RENESAS Tool News

RENESAS TOOL NEWS [August 16, 2003: RSO-M3T-NC30WA-030816D]

A Note on Using C Compiler M3T-NC30WA V.5.10 Release 1

Please take note of the following problem in using the M3T-NC30WA C compiler (with an assembler and integrated development environment) for the M16C/60, M16C/30, M16C/20, and M16C/10 series MCUs:

- On writing assignment statements successively

1. Description

Writing assignment statements successively results in incorrect code being generated.

2. Conditions

This problem occurs if the following six conditions are satisfied:

(1) Any of the -O, -O1 through -05, -OR, and -OS optimizing options is used.

(2) Two or more assignment statements are written successively.

(3) The destination of the first assignment statement (assignment statement A) and the source of the second assignment statement (assignment statement B) are the same auto variable (variable C).

(4) The source of assignment statement A is either an array or a indirection reference, and variable C is used as the offset of the array or the indirection reference.

(5) A memory address is allocated to variable C.

(6) The type of variable C is any of the following and is not qualified as volatile:

unsigned char, signed char,
unsigned int, signed int,
unsigned short, signed short,
unsigned long, signed long,
unsigned long long, and signed long long

3. Example

```
-------------------------------------------------------
  extern char  bbb;
  extern char  aaa[];

  void func(void)
  {
    char c;      /* Condition (6) */

    c = aaa[c];  /* Conditions (2), (3), and (4) */
    bbb = c;     /* Conditions (2), and (3) */
  }
-------------------------------------------------------
```

4. Workaround

Place a dummy asm function between two successive assignment statements.

```
-------------------------------------------------------
  void func(void)
  {
    char c;

    c = aaa[c];
    asm();       /* Dummy asm function */
    bbb = c;
  }
-------------------------------------------------------
```

5. Schedule of Fixing the Problem

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

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