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A Note on Using the C Compiler Package M3T-NC30WA

Please take note of the following problem in using the C compiler package M3T-NC30WA, which is used for the M16C/60, M16C/30, M16C/20, M16C/10, M16C/Tiny, and R8C/Tiny series of MCUs:

• On comparing a constant with the return value from a function in an if statement

1. Versions Concerned

M3T-NC30WA V.5.10 Release 1--V.5.40 Release 00

2. Description

When the controlling expression of an if statement consists of a comparison of a constant with the return value from a function, and the substatement is an expression for assigning a constant to a variable, incorrect code may be generated for the assignment.

2.1 Conditions

This problem occurs if the following conditions are all satisfied:

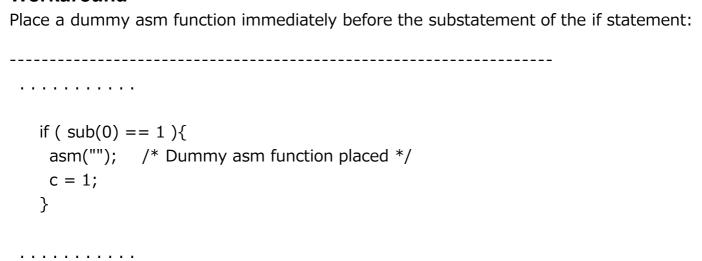
- (1) Any one of the following optimizing options is selected:
 - -01, -02, -03, -04, -05, -OR, and -OS
- (2) In the program exists an if statement that has no else statement.
- (3) The controlling expression of the if statement in(2) consists of a comparison of a constant with the return value from a function.
- (4) An equality (==) or inequality (!=) operator is used for the comparison in (3).

- (5) The substatement of the if statement in (2) is only an expression for assigning a constant to a variable.
- (6) The variable in (5) is any one of the following types: unsigned char, signed char, unsigned int, and signed int
- (7) The variable in (5) is the return value from another function.
- (8) Another assignment expression same as the one described in (5) exists before the if statement in (2).

2.2 Example

```
unsigned char sub(int);
inline unsigned char func( unsigned char c )
{
 switch(c){
  case 0:
                    /* Condition (8) */
   c = 1;
   break;
  case 1:
   if (sub(0) == 1){ /* Conditions (2), (3), and (4)
*/
                    /* Conditions (5), (6), and (7) */
    c = 1;
   }
   break;
  default:
   break;
 }
 return( c ); /* Condition (7) */
```

3. Workaround



4. Schedule of Fixing the Problem

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

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