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April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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Precautions on Using the H8/3664 E6000 Emulator

Thank you for purchasing the H8/3664 E6000 emulator.
Please note the followings when using this version of the H8/3664 E6000 emulator.

1 Differences between HS3664EPI61H and HS3664EPI62H

There are two types of H8/3664 E6000 emulator: HS3664EPI61H and HS3664EPI62H. Although the H8/3664 E6000 emulator V2.0.02 and later versions support both HS3664EPI61H and HS3664EPI62H, the user's manual stored in the setup CD assumes that HS3664EPI62H is in use. When you use HS3664EPI61H, be careful of the differences listed below.

1.1 Mass

HS3664EPI61H: Approximately 1,000 g

HS3664EPI62H: Approximately 850 g

1.2 USB Connector of E6000 Emulator

HS3664EPI61H: The emulator has no USB interface connector (figure 1).

HS3664EPI62H: The emulator has a USB interface connector (figure 2).

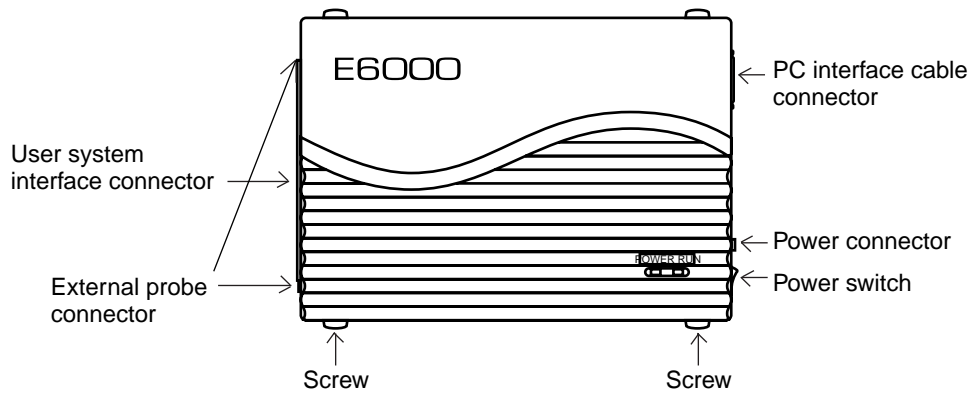


Figure 1 HS3664EPI61H Connectors

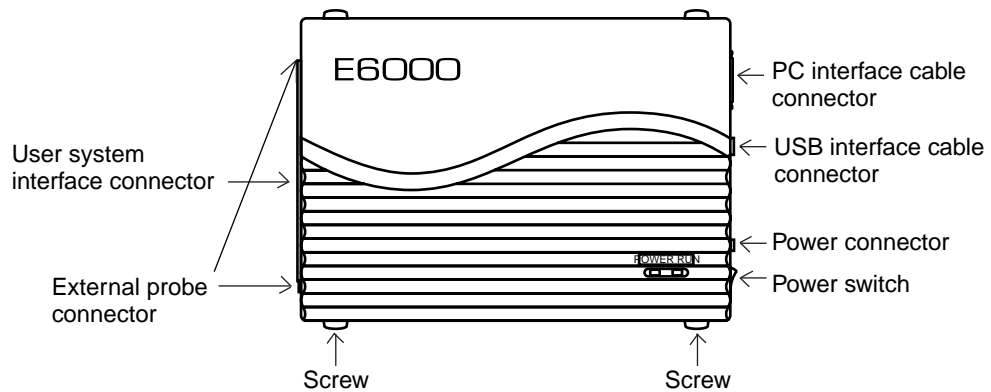


Figure 2 HS3664EPI62H Connectors

1.3 Color of Power LED

HS3664EPI61H: Red

HS3664EPI62H: Green

1.4 Serial EEPROM Board for Evaluation of H8/3664N (with EEPROM Incorporated)

HS3664EPI61H: HS3664EMS61H is used as the serial EEPROM board.

HS3664EPI62H: HS3664PWB65H is used as the serial EEPROM board.

Note, however, that operation is possible even if the combination of items you use is different from those listed above because HS3664EMS61H and HS3664PWB65H are compatible to each other.

2 Precautions on Using the Emulator

2.1 Supported Emulators

The H8/3664 E6000 emulator V2.0.02 and later versions support both HS3664EPI61H and HS3664EPI62H as the emulator station. To use the H8/3664 E6000 emulator V2.0.01 or an earlier version with the HS3664EPI62H, note the following.

The USB interface incorporated in the HS3664EPI62H does not work with the USB driver of the H8/3664 E6000 emulator V2.0.01 or an earlier version. Use the USB driver stored in the setup CD for the H8/3664 E6000 emulator V2.0.02 or a later version, or download the latest USB driver from the URL below and install it.

<http://download.renesas.com/eng/mpumcu/index.html>

2.2 Different On-Chip RAM Size in the Actual Device and the Emulator

The size of the on-chip RAM in the actual device and the emulator depends on the target MCU being selected (table 1).

