renesas Technology Corporation on April 1st 2003. These operations include microcomputer, logic, analog and discrete devices, and memory chips other than DRAMs (flash memory, SRAMs etc.) Accordingly, although Hitachi, Hitachi, Ltd., Hitachi Semiconductors, and other Hitachi brand names are mentioned in the document, these names have in fact all been changed to Renesas Technology Corp. Thank you for your understanding. Except for our corporate trademark, logo and corporate statement, no changes whatsoever have been made to the contents of the document, and these changes do not constitute any alteration to the contents of the document itself.

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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

IMPORTANT INFORMATION

READ FIRST

• READ this user's manual before using this emulator product.

• KEEP the user's manual handy for future reference.

Do not attempt to use the emulator product until you fully understand its mechanism.

Emulator Product:

Throughout this document, the term "emulator product" shall be defined as the following products produced only by Renesas Technology Corp. excluding all subsidiary products.

- Emulator
- User system interface cable

The user system or a host computer is not included in this definition.

Purpose of the Emulator Product:

This emulator product is a software and hardware development tool for systems employing the Renesas microcomputer. This emulator product must only be used for the above purpose.

Limited Applications:

This emulator product is not authorized for use in MEDICAL, atomic energy, aeronautical or space technology applications without consent of the appropriate officer of a Renesas sales company. Such use includes, but is not limited to, use in life support systems. Buyers of this emulator product must notify the relevant Renesas sales offices before planning to use the product in such applications.

Improvement Policy:

Renesas Technology Corp. (including its subsidiaries, hereafter collectively referred to as Renesas) pursues a policy of continuing improvement in design, performance, and safety of the emulator product. Renesas reserves the right to change, wholly or partially, the specifications, design, user's manual, and other documentation at any time without notice.

Target User of the Emulator Product:

This emulator product should only be used by those who have carefully read and thoroughly understood the information and restrictions contained in the user's manual. Do not attempt to use the emulator product until you fully understand its mechanism.

It is highly recommended that first-time users be instructed by users that are well versed in the operation of the emulator product.

LIMITED WARRANTY

Renesas warrants its emulator products to be manufactured in accordance with published specifications and free from defects in material and/or workmanship. Renesas, at its option, will replace any emulator products returned intact to the factory, transportation charges prepaid, which Renesas, upon inspection, shall determine to be defective in material and/or workmanship. The foregoing shall constitute the sole remedy for any breach of Renesas's warranty. See the Renesas warranty booklet for details on the warranty period. This warranty extends only to you, the original Purchaser. It is not transferable to anyone who subsequently purchases the emulator product from you. Renesas is not liable for any claim made by a third party or made by you for a third party.

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The Warranty is Void in the Following Cases:

Renesas shall have no liability or legal responsibility for any problems caused by misuse, abuse, misapplication, neglect, improper handling, installation, repair or modifications of the emulator product without Renesas's prior written consent or any problems caused by the user system.

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Figures:

Some figures in this user's manual may show items different from your actual system.

Limited Anticipation of Danger:

Renesas cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this user's manual and on the emulator product are therefore not all inclusive. Therefore, you must use the emulator product safely at your own risk.

SAFETY PAGE

READ FIRST

• READ this user's manual before using this emulator product.

• <u>KEEP the user's manual handy for future reference.</u>

Do not attempt to use the emulator product until you fully understand its mechanism.

DEFINITION OF SIGNAL WORDS

This is the safety alert symbol. It is used to alert you to potential personal injury hazards.
Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER **DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION **CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION **CAUTION** used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTE emphasizes essential information.

⚠ WARNING

Observe the precautions listed below. Failure to do so will result in a FIRE HAZARD and will damage the user system and the emulator product or will result in PERSONAL INJURY.
The USER PROGRAM will be LOST.

1. **Do not repair or remodel the emulator product by yourself for electric shock prevention and quality assurance.**
2. **Always switch OFF the host computer and user system before connecting or disconnecting any CABLES or PARTS.**
3. **Confirm the correct direction of the connectors before connecting them in the user system side and in the user interface cable side.**
4. **If the PCI interface board for the E6000 or E8000 emulator (HS6000EIC01H) and the E10A emulator PCI card are mounted on the same host computer, the connectors may be illegally connected.**

READ this document before using this emulator.

