

Note on Using Simulator Debugger and Emulator Debugger for R32C Series

When using the simulator debugger and emulator debugger for the R32C series of MCUs, take note of the following problem:

- With using the -fI16 (-fint_16) option of the C compiler for the R32C series
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1. Products Concerned

The following products are concerned:

(1) Simulator Debugger for R32C Series

V.1.00 Release 00 and V.1.01 Release 00

This product is included in the C compiler package for the R32C series of MCUs.

(2) E30A Emulator Debugger for R32C/100 Series

V.1.00 Release 00 through V.1.02 Release 00

2. Description

Suppose that you use each function below:

(1) C Watch window

(2) Print command of Script window

If the value of a variable of the signed int type in the program that is built using the -fI16 (-fint_16) option (NOTE) of the compiler is displayed as a hexadecimal value or the value of a register variable of the signed int type in the program is displayed as a decimal value, an incorrect value appears for negative values.

NOTE: With the -fI16 (-fint_16) option, values of the int type are handled as 16-bit values.

3. Examples

For example, the problem occurs when the value of a variable of the

signed int type is as follows:

```
signed int val = 0xFFFF;
```

(1) For a variable of signed int type

When the displayed value is hexadecimal, sign extension will make the value displayed as 0xFFFFFFFF.

(2) For a register variable of signed int type

When the displayed value is decimal, the value is displayed as 65535.

Note however that the problem concerns only the display of the simulator debugger and emulator debugger. There is no problem in the code generated by the compiler.

4. Workaround

(1) For a variable of signed int type

To avoid this problem, reference the value using any of the following methods.

(a) Reference the value as a decimal value.

(b) Reference the value via the popup display of the variable value in the Editor (Source) window.

(c) Enter the following in the text box of the Add new watch point dialog box (NOTE) to register the variable, and then reference it from the C Watch window.

```
(short)val
```

NOTE: To open the Add new watch point dialog box, click the Watch tab in the C Watch window. Then, select Add from the popup menu displayed by clicking the right-hand mouse button in the window.

(d) When using the Print command, enter the following to reference the value:

```
print (short)val
```

(2) For a register variable of signed int type

To avoid this problem, reference the value using either of the following methods:

(a) Reference the value as a hexadecimal value.

(b) Reference the value via the popup display of the variable value in the Editor (Source) window.

5. Schedule for Fixing Problem

We have no plan to fix this problem for the simulator debugger and

emulator debugger for the R32C series of MCUs.

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