Table 1 Different On-Chip RAM Size in the Actual Device and the Emulator

Target MCU	Actual Device	Emulator
H8/36087	H'E800 to H'FFFF, H'FB80 to H'FF7F	H'E800 to H'FFFF, H'F780 to H'FF7F
H8/36086	H'E800 to H'FFFF, H'FB80 to H'FF7F	H'E800 to H'FFFF, H'F780 to H'FF7F
H8/36085	H'E800 to H'FFFF, H'FB80 to H'FF7F	H'E800 to H'FFFF, H'F780 to H'FF7F
H8/36084	H'E800 to H'FFFF, H'FB80 to H'FF7F	H'E800 to H'FFFF, H'F780 to H'FF7F
H8/36083	H'E800 to H'FFFF, H'FB80 to H'FF7F	H'E800 to H'FFFF, H'F780 to H'FF7F
H8/36082	H'E800 to H'FFFF, H'FB80 to H'FF7F	H'E800 to H'FFFF, H'F780 to H'FF7F
H8/36109	H'FFE400 to H'FFEFFF, H'FFFB80 to H'FFFF7F	H'FFE400 to H'FFEFFF, H'FFF780 to H'FFFF7F
H8/36108	H'FFE400 to H'FFEFFF, H'FFFB80 to H'FFFF7F	H'FFE400 to H'FFEFFF, H'FFF780 to H'FFFF7F
H8/36107	H'FFE400 to H'FFEFFF, H'FFFB80 to H'FFFF7F	H'FFE400 to H'FFEFFF, H'FFF780 to H'FFFF7F

2.3 Note on Mode Transitions

This emulator handles a break as an interrupt source of mode transitions.

2.4 EEPROM Reading/Writing Function

This emulator supports the EEPROM reading/writing function that allows an easy access to the EEPROM while the user program is halted.

To use the EEPROM reading/writing function, select [EEPROM...] from [CPU] of the [View] menu.

The slave address of the serial EEPROM board attached to this emulator must always be H'00. Be sure to set H'0 as the slave address to use this serial EEPROM board.

For details on how to use this function, refer to the online help.

Note that this function is only available while emulating a device that has an EEPROM.

2.5 [Memory Mapping] Dialog Box

This High-performance Embedded Workshop does not support memory map setting in the [Memory Mapping] dialog box (described in section 5, Debugging, in the Emulator Debugger Part of the H8/3664 E6000 Emulator User's Manual).

To check the memory map information of the device, select [Status] from [CPU] of the [View] menu to open the [Status] window and then select the [Memory] sheet on this window.

2.6 Event

2.6.1 Removing Software Breakpoints during Execution of the User Program

Do not remove Software breakpoints in the source window, [Disassembly] window, or [Label] window during execution of the user program.

2.6.2 Recovery of Software Breakpoints by the Session File

Information on Software breakpoints that was saved in the session file is not available until a load module is loaded. If necessary, load a load module or set new Software breakpoints.

2.7 Display of the Memory Content and Operation of Memory

2.7.1 Operating Memory during Execution of the User Program

The memory copy, memory compare, memory fill, and memory test functions are not available during execution of the user program. These command lines are not available either.

2.7.2 Memory Test

- Memory Content after Execution of a Memory Test

The content of memory in the specified range after execution of a memory test will not be guaranteed. The contents of windows that display memory, such as the [Memory] window, are not automatically updated after a memory test. Be careful if you want to continue debugging.

- MT Command

When an incorrect parameter has been specified for the MT command, the command line window may display the message “UNKNOWN ERROR –nnnnnnnnnn”. Enter the correct parameter. The command line window displays the message “Open this document” after ending the MT command. Ignore this message because it is not concerned with the result of the MT command.

2.7.3 Updating the Memory Content during Execution of the User Program

Updating the content of the [Memory] window during execution of the user program when either of the following conditions is satisfied causes the displayed values to be incorrect:

- [Enable read and write on the fly] in the [Configuration Properties] dialog box has been disabled
- Stepping (step-in, step-over, or step-out) is being performed
- The emulator is in sleep mode, software standby mode, watch mode, or subsleep mode.

In those cases, the correct values will be displayed when the content of the window is updated after the program has stopped. This also applies to the windows [Disassembly], [Image View], [IO], [Watch], and [Waveform].

Updating of the [Monitor] window or [Watch] window by reading values with the monitoring function is available even with those conditions.

2.7.4 MEMORY_MOVE Command

Do not select the V/N option in the MEMORY_MOVE command. Writing to memory by the MEMORY_MOVE command always requires verification.

2.8 The Load/Save of File

2.8.1 Access Size of Download Modules

When you specify a download module for debug settings, do not select 4 or 8 for [Access size] in the [Download Module] dialog box.

2.8.2 Loading a File in the SYSROF Format

No program in the SYSROF format can be loaded. Any program for debugging must be created in the Elf/Dwarf2 format.

2.8.3 FILE_LOAD Command

Do not specify V in the FILE_LOAD command. Use the FILE_VERIFY command to verify memory.

2.8.4 FILE_SAVE Command

The content of memory cannot be saved in the Elf/Dwarf2 format.

2.9 Emulation

2.9.1 Temporary Breakpoints

- Run... (Run menu)

Do not set temporary breakpoints to an area wherein Software Break (User Read-only) cannot be set. Otherwise, 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.