KEEP the document handy for future reference.

1. Emulator Preparation Flow Chart

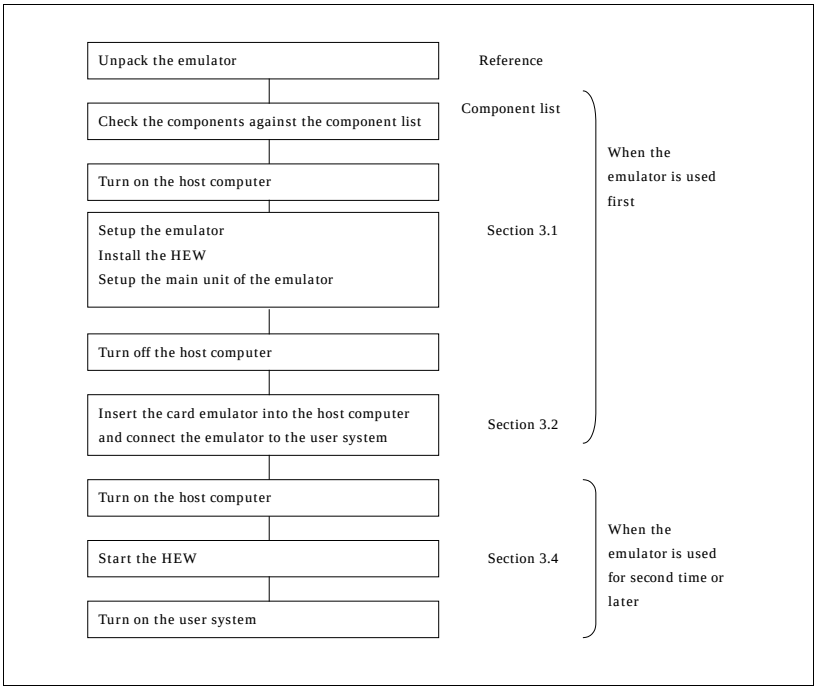

Figure 1 Emulator Preparation Flow Chart

2. Installing Emulator’s Software

Excute Setup.exe from the root directory of the CD-R.

Follow the cues given by the installation wizard to install the software.

Since hardware settings are also made during installation, the installation procedure differs according to the operating system or interface (PCI or PCMCIA) being used. Follow the installation steps carefully according to the environment you are using.

For the installation procedure, refer to Debugger part section 3.1, Installing Emulator’s Software, in the H8S family E10A Emulator user's manual provided by the CD-R.

3. System Check

When the software is executed, use the procedure below to check that the emulator is connected correctly. Here, use the workspace for a tutorial provided on the product.

1. Connect the emulator to the host computer.
2. Connect the user system interface cable to the connector of the emulator.
3. Connect the user system interface cable to the connector in the user system.
4. Turn on the host computer.
5. Select [Renesas High-performance Embedded Workshop 2] -> [High-performance Embedded Workshop 2] from the [Programs] in the [Start] menu.

6. The [Welcome!] dialog box is displayed.

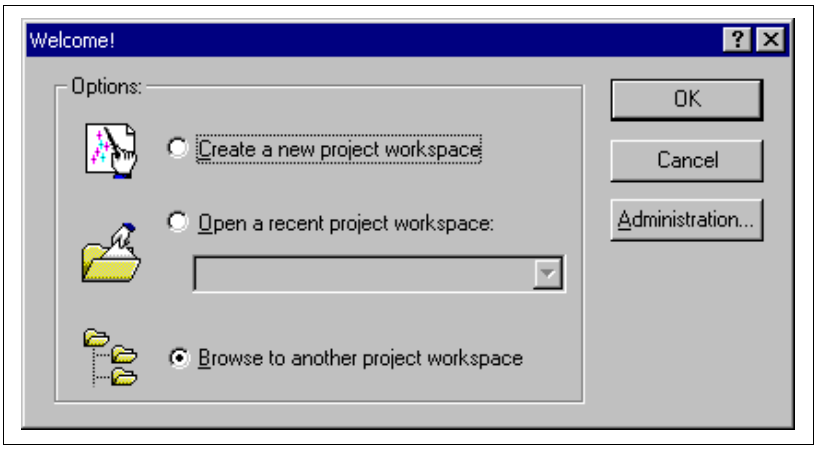

Figure 2 [Welcome!] Dialog Box

To use a workspace for the tutorial, select the [Browse to another project workspace] radio button and click the [OK] button.

