RENESAS Tool News

RENESAS TOOL NEWS on February 16, 2005: RSO-M3T-NC308WA-050216D

A Note on Using C-Compiler Packages M3T-NC308WA and M3T-NC30WA

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

- On successive statements each of which contains an operation of multiplication, addition, or subtraction between a variable of type float and a floating constant

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1. **Products and Versions Concerned**
   M3T-NC308WA V.5.00 Release 1 through V.5.20 Release 1
   (for the M32C/90, M32C/80 and M16C/80 series)

   M3T-NC30WA V.5.00 Release 1 through V.5.30 Release 02
   (for the M16C/60, M16C/30, M16C/Tiny, M16C/20, M16C/10 and R8C/Tiny series)

2. **Description**
   Successive statements each of which contains an operation of multiplication, addition, or subtraction between a variable of type float and a floating constant results in incorrect code being generated.

   2.1 Conditions
   This problem occurs if the following conditions are all satisfied:
   (1) Any one or more of the optimizing options -O3, -O4, -O5, -OR and -OS are selected.
   (2) Any of the following series of statements exists:
      a. Successive statements each of which contains an operation of multiplication between a variable of type float and a floating constant
      b. Successive statements each of which contains an operation of addition between a variable of type float and a floating constant
      c. Successive statements each of which contains an operation of subtraction

between a variable of type float and a floating constant

(3) The result of each operation in (2) is assigned to the same variable.

2.2 Example

```
------------------------------------------------------------------
float   f;

void  func(void)
{
     f = f * 10;       /* Conditions (2)-a and (3) */
     f = f * 20;       /* Conditions (2)-a and (3) */
}
------------------------------------------------------------------
```

3. Workaround

This problem can be circumvented in either of the following ways:

(1) Insert a dummy asm function between two successive statements of operations.

Example:

```
------------------------------------------------------------------
float   f;

void  func(void)
{
     f = f * 10;
     asm();          /* Dummy asm() inserted */
     f = f * 20;
}
------------------------------------------------------------------
```

(2) Use compile option -Ono_break_souce_debug (-ONBSD) in addition.

4. Schedule of Fixing the Problem

We plan to fix this problem in our next release of the products.

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