

# R32C E8a Emulator Debugger

## 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 Application

This release notes is applicable to the following parts of the E8a emulator software.

- R32C E8a Emulator Debugger V.1.01.00

## 2 System Requirements

### 2.1 Operating Environment (Windows® 7 ,Windows Vista® or Windows® XP)

PC Environment	
PC	IBM PC/AT compatible
OS	Windows® 7 32-bit editions of Windows Vista® *1 *3 32-bit editions of Windows® XP *1 *2
CPU	Pentium 4 running at 3 GHz or more recommended
Memory	Windows® 7, Windows Vista® 1.5 Gbytes or larger (more than 10 times the file size of the load module) recommended Windows® XP: 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

\*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 Supported MCUs

### 3.1 R32C/100 Series

Group	Part No.
R32C/111	R5F64110, R5F64111, R5F64112, R5F64114, R5F64115, R5F64116, R5F6411E, R5F6411F
R32C/116	R5F64165, R5F64166, R5F64167, R5F64168, R5F64169,
R32C/116A	R5F6416JA, R5F6416KA, R5F6416LA, R5F6416MA
R32C/117	R5F64175, R5F64176, R5F64177, R5F64178, R5F64179, R5F6417A, R5F6417B
R32C/117A	R5F6417JA, R5F6417KA, R5F6417LA, R5F6417MA
R32C/118	R5F64185, R5F64186, R5F64187, R5F64188, R5F64189
R32C/118A	R5F6418JA, R5F6418KA, R5F6418LA, R5F6418MA
R32C/120	R5F64200, R5F64201, R5F64206, R5F64207, R5F6420A, R5F6420B, R5F6420E, R5F6420F
R32C/121	R5F64210, R5F64211, R5F64212, R5F64213, R5F64216, R5F64217, R5F64218, R5F64219, R5F6421A, R5F6421B, R5F6421C, R5F6421D, R5F6421E, R5F6421F, R5F6421G, R5F6421H
R32C/145	R5F6445F R5F6445H
R32C/151	R5F64514, R5F64515, R5F6451M, R5F6451N
R32C/152	R5F64524, R5F64525, R5F6452M, R5F6452N
R32C/153	R5F64534, R5F64535, R5F6453M, R5F6453N
R32C/156	R5F64561, R5F64562, R5F64563, R5F6456F, R5F6456G, R5F6456H
R32C/157	R5F64571, R5F64572, R5F64573, R5F6457F, R5F6457G, R5F6457H
R32C/160	R5F64600, R5F6460E, R5F64601, R5F6460F
R32C/161	R5F64610, R5F6461E, R5F64611, R5F6461F

## 4 Notes

This document is supplementary information for the E8a Emulator Additional Document for User's Manual.

### 4.1 Note on rewriting flash memory

Do not execute debugging operations when rewriting the flash memory. Flash memory rewrite ends when the "Flash memory write end" is displayed in the output window of the High-performance Embedded Workshop. Flash memory rewrite occurs:

- When downloading the user program
- After setting PC breaks in the flash memory and executing the user program
- After canceling PC breaks in the flash memory and executing the user program
- After rewriting the value of the flash memory in the memory window and executing the user program

### 4.2 Notes on using automatic memory update

- If the automatic memory update is enabled in the Memory or Watch window, do not reset the MCU.
- When automatic memory update is enabled, do not execute Step Out or Multiple-steps.

### 4.3 Note on memory verification

- As the E8a emulator debugger does not support the memory verification.
- The E8a emulator debugger does not support "Perform memory verify during download" and "Access size" of the Download Module dialog box. Please run the debugger without memory verification and with access size set to 1.

### 4.4 Support for the IAR Systems cross tool

The debugging information for the object files generated by IAR Systems cross tools were checked for the following product and options:

IAR Embedded Workbench for Renesas R32C	V1.10A
- R32C IAR C/C++ Compiler	1.10A
- R32C IAR Assembler	1.10A
- IAR XLINK Linker	4.60G
Output format :	elf/dwarf
Format variant :	"-yspc"(Renesas compatible)

In addition, update High-performance Embedded Workshop to V.4.05.00 or later.