When the [Open workspace] dialog box is opened, specify the following directory:
<Hew2 installation directory>\Tools\Renesas\DebugComp\Platform\E10A\2378\Tutorial

After the directory has been specified, select the following file and click the [Open] button.

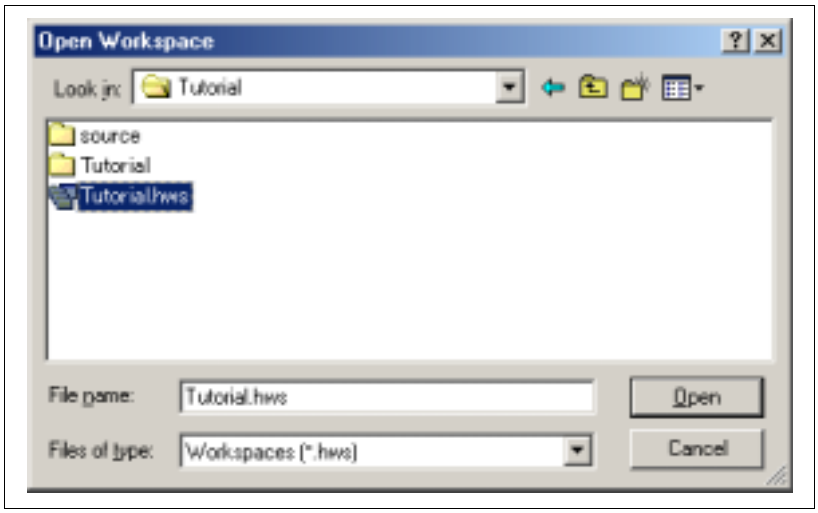

Figure 3 [Open Workspace] Dialog Box

7. The [Select Emulator mode] dialog box is displayed.

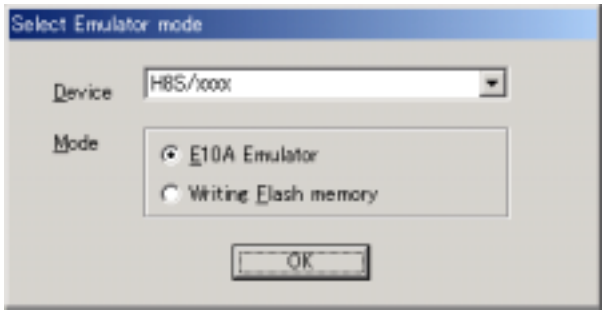

Figure 4 [Select Emulator mode] Dialog Box

[Device]: Select the device name in use.

[Mode]:

— E10A Emulator

The emulator for the specified MCU is activated to debug programs.

— Writing Flash memory

The user program is written to the flash memory. Debugging the program is disabled. To download the load module, register it in the workspace.

Select the E10A Emulator radio button and click the [OK] button.

