RENESAS Tool News

RENESAS TOOL NEWS on August 1, 2006 060801/tn3

A Note on Using the C Compiler Packages --M3T-NC308WA and M3T-NC30WA-- for the M16C MCU Family --On Using Two if Statements Successively--

Please take note of the following problem in using the C compiler packages --M3T-NC308WA and M3T-NC30WA--for the M16C MCU family:

- On using two if statements successively

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1. **Products and Versions Concerned**
   - The M3T-NC308WA V.5.00 Release 1 through V.5.20 Release 02 (the C compiler package for the M32C/90, M32C/80, and M16C/80 series)
   - The M3T-NC30WA V.5.00 Release 1 through V.5.30 Release 02 (the C compiler package for the M16C/60, M16C/30, M16C/20, M16C/10, M16C/Tiny, and R8C/Tiny series)

2. **Description**

   Using two if statements successively may not generate any code for conditional jumps.

3. **Conditions**

   This problem occurs if the following conditions are all satisfied:

   (1) Two if statements are successively used in the program.

   (2) The first if statement in (1) has no true statement.

   (3) In the controlling expressions of these two if statements, the same variable is used for two comparisons.

   (4) The variable in (3) is compared with the same variable or the same constant expression.

(5) The operators used in the comparisons in (3) are both ==, or == and !=. O r the operators are omitted.

(6) Any of these optimizing options, -O3, -O4, -O5, -OR, -OS, -OR_MAX(-ORM), and -OS_MAX(-OSM) is used.

Example:

```
------------------------------------------------------------------
long a;
long b;

void func(void)
{
    signed char data =0;
    long l;

    if(b >=0)
        l = b ;
    else
        data = 1;

    if(data){           /* Conditions (1), (3), (4), and (5) */
    }                 /* Condition (2) */

    if(data)            /* Conditions (1), (3), (4), and (5) */
        b = l;
}
------------------------------------------------------------------
```

4. Workaround

Use a dummy asm function as a true statement of the first if statement in Condition (2) above.

5. Schedule of Fixing the Problem

This problem has already been fixed in the latest versions of the Products. So please update yours to either or both of the following:

- The M3T-NC308WA V.5.40 Release 00
- The M3T-NC30WA V.5.40 Release 00A
