

## Note on Using E1/E20 Emulator Debugger for RX Family

When using E1/E20 Emulator Debugger for the RX family of MCUs, take note of the following problem:

- With debugging programs for rewriting on-chip ROM areas
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### 1. Products Concerned

The following product are concerned:

- E1/E20 Emulator Debugger for RX family included in CubeSuite+ V.1.01.00
- RX E1/E20 Emulator Debugger V.1.02.00  
(for High-performance Embedded Workshop)

### 2. Description

If you debug any program for rewriting on-chip ROM areas, the following symptoms may appear:

- (1) An illegal command error may arise, which causes the program to rewrite flash ROM incorrectly.
- (2) A bus error may arise.

Illegal command errors arise if a command with incorrect FCU or an incorrect ROM/E2 data flash access is detected. If this error arises, the FSTATR0.ILGLERR bit is set to 1.

### 3. Case in CubeSuite+ V.1.01.00

#### 3.1 Illegal Command Error (Item 2-(1))

Condition:

This error arises if you execute a program for rewriting the program ROM on any MCU of the RX630, RX63N/RX631, or RX210 group.

Workaround:

Before you debug programs for rewriting program ROMs, contact us at:  
<http://www.renesas.com/contact/>

Schedule of Fixing Problem:

We plan to fix this problem in CubeSuite+ V.1.02.00.

-> We have fixed this problem in CubeSuite+ V1.02.00 (released on May 21, 2012.) (follow-up info on Jan. 16, 2013)

### **3.2 Bus Error (Item 2-(2))**

Condition:

This problem may arise if the following conditions are all satisfied:

(1) Set "YES" to any of the following items on the Debug Tool Settings tab of the property panel:

- Debug the program re-writing the on-chip PROGRAM ROM
  - Debug the program re-writing the on-chip DATA FLASH
- and then start the debugger.

(2) Enable the Illegal Address Access Detection function of the Bus Error Monitoring Enable register.

(3) Execute any of the following operations:

(3.1) Download the program to the on-chip ROM area.

(3.2) After setting software breakpoints in the on-chip ROM area, execute the program for rewriting the program ROM.

Workaround:

Do not use the Illegal Address Access Detection function.

If you need to use it, perform either of the following:

(1) After loading the program on the on-chip ROM area, be sure to reset the CPU.

(2) Instead of software breakpoints, set hardware breakpoints in the on-chip ROM area as follows:

1. Open the Property panel.
2. In the [Break][E1][E20] category on the Debug Tool Settings tab, set the Hardware Break to the "Type of breakpoints to be preferentially used."

To check the type of the breakpoints you have set, see the Event area of the Disassemble panel, or the Name area of the Events panel.

Schedule of Fixing Problem:

We plan to fix this problem in CubeSuite+ V.1.02.00.

-> We have fixed this problem in CubeSuite+ V1.02.00 (released on May 21, 2012.) (follow-up info on Jan. 16, 2013)

## **4. Case in RX E1/E20 Emulator Debugger V.1.02.00**

## 4.1 Illegal Command Error (Item 2-(1))

### Condition:

This error arises if you execute a program for rewriting the program ROM on any MCU of the RX630, RX63N/RX631, or RX210 group under any of the following conditions:

- (1) On the View menu, select CPU and then Status to open the Status window.
- (2) On the View menu, select Event and then Performance; next, check the Measure the performance only once checkbox in the Performance dialog box.
- (3) On the View menu, select Events and then On-chip Break; next, open the AND or the Sequential tab of the On-Chip Break dialog box with the event being selected.
- (4) On the View menu, select Events and then Trace Conditions; next, click the Trace Start tab of the Trace conditions dialog box with the event being selected.

### Workaround:

If you debug the program for rewriting the program ROM, perform all of the following:

- (1) Execute the program with the Status window being closed.
- (2) Do not check the Measure the performance only once checkbox in the Performance dialog box.
- (3) Execute the program under the condition that the AND or the Sequential tab of the On-Chip Break dialog box is closed.
- (4) Execute the program under the condition that the Trace Start tab of the Trace conditions dialog box is closed.

### Schedule of Fixing Problem:

We are now studying the cause of this problem and will inform you of the schedule of fixing it later in our tool news.

-> We have fixed this problem in RX E1/E20 Emulator Debugger V.1.03.00 (released on Oct. 16, 2012.)

(Follow-up info on Jan. 16, 2013)

## 4.2 Bus Error (Item 2-(2))

### Condition:

This problem may arise if the following conditions are all satisfied:

- (1) Check any of the following check boxes on Configuration Properties dialog box:
  - Debugging the program re-writing the internal PROGRAM ROM
  - Debugging the program re-writing the internal DATA FLASHand then start the debugger.
- (2) Enable the Illegal Address Access Detection function of the

Bus Error Monitoring Enable register.

(3) Execute any of the following operations:

(3.1) Download the program to the on-chip ROM area.

(3.2) After setting software breakpoints in the on-chip ROM area, execute the program for rewriting the program ROM.

Workaround:

Do not use the Illegal Address Access Detection function.

If you need to use it, perform either of the following:

(1) After loading the program on the on-chip ROM area, be sure to reset the CPU.

(2) Instead of software breakpoints, set on-chip breakpoints in the on-chip ROM area.

Schedule of Fixing Problem:

We are now studying the cause of this problem and will inform you of the schedule of fixing it later in our tool news.

-> We have fixed this problem in RX E1/E20 Emulator Debugger V.1.03.00 (released on Oct. 16, 2012.)

(Follow-up info on Jan. 16, 2013)

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