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M32C Simulator Debugger V.1.04.00

Release Notes

This document describes the notes of this debugger, and please read before you start to use this debugger.

And also, please refer to the “High-performance Embedded Workshop Release Notes” about the notes of High-performance Embedded Workshop IDE.

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1 Notes

1.1 Line Assembly

Regardless of the Radix setting, the default for line assembly input is decimal. Specify H as the radix for a hexadecimal input.

1.2 Event Setting

1. TAB order in Set Event Status dialog box
Even when you press [TAB] key, the next input control may not be focused on the Set Event Status dialog boxes opened from Trace Point.
2. In-place-edit mode on event list
On event list in Trace Point, High-performance Embedded Workshop will not escape from in-place-edit mode even when you press the [ESC] key.
3. Event setting by BIT SYMBOL
When the specified address is odd numbers, the setting by BIT SYMBOL can not set the correct condition. Use DATA ACCESS setting and specify the compared data with the data mask. For details about how to set the conditions for odd number addresses, refer to the online help.
4. Event detection for BIT SYMBOL
When the event is set to detect the access to specified bit, it will be detected even if the other bit of the same address as the specified bit is accessed. This is because the access to the bit from MCU is byte access.

1.3 Output Port

1. Use of Symbol
If you use a symbol to specify an address in the Set Port Dialog box, an error "Can't find symbol." will occur, when you restart the HEW or get back to the session.

1.4 Data Trace

1. Split-bar behavior when double-clicking
If you double-click the split-bar, which divides view up and down, the horizontal scroll-bar, vertical scroll-bar, and tabs in the upper view will vanish. Drag the split-bar to display them again.

1.5 Trace

1. Specifying function in SRC mode
In the SRC mode, when you specify a function to display it, if the current displayed source file includes the function, the top of the source file will be displayed.
2. Saving of tracing result in text
 - When you save a tracing result in text with only "BUS" and "DATA" buttons ON, the vertical position of some headers will shifts from the corresponding data. Check "Tab Separated Format" and open it with spreadsheet applications to display them correctly.
 - When you save a tracing result that includes BUS and DATA access information in text, some headers can not be correct. When you check "Tab Separated Format", the headers will be correct.
3. Time concerned data
Displayed time concerned data is not measured, though time concerned buttons and items in pop-up menu are active.(Time measurement is not supported.)
4. Loading the trace image file
Trace window can not load the trace image file saved by PDxx debuggers. And also, trace window can not load the trace image file saved by the different target from the current target.

1.6 RAM Monitor

1. Proportional Fonts
When a proportional font is selected, a part of the characters in the view may be hidden. Fixed fonts are recommended.

1.7 Memory

1. 8 bytes data operations
To set, fill, and copy 8 bytes data are not supported.

1.8 Script

1. Result of interactive command
When you invoke an interactive command, for example, Assemble and setMemoryByte, the running dialog box will appear and may hide the view of the results.
2. SCOPE Command
When you refer current scope name with SCOPE command after program execution, the scope of the start-up module will be returned even if scope has been changed to the other.

1.9 Real-time OS debugging functions

1. When several labels are allocated to the entry address of the tasks or handlers, the task name or the handler name displayed in the windows may be different from the actual function name.
2. When you use the feature to issue system-calls by the script command (MR SYS), the target program should be built with a specific option. For details, refer to the topic "Prepare the real-time OS debug" in the online help.

1.10 Macro recording function

The debug windows which support the macro recording function are memory, registers, IO, ASM watch, and C watch. And also, the debug operations which support this are Reset CPU, Go, Reset Go, Go To Cursor, Step In, Step Over, Step Out, Add/Delete break points, and Download the target program.

1.11 Test facility function

The contents to be compared by the test facility functions are memory, registers, I/O, Output, stack race, ASM watch, and C watch.

1.12 Using cast operators for the member variable

When you use cast operators for the member variable to refer to it as the pointer of the structure, you would not refer to it correctly.

