

[Notes]

R20TS0027EJ0100

Rev.1.00

May 16, 2016

C Compiler Package for RH850 Family

Outline

When using the CC-RH C Compiler Package for the RH850 Family, take note of the problem described in this note regarding the following point.

1. Built-in function `__stcw()` (No. 10)

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

1. Built-in Function `__stcw()` (No. 10)

1.1 Applicable Product

CC-RH V1.00.00 and later versions

1.2 Details

Reference to the same value as the second argument of `__stcw()` after the call of the built-in function `__stcw()`, the value referred to may incorrectly become 0 or 1.

1.3 Conditions

This problem arises if the following conditions are all met:

- (1) The built-in function `__stcw()` is used.
- (2) Reference to the same value* as the second argument of the built-in function occurs later than the call of `__stcw()`.

*: Optimization by the compiler affects whether the result of the reference will or will not be the same. This error may occur even if the reference to the second argument is part of a calculation in a formula.

```
long x, y;
void func(long a) {
    __stcw(&x, a); /* Condition (1) */
    y = a;         /* Condition (2) */
}
```

The value of `a` should replace `y`, but `y` is incorrectly replaced by 0 or 1.

1.4 Workaround

To avoid this problem, take either of the following steps.

(1) Specify values to be used as the second argument of `__stcw()` as volatile variables.

```
long x, y;
void func(long a) {
    volatile long v;
    v = a;
    __stcw(&x, v); /* Specify v as the second argument */
    y = a;
}
```

(2) Replace `__stcw()` with an inline assembler function which uses `#pragma inline_asm`.

```
#pragma inline_asm stcw
static void stcw(long* a, long b) {
    stc.w r7, [r6]
}

long x, y;
void func(long a) {
    stcw(&x, a);
    y = a;
}
```

1.5 Schedule for Fixing the Problem

This problem will be fixed in a later version.

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	May 16, 2016	-	First edition issued

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