To our customers,

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

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Renesas Electronics Corporation

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

Precautions on Using the H8S/2655 Series E6000 Emulator

This section shows notes on using the H8S/2655 Series E6000 Emulator.

1 Precautions on Using the Emulator

1.1 Supported MCUs and User System Interface Cables

The following shows the MCU type numbers supported by the E6000 emulator and the corresponding user system interface cables.
The H8S/2398 series (item 7 in the table below) is supported in H8S/2655 E6000 emulator HDI system V4.33.

No.	MCU Type Number	Package	E6000 User System Interface Cables
1	H8S/2655 H8S/2653	128-pin QFP FP-128B	HS2655ECH61H
		120-pin TQFP TFP-120	HS2655ECN61H
2	H8S/2246 H8S/2245 H8S/2244 H8S/2243 H8S/2242 H8S/2241R H8S/2240	100-pin QFP/TQFP FP-100B/TFP-100B	HS2245ECH61H
3	H8S/2351 H8S/2350	128-pin QFP FP-128B	HS2655ECH61H
		120-pin TQFP TFP-120	HS2655ECN61H
4	H8S/2345 H8S/2344 H8S/2343 H8S/2341 H8S/2340	100-pin QFP FP-100A	HS2345ECF61H
		100-pin QFP/TQFP FP-100B/TFP-100B	HS2345ECH61H
5	H8S/2357 H8S/2352	128-pin QFP FP-128B	HS2655ECH61H
		120-pin TQFP TFP-120	HS2655ECN61H
6	H8S/2355 H8S/2353	128-pin QFP FP-128B	HS2655ECH61H
		120-pin TQFP TFP-120	HS2655ECN61H
7	H8S/2398 H8S/2394 H8S/2392 H8S/2390	128-pin QFP FP-128B	HS2655ECH61H
		120-pin TQFP TFP-120	HS2655ECN61H

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Abbreviation:
1. Windows NT® is an abbreviation for Microsoft® Windows NT® operating system.
2. Windows® 95 is an abbreviation for Microsoft® Windows® 95 operating system.
3. Windows® 98 is an abbreviation for Microsoft® Windows® 98 operating system.
4. Windows® 98SE is an abbreviation for Microsoft® Windows® 98 Second Edition operating system.
5. Windows® Me is an abbreviation for Microsoft® Windows® Millennium Edition operating system.
6. Windows® 2000 is an abbreviation for Microsoft® Windows® 2000 operating system.

1.2 Event

- Combination of Address-Range and Data Compare-Byte

  When an address range is set as the address condition and byte data as the data condition, a break will occur only at even addresses in the address range. When an address range is set as the address condition, do not set an odd address as the Address Lo condition. If set, a break will not occur even when the conditions are satisfied.

1.3 Write Buffer

When the write buffer function is enabled, the writing operation of the on-chip ROM/RAM access and the external memory is executed in parallel. In this case, the E6000 emulator has the following limitations:

- The trace information is not acquired correctly only for this write cycle of the external memory.
- The event condition is not satisfied only for this write cycle of the external memory.

Therefore, when the program is debugged by using the write cycle trace of the external memory or event condition, the write buffer function must be disabled.

However, the write buffer function cannot be used for the optional memory. Even if the write buffer function is enabled, the writing operation, which is in parallel with the on-chip ROM/RAM access, does not occur in the optional memory.

1.4 Temporary Breakpoint

- Run... (Run menu)

  Do not set temporary breakpoints to an area wherein PC Break (User Read-only) cannot be set. If set, user program execution will not stop at the breakpoint. Moreover, the On Chip Breakpoint may remain. In this case, delete the breakpoint from the [Breakpoints] window.

1.5 Bus Monitor

The bus monitor function cannot be used in power-down modes.

1.6 Monitor

- Execution status display on status bar

  At memory access wait, not the address where access is halted, but the next fetched address is displayed.

1.7 The Load/Save of the Session File

Load the file after you confirm that the H/W environment is the same as that when the last session file was loaded.

Note that the operation of HDI may become incorrect when Target Clock is chosen at the time when the session file was saved and Target was not connected at the time when the session file was loaded.

1.8 Load Memory

During loading memory, if loading is stopped by [Halt] from the [Run] menu, there may be no responses from the HDI for a few seconds. For loading file, use [Load Program] from the [File] menu.

1.9 [Disassembly] Window

At address specification to open the [Disassembly] window, when a value larger than the maximum one of the absolute address is input, the contents of the last address may not be displayed. In this case, do not perform scrolling with the scroll box on the scroll bar in the [Disassembly] window.

If nothing is displayed on the Code or Assembly column in the [Memory] window or [Disassembly] window, close and open again the [Memory] window or [Disassembly] window.

1.10 [Trace] Window

- Note when the Number of Acquired Records is 1

  When the number of acquired trace records is 1, the trace result may not be displayed on the [Trace] window.

  If no data is displayed on the [Trace] window even if "Trace - 1 record (no filter)" is displayed on the title bar in the [Trace] window, open the [Trace] window again.

  When the trace is acquired with the trace window opened and when the number of acquired records is 1, the displayed data is illegal. Update the data by reopening the [Trace] window.

