[Notes]
C/C++ Compiler Package for RX Family

R20TS0193EJ0100
Rev.1.00
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Outline

When using the CC-RX C/C++ compiler package for the RX family, note the following point.

1. Using the -fint_register option (No.44)

Note: The number which follows the description of a precautionary note is an identifying number for the precaution.

1. Using the -fint_register Option (No.44)

1.1 Applicable Products

CC-RX V2.00.00 to V2.06.00

1.2 Details

The values of registers R10, R11, R12, and R13 specified for the -fint_register option(Note) might be rewritten by a function that is not a fast interrupt function.

Note: The -fint_register option selects a general register that is used only by fast interrupt functions.

1.3 Conditions

This problem may arise if the following conditions are all met.

(1) -fint_register={1,2,3,4} is specified.

(2) A function other than a fast interrupt function exists(Note).

Note: If compiler V2.00.00 is used, a function with #pragma entry specified meets this condition.

(3) One of the following conditions is met.

(3-1) -optimize is not specified, or -optimize={2,max} is specified.

(3-2) The function that meets the condition (2) includes a source description that satisfies one of the following conditions.

(3-2-1) Automatic variables or formal arguments that use the stack to pass values are used in memcpy(), memset(), or memmove().

(3-2-2) An automatic variable of structure or union type is being used for initialization or assignment.

(3-2-3) The stack size to be used by the function(Note) exceeds 65535.

Note: This is the size of the stack area that the function references. You can check this value by using the sum of the following values:

- Numeric value in the .STACK directive of the assembly source output by the complier
- Stack size to be used by a formal argument that uses the stack to pass values

(3-2-4) For structure type with -pack or #pragma pack specified, members are referenced for automatic variables or formal arguments that use the stack to pass values, and return values.

(3-2-5) An automatic variable or a formal argument that uses a stack to pass values is indirectly referenced by using a pointer of another type greater than the alignment of the formal variable.

Example:

```
char a[4];             // Alignment of char[4] is 1
  *((int*)a) = 0;      // Alignment of int is 4
```

1.4 Workarounds

To avoid this problem, take any of the following steps:

(1) Do not specify -fint_register={1,2,3,4}. Alternatively, specify -fint_register=0.

(2) Specify -optimize={0,1} and change the source program so that it does not match any of the conditions (3-2-1) to (3-2-5).

1.5 Schedule for Fixing the Problem

This problem will be fixed in CC-RX V2.07.00. This information will be available from July 20.

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Jul. 16, 2017	-	First edition issued

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