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A Note on Using the M3T-NC308WA and M3T-NC30WA C-Compiler Packages --On Evaluation of Elements of an Array 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 Elements of an Array 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 an element of an array 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 an element of an array and a constant exist in the controlling expression of an if statement.
- (2) The array in (1) is of type unsigned char or signed char.
- (3) The subscripts to the elements of the array in (1) are continuous numbers.

- (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:

```
-----  
int i;  
char c[10];          /* Conditions (2) and (3) */  
  
void func(void)  
{  
    if( c[0] == 0x1 || c[1] == 0x0 ) /* Conditions (1) and (4) */  
        i = 1;  
    else  
        i = 0;  
}
```

4. Workaround

This problem can be circumvented either of the following ways:

- (1) If compile option -O4 or -O5 used, don't associate the equality/inequality-testing expressions with one another using the logical OR operators; that is, separate them individually.

Example:

```
-----  
-----  
int i;  
char c[10];  
  
void func(void)  
{  
    if( c[0] == 0x1 )  
        i = 1;  
    else if( c[1] == 0x0 )  
        i = 1;  
    else
```

```
        i = 0;
    }
-----
-----
```

- (2) If any of the compile options -O1, -O2, -O3, -OR, and -OS is selected with -OCBTW, deselect -OCBTW.

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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