2.9.2 Rate of Stepping

- To perform stepping continuously with the [Image View] or [Waveform] window open, do not select "0 seconds" as the delay.
- Do not perform stepping continuously if you have specified the realtime update of the [Image] or [Waveform] window.

2.9.3 Go to Cursor

The [Go to Cursor] function uses one Software breakpoint. Note the followings:

- To use the [Go to Cursor] function, the number of Software breakpoints must be 255 or less.
- To use the [Go to Cursor] function for the ROM area on the target system, do not use the On Chip Breakpoint by the Software break.

2.9.4 Note on Occurrence of Breaks

When a break occurs during execution of the user program with a dialog box open, the state of High-performance Embedded Workshop may not transit to the breaking state. In this case, close the dialog box and select [Halt Program] from the [Debug] menu or press the [Halt Program] button on the toolbar. You can check whether a break has occurred or not by the RUN lamp (LED) on the emulator station. The RUN lamp (LED) is illuminated while the user program is running.

2.9.5 Execution Status Display

- Execution Status Display on Status Bar

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

2.9.6 Source-Level Execution

- 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. Do not execute a step on a sleep instruction.

2.10 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 High-performance Embedded Workshop may become incorrect when Target Clock is chosen at the time when the session file was saved and the target clock was not supplied at the time when the session file was loaded.

2.11 Assembling and Disassembling

2.11.1 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.)

2.11.2 Columns in the [Disassembly] Window

The columns Event and EXT.2 Trigger in the [Disassembly] window may be switched. You can identify these columns by displaying a popup menu on either of them.

2.12 Note on [Register] Window Operation during Program Execution

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

2.13 [IO] Window

2.13.1 Contents of the [IO] Window

The invalid module display in the [IO] window are not supported.

2.14 Source File

2.14.1 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 of the created load module. Select the corresponding source file.

2.14.2 Columns in the Source Window

The columns Event and EXT.2 Trigger in the source window may be switched. You can identify these columns by displaying a popup menu on either of them.

2.14.3 Event Column

When different actions have been set on an address from the windows [Event] and [Trace], note the followings:

- Deletion and change for settings may not be available on the [Event] column.
- If eight or more points have been set as the start points in execution time measurement (Timer On), changing the settings on the [Event] column may prevent further changes.

Deletion and change for settings must be made in the [Event] window or [Trace] window.

2.15 Watch

2.15.1 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.

2.15.2 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.

2.15.3 Display of float- and double-type Variables

Do not enable the automatic update of float- and double-type variables. The values of float- and double-type variables will not be correctly displayed if they are automatically updated during execution of the user program. If you want to check the values, use the monitoring function ([Monitor] window).

2.15.4 Synchronization with the [Monitor] window

The content of the [Watch] window will be undefined if you change the monitor settings in the [Monitor] window during execution of the user program while the [Monitor] window is used to monitor the addresses of the symbols registered in the [Watch] window.

2.16 Command Line Interface

- Specifying a File

If a file is specified in the relative path format for a command line parameter, an access to the file may not be available. A file must be specified in the absolute path format when using a command line.

- Batch File

If the message “Not currently available” is displayed while executing a batch file, enter the sleep command. Adjust the length of sleep time since it varies according to the operating environment.

Example: When “Not currently available” is displayed during memory_fill execution:

```
sleep d'3000
memory_fill 0 ffff 0
```

- Overwrite File

In Command Line Interface, a file that has the same name as the output file is overwritten without asking the user.

- Log File

To change the target platform due to a change of the session while logging of the command line window, halt logging.

- GO_TILL Command

If the GO_TILL command executed by specifying “wait” as the parameter is terminated with an error, the command processing may not be available. In such cases, select [Stop] in the popup menu of the command line window to perform the command processing.

2.17 Monitoring Function

2.17.1 Changing Monitor Settings during User Program Execution

If you change the monitor settings in the [Monitor] window during execution of the user program, the initial values will be undefined.

2.18 Installation and Uninstallation

2.18.1 Uninstallation from [Tool Administration]

Note that a message dialog box appears for confirmation if the folder to be removed includes a file other than those installed. Even though this dialog box is displayed, press the [Ignore] button to continue uninstallation.

2.18.2 [Add/Remove Programs Properties] of the Control Panel

Note the followings:

- Uninstalling from [Add/Remove Programs Properties] of the control panel only removes folders and files of the product most recently installed if several products that conform to High-performance Embedded Workshop have been installed. Use the explorer to remove the folders and files of the rest of the products.
- Once uninstallation is attempted, even products that were not removed may not operate correctly. If you want to use these products, re-install them.

2.18.3 Usage with Other Products

To install the SuperH™ RISC engine C/C++ compiler package or H8S, H8/300 series C/C++ compiler package after installing the E6000 emulator software for High-performance Embedded Workshop, select [High-performance Embedded Workshop] as the component to be installed in [Select Components] during installation of the compiler package.

3 User's Manual

3.1 Emulator User's Manual

In the E6000 emulator user's manual, some screen bitmap may be different from actual ones.