1.13 Download module dialog box

This debugger does not support the setting of "Offset", "Memory verify on download", and "Access Size" in the download module setting dialog box. These are always treated as "Offset: 0", "Memory verify: off", and "Access Size: 1".

1.14 The option "Always treat variables of enumerator type with unknown size as 1 byte"

The "Always treat variables of enumerator type with unknown size as 1 byte" option is effective after downloading the program. When the option status is changed, target program should be downloaded again.

And also, this option is effective for all variables of enumerator type in the program, even if the compiling options are different for each file.

1.15 Debugging for assembler macros

When the break points are set at the assembler macro codes, the break points would be set at the different address or not be displayed as the PC line.

1.16 Debugging for inline functions

When stepping the function including the call for a inline function, local variables would not be able to be referred.

1.17 Automatic target connection on changing the session

When the target connection is not performed on changing the session, select the menu [Debug] -> [Connect]. To perform automatic target connection, remove the check from the option "Do not perform automatic target connection" in the Option tab on Debug Setting dialog box which is invoked by the menu [Debug] -> [Debug Settings...].

1.18 Run program option

The "Run Program" dialog box enables to specify several temporary PC breakpoints, but this debugger only supports one breakpoint which is listed first in the "Temporary PC breakpoints" list box.

1.19 Selection of the object format for download module

When the specified file format in the debug setting dialog box is different from the format of the object module file, downloading the file may cause a freeze of the debugger. Please select the correct object format. And also, when selecting the object format for download module file, if there are two or more object format, whose name includes the vender name another ones do not include it, prioritize the file whose name includes vender name leading the object format name.

1.20 Using the Simulator Debugger Customizing Kit (I/O DLL kit)

When you use the I/O DLL Kit, you should specify I/O DLL file name to sim308.exe's environment setup file "sim308.ini".

The sim308.ini file is stored in the directory shown below:

"Workspace directory\Project directory"

Please specify the I/O DLL file name to the sim308.ini file of the above-mentioned directory when you use the I/O DLL kit.

1.21 Notes on Debugging (M32C Simulator Debugger)

1.21.1 Executed time span and executed cycles

The displayed cycles for execution are calculated by the value described in the software manuals of the micro computer. And the displayed time span for execution is calculated from the cycles and the frequency which is specified in the INIT dialog. The external bus width, the state of instruction queues, or the software wait for instructions are not considered, so the value will be different from the value of the actual MCUs.

To calculate the actual cycles, use the full-spec emulator or the compact emulator.

2 System Requirements

2.1 Operating Environment (Windows® XP or Windows® 2000)

PC Environment	
PC	IBM PC/AT compatible
OS	32-bit editions of Windows® XP *1 *2 Windows® 2000 *1
CPU	Pentium 4 running at 1.6 GHz or more recommended
Memory	768 Mbytes or larger (more than 10 times the file size of the load module) recommended
Hard disk	Installation of the simulator debugger requires free space of 200 Mbytes or larger. Also keep additional free space that is at least twice the memory capacity (four times or larger recommended) for use as swap space.
Display resolution	1024 × 768 or higher recommended

2.2 Operating Environment (Windows Vista®)

PC Environment	
PC	IBM PC/AT compatible
OS	32-bit editions of Windows Vista® *1 *3
CPU	Pentium 4 running at 3 GHz or Core 2 Duo running at 1 GHz or more recommended
Memory	1.5 Gbytes or larger (more than 10 times the file size of the load module) recommended
Hard disk	Installation of the simulator debugger requires free space of 200 Mbytes or larger. Also keep additional free space that is at least twice the memory capacity (four times or larger recommended) for use as swap space.
Display resolution	1024 × 768 or higher recommended

*1: Windows and Windows Vista are either registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.

*2: The 64-bit editions of Windows® XP is not supported.

*3: The 64-bit edition of Windows Vista® is not supported.

