

A Note on Using the M3T-NC308WA and M3T-NC30WA C-Compiler Packages --On Evaluation of Members of a Structure in the Controlling Expression of an If Statement--

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

- On evaluation of members of a structure in the controlling expression of an if statement
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1. Products and Versions Concerned

M3T-NC308WA V.3.10 Release 1 through V.5.10 Release 1
(for the M32C/90, M32C/80 and M16C/80 series)

M3T-NC30WA V.5.00 Release 1 and V.5.10 Release 1
(for the M16C/60, M16C/30, M16C/Tiny, M16C/20, M16C/10, and R8C/Tiny series)

2. Description

If two or more expressions testing equality or inequality between a member of a structure and a constant exist in the controlling expression of an if statement, incorrect code is generated.

3. Conditions

This problem occurs if the following conditions are all satisfied:

- (1) Two or more expressions testing equality or inequality between a member of a structure and a constant exist in the controlling expression of an if statement.
- (2) The members in (1) are of type unsigned char or signed char; not of type array.
- (3) The members in (1) are placed at successive addresses.
- (4) All the equality/inequality-testing expressions in (1) are

associated with one another using the logical OR operators.

- (5) Compile option -O4 or -O5 is used; or any of those, -O1, -O2, -O3, -OR, and -OS, is used with -Ocompare_byte_to_word (-OCBTW).

Example

```
-----  
struct    S  
{  
    char  a;    /* Conditions (2) and (3) */  
    char  b;    /* Conditions (2) and (3) */  
    char  c;  
} s;  
  
int i;  
  
void func(void)  
{  
    if(( s.a == 0x01 ) || (s.b == 0x01)) /* Conditions (1) and (4) */  
        i = 10;  
    else  
        i = 20;  
}  
-----
```

4. Workaround

Use compile option -Ono_logical_or_combine (-ONLOC) in addition.

5. Schedule of Fixing the Problem

This problem has already been resolved in the V.5.20 Release 1 and later of both the M3T-NC308WA and M3T-NC30WA. So upgrade yours to these online from Software download for tools.

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