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

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. 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:

```c
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) 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).
(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.