3 Version Report

This section describes the specification of the changed software.

3.1 M32C Simulator Debugger V.1.04.00

In this version, the following specifications were changed from the previous version M32C Simulator Debugger V.1.03.00.

This version supports all of the function extensions and the revisions to the restrictions in the High-performance Embedded Workshop V.4.04.00, V.4.04.01, V.4.05.00 and V.4.05.01. For more details, please refer to the RENESAS TOOL NEWS “071216/tn5” issued on December 16, 2007, “080118/tn1” issued on January 18, 2008, “081125/tn1” issued on November 25, 2008 and “090201/tn3” issued on February 1, 2009.

3.1.1 Functional Extensions and Modifications

1. The 32-bit editions of Windows Vista® is supported. You can run the revised product on Windows Vista® by using your user rights.

3.2 M32C Simulator Debugger V.1.03.00

In this version, the following specifications were changed from the previous version M32C Simulator Debugger V.1.02.00.

This version supports all of the function extensions and the revisions to the restrictions in the High-performance Embedded Workshop V.4.02.00 and V.4.03.00. For more details, please refer to the RENESAS TOOL NEWS “061216/tn2” issued on December 16, 2006 and “070701/tn1” issued on September 1st, 2007.

3.2.1 Revisions to Restrictions

1. A limitation has been corrected: The registers can not be referenced correctly in the IO window. (For more details, refer to the RENESAS TOOL NEWS “061216/tn7” issued on December 16, 2006)
2. A limitation has been corrected: if the On Demand check box is checked in the Debugging Information tab of the Init dialog box, which appears when you invoke your debugger, target programs may not be loaded successfully on MCUs and not run properly. (For more details, refer to the RENESAS TOOL NEWS “070416/tn8” issued on April 16, 2007).
3. A limitation has been corrected: If the size of the variable to be referred by the quick watch feature is larger than 256 bytes, High-performance Embedded Workshop would crash. (For more details, refer to the RENESAS TOOL NEWS “070601/tn5” issued on June 1st, 2007).

3.2.2 Functional Extensions and Modifications

2. Displaying source files information automatically in the Workspace Window. When a download module file is downloaded, the High-performance Embedded Workshop obtains source files information contained in the download module file through its debug information, and displays it under "download module" node in the Projects tab on the Workspace Window. Note that this function is available only for debugging the debug-only projects.
3. Supports C watch window included in High-performance Embedded Workshop V.4.03. The feature Changing scope of the variable and suppression leading zero are supported.
4. The option to specify the size (1byte or 2byte) of enumerator type is added.
5. Supports “Disconnect target” feature.
6. When the instruction is modified by the line assemble feature, if the old instruction length is longer than the new instruction length, NOP instructions are inserted automatically so as to suit the old instruction length.
7. The instruction format specifier is displayed for each instruction in disassembly. And also, can be switched not to display.
8. Supports to substitute the bit field member variable.
9. The default value of “Reset CPU after download module” is changed to be checked.

3.3 M32C Simulator Debugger V.1.02.00

In this version, the following specifications were changed from the previous version M32C

This version supports all of the function extensions and the revisions to the restrictions in the High-performance Embedded Workshop V.4.01.00 and V.4.01.01. For more details, please refer to RENESAS TOOL NEWS “060701/tn1” issued on July 1, 2006 and “060801/tn1” issued on August 1, 2006.

3.3.1 Revisions to Restrictions

1. A limitation has been corrected: The structure member variables, union member variables, or class member variables whose name begins with a letter of ‘e’ or ‘E’ immediately followed by a numeral, are not referenced.

For more details, refer to the RENESAS TOOL NEWS RSO-M3T-PD32RM-060116D issued on January 16, 2006.

3.3.2 Functional Extensions and Modifications

1. These commands, which can be invoked in Command Line, have been supported:
breakpoint, breakpoint_disable, breakpoint_display, breakpoint_clear
register_display, register_set
disassemble, assemble