8. The [Connecting] dialog box is displayed and the emulator connection is started.

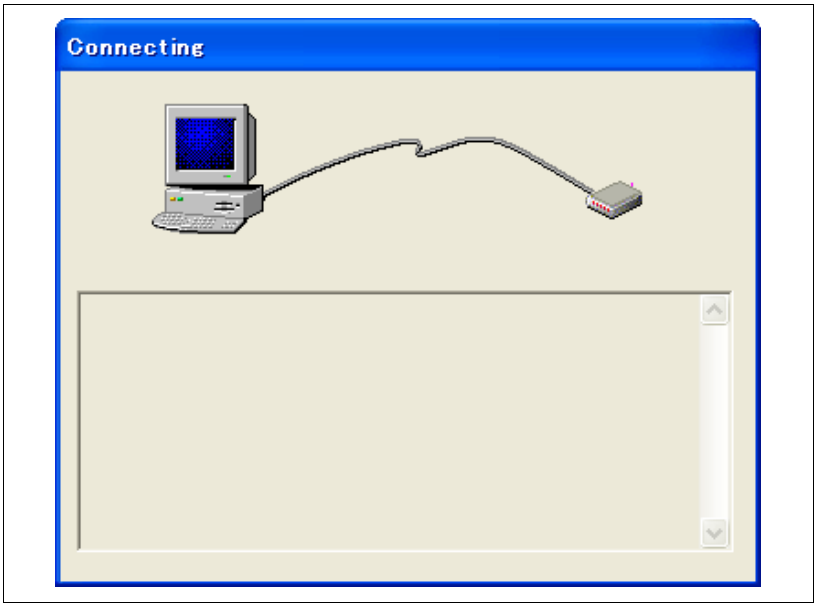

Figure 5 [Connecting] Dialog Box

9. After the following dialog box is displayed, input the system clock value.

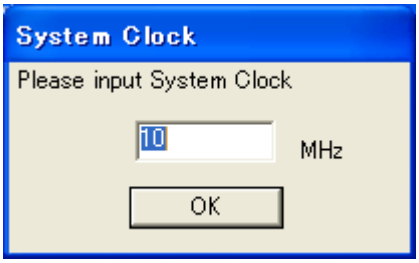

Figure 6 [System Clock] Dialog Box

10. After the following dialog box is displayed, input the ID code. When the emulator is activated in the [E10A Emulator] mode, input the ID code to be set.

Figure 7 [ID Code] Dialog Box

11. When "Connected" is displayed in the [Output] window of the HEW, the emulator initiation is completed.

Figure 8 [Output] Window

Note: If an error message is displayed, refer to Debugger part section 3.4, System Check, in the H8S family E10A Emulator user's manual provided by the CD-R.

4. Environmental Conditions

Table 1 Environmental Conditions

Item	Specifications	
Temperature	Operating:	+10°C to +35°C
	Storage:	–10°C to +50°C
Humidity	Operating:	35% RH to 80% RH, no condensation
	Storage:	35% RH to 80% RH, no condensation
Vibration	Operating:	2.45 m/s^2 max.
	Storage:	4.9 m/s^2 max.
	Transportation:	14.7 m/s^2 max.
Ambient gases	There must be no corrosive gases present	

Table 2 Operating Environments

Item	Description
Host computer	Built-in Pentium3 600 MHz or higher recommended; IBM PC or compatible machine with the PCMCIA TYPE II slot or PCI slot.
OS	Windows® 98SE, Windows® Me, Windows® 2000, Windows® XP,or Windows NT®
Minimum memory capacity	128 Mbytes or more (double of the recommended load module size)
Hard-disk capacity	Installation disk capacity: 50 Mbytes or more. Prepare an area at least double the memory capacity (four-times or more recommended) as the swap area.
Pointing device such as mouse	Connectable to the host computer; compatible with Windows® 98, Windows® Me, Windows® 2000, Windows® XP , and Windows NT®.
Power voltage	5.0 ± 0.25 V
Current consumption	HS0005KCM05H: 55 mA (Max.) HS0005KCI05H: 55 mA (Max.)
CD-ROM drive	Required to install the emulator and to refer to the manual provided by the CD-R.

Notes:

1. **IBM PC is a registered trademark of International Business Machines Corporation in the United States.**
2. **Microsoft®, Windows®, and Windows NT® are registered trademarks of Microsoft Corporation in the United States and/or other countries.**

5. Precautions on Using Emulator

5.1 Precaution on Connecting the Emulator

— When the emulator is connected, the [System Clock] dialog box may hide behind the [Connecting] dialog box.

— If the emulator is connected again after it has failed to be connected, the [Editor] column will be disappeared from the source window of the HEW. In this case, exit and restart the HEW and connect the emulator.

5.2 Break Condition Function

When Break Condition is set, no variable names or label names can be entered in the [Break condition] dialog box, directly enter an address.

5.3 Precaution on Editing Register Values from the [IO] Window

No data will be written to memory when the values of a register before and after editing are the same.

5.4 Precaution on Debugging

If a PC or SP value is illegally set (e.g., an odd value) and the user program is executed, an error message such as ‘Program counter is odd’ may be displayed twice.

5.5 Limitation during Writing to Flash Memory

Do not update the [Memory] or [Disassembly] window during writing to flash memory. The HEW may not operate normally.