- Note when Time Stamp Setting is Changed
  Even if the valid/invalid setting for the Time Stamp is switched in the [Trace Acquisition] dialog box, the header character string in the [Trace] window is not changed.
  When the valid/invalid setting is switched, open the [Trace] window again.

- Filter
  When the trace filter function is used, the information of the Address and Source columns in the [Trace] window does not match. When the filter function is used, ignore the source information displayed on the Source column.

1.11 [Memory Mapping] Dialog Box

Even if the [Reset] button is clicked, the mapping information is not reset to the default setting. When the mapping information is reset to the default setting, once close the [Memory Mapping] dialog box with the [Close] button after clicking the [Reset] button.

1.12 Note on Setting Change Operation from BP Column

When the execution time measurement start point (+Time) or trace start point (+Trace) is clicked with the right mouse button, a pop-up menu is displayed. An item in this pop-up menu may not be changed to another one. In this case, change the item with double-clicking or from the [Breakpoints] window or [Trace] window directly.

1.13 Note on [Registers] Window Operation during Program Execution

During program execution, when the [Registers] window is double-clicked, a dialog box to change the register contents is displayed. However, the operation to change the register contents during program execution becomes invalid.

1.14 [Breakpoints] Window

During user program execution, it is impossible to jump to the corresponding source line or address line on the [Source] or [Disassemble] window from a breakpoint by using Go to Source in the pop-up menu that is displayed on the [Breakpoints] window.

1.15 Profile Function

The E6000 HDI does not support the profile function (section 13.10, Profile-List, section 13.11, Profile-Tree, and section 13.12, Profile-Chart, described in Hitachi Debugging Interface User's Manual).

1.16 [I/O Registers] Window

The E6000 HDI does not support the invalid module display and bit information display in the [I/O Registers] window (described in section 8, Displaying Variables, in the Hitachi Debugging Interface User's Manual).

1.17 Compare Memory

The Compare Memory function, which can be used by selecting [Compare...] from the [Memory] menu, is not supported.

1.18 [Select Function] Dialog Box

The E6000 HDI does not support software breakpoint setting in the [Select Function] dialog box (described in section 10, Selecting Functions, in the Hitachi Debugging Interface User's Manual).

1.19 Note on Radix in [Register] Dialog Box

The default input radix in the [Register] dialog box is hexadecimal regardless of the Radix setting. If you want to input the radix other than hexadecimal, specify the prefix code such as B'.

1.20 Note on Moving Source File Position after Creating Load Module

When the source file is moved after the load module has been created, the [Open] dialog box, which specifies the source file, may be displayed during debugging the created load module. Select the corresponding source file and click the [Open] button.

1.21 Source-Level Execution

- Source file
  Do not display source files that do not correspond to the load module in the program window. For a file having the same name as the source file that corresponds to the load module, only its addresses are displayed in the program window. The file cannot be operated in the program window.

- Step
  Even standard C libraries are executed. To return to a higher-level function, enter Step Out. In a for statement or a while statement, executing a single step does not move execution to the next line. To move to the next line, execute two steps.

1.22 Watch

- Local variables at optimization
  Depending on the generated object code, local variables in a C source file that is compiled with the optimization option enabled will not be displayed correctly. Check the generated object code by displaying the [Disassembly] window.

- Variable name specification
  When a name other than a variable name, such as a symbol name or a function name, is specified, no data is displayed.
  Example: The function name is main.
  main =

- Array display
  When array elements exceed 1000, elements from after 1000 will not be displayed.

1.23 Line Assembly

- Input radix
  Regardless of the Radix setting, the default for line assembly input is decimal. Specify H' or 0x as the radix for a hexadecimal input.

- Address space size
  In absolute addressing mode, specify the size (:16, etc.)

1.24 Command Line Interface

- Batch file
  To display the message "Not currently available" while executing a batch file, enter the sleep command. Adjust the sleep time length which differs according to the operating environment.
  Example: To display "Not currently available" during memory_fill execution:
  sleep d'3000
  memory_fill 0 ffff 0

- Overwrite file
  In Command Line Interface, a file having the same name as the output file is overwritten without asking the user.

1.25 Usage with Another HDI

- Automatic load of session files
  Since the emulator cannot use another HDI, re-install this HDI whenever another HDI has been previously installed is used.
  If another HDI has been used, initiate this HDI with "Run" as follows without using the session files.
  <Directory path name in which HDI is installed>\hdi /n (RET)
  /n initiates the HDI without loading the recently used session files.
  If there is another session file in the different debug platform, the following error message is displayed:
  invalid target system: <recently used debug platform name>

- Uninstallation of Another HDI
  When another HDI is uninstalled after installing this HDI, the bus monitor function and the stack trace function cannot be used. To use this function, re-install this HDI.

1.26 Limitations when Using Old Version of Windows® 95

When using the old released version (4.00.950a, etc.) of Windows® 95, an illegal operation may occur; for example, the HDI is abnormally terminated by an application error if [Options...] is selected from the [Setup] menu. This is because of the old version of COMCTL32.DLL in the System directory in the Windows directory. Download the updated program of COMCTL32.DLL from the Microsoft® homepage, or update the version of Windows® 95.

2 User's Manual

2.1 Emulator User's Manual

In the E6000 emulator user's manual, some screen bitmap may be different from actual ones. For details on functions, refer to the on-line help or Hitachi Debugging Interface User's Manual.