### 4.5 Note on using Windows Vista® and Windows® 7

- Low power mode in Windows Vista® and Windows® 7  
When Windows Vista® and Windows® 7 goes into sleep mode or suspend mode, a communication error may occur in the USB communication between the host machine and the emulator. Therefore, configure Windows Vista® and Windows® 7 not to enter sleep mode or suspend mode.
- No Help (including the context-sensitive help) may be displayed.  
Install the Windows Help file (WinHlp32.exe file) from Microsoft Corporation's Web site.  
<http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=6ebcfad9-d3f5-4365-8070-334cd175d4bb>

### 4.6 Note on I/O Files

- In this product, the following I/O files are not attached.
  - I/O files for R32C/116A, R32C/117A, R32C/118A and R32C/145We will release them after their hardware manual Rev.1.00 has been released.
- The incorrect descriptions in the I/O window might be solved by correcting the I/O files.
- You can make or edit the I/O file with a text editor. For details, please refer to "I/O File Format" in High-performance Embedded Workshop Help.

## 4.7 Note on Address match break

The following operations are invalid while executing the user's program.

- Disable or remove address match breakpoints that have been set.

## 5 Version Report

This section describes the specification of the changed software.

### 5.1 R32C E8a Emulator Debugger V.1.01.01

In this version, the following specifications were changed from the previous version R32C E8a Emulator Debugger V.1.01.00.

#### 5.1.1 Functional Extensions and Modifications

1. The debuggers can run on Windows ® 7 with your user rights.

### 5.2 R32C E8a Emulator Debugger V.1.01.00

In this version, the following specifications were changed from the previous version R32C E8a Emulator Debugger V.1.00.02.

This version supports all of the function extensions and the revisions to the restrictions in the High-performance Embedded Workshop V.4.06.00 and V.4.07.00. For more details, please refer to the RENESAS TOOL NEWS “090701/tn1” issued on July 1st, 2009 and “091001/tn1” issued on October 1st, 2010.

#### 5.2.1 Supported MCUs Increased

- R32C/116A group:  
R5F6416JA, R5F6416KA, R5F6416LA, R5F6416MA
- R32C/117A group:  
R5F6417JA, R5F6417KA, R5F6417LA, R5F6417MA
- R32C/118A group:  
R5F6418JA, R5F6418KA, R5F6418LA, R5F6418MA
- R32C/145 group:  
R5F6445F R5F6445H

#### 5.2.2 Functional Extensions and Modifications

1. Up to now, it was necessary to end the debugger for "Communication timeout error" to occur if there is no response from MCU, and to recover the state. In this version, the state can be recovered without ending the debugger.
2. Trouble shoot collections of E8a emulators can be opened from the following error message display dialog box.
  - "Boot failed"
  - "Communication timeout Error"
  - "ID code error !"
3. Download and memory reference/change to the E2 data flash area was supported.

### 5.3 R32C E8a Emulator Debugger V.1.00.02

In this version, the following specifications were changed from the previous version R32C E8a Emulator Debugger V.1.00.01.

#### 5.3.1 Supported MCUs Increased

- R32C/111 group:  
R5F6411E
- R32C/117 group:  
R5F6417A, R5F6417B
- R32C/120 group:  
R5F64200, R5F64201, R5F64206, R5F64207, R5F6420A, R5F6420B, R5F6420E, R5F6420F
- R32C/121 group:  
R5F64210, R5F64211, R5F64212, R5F64213, R5F64216, R5F64217, R5F64218, R5F64219,  
R5F6421A, R5F6421B, R5F6421C, R5F6421D, R5F6421E, R5F6421F, R5F6421G, R5F6421H

## 5.4 R32C E8a Emulator Debugger V.1.00.01

In this version, the following specifications were changed from the previous version R32C E8a Emulator Debugger V.1.00.00.

This version supports all of the function extensions and the revisions to the restrictions in the High-performance Embedded Workshop V.4.05.00 and V.4.05.01. For more details, please refer to the RENESAS TOOL NEWS “081125/tn1” issued on November 25th, 2008 and “090201/tn3” issued on February 1st, 2009.

### 5.4.1 Supported MCUs Increased

- R32C/118 group:  
R5F64185, R5F64186
- R32C/151, R32C/152, R32C/153 group:  
R5F64514, R5F64515, R5F6451M, R5F6451N  
R5F64524, R5F64525, R5F6452M, R5F6452N  
R5F64534, R5F64535, R5F6453M, R5F6453N
- R32C/156, R32C/157 group:  
R5F64561, R5F64562, R5F64563, R5F6456F, R5F6456G, R5F6456H  
R5F64571, R5F64572, R5F64573, R5F6457F, R5F6457G, R5F6457H
- R32C/160, R32C/161 group:  
R5F64600, R5F6460E, R5F64601, R5F6460F  
R5F64610, R5F6461E, R5F64611, R5F6461F

### 5.4.2 Functional Extensions and Modifications

2. The debuggers can run on Windows Vista® with your user rights.  
Note, however, the 64-bit Windows Vista has not been supported.

## 5.5 R32C E8a Emulator Debugger V.1.00.00

The first version