A Note on Using C Compiler
M3T-NC30WA
--On Using Standard Library Function "strcpy"--

Please take note of the following problem in using C compiler (with an assembler and integrated development environment) M3T-NC30WA for the M16C/60, M16C/30, M16C/Tiny, M16C/20, M16C/10, and R8C/Tiny series MCUs:

- On using standard library function "strcpy"

1. Versions Concerned
   M3T-NC30WA V.5.10 Release 1 and V.5.20 Release 1

2. Description
   Using standard library function "strcpy" may cause System Error to arise.

3. Conditions
   This problem occurs if the following four conditions are satisfied:
   (1) Optimizing options -OS and -O5 are both selected.
   (2) Standard library function "strcpy" is used.
   (3) The first argument of the strcpy function is an expression that contains a pointer-type external variable.
   (4) The second argument of the function is a string literal.

4. Examples
   Example 1:
   -----------------------------
   #include <string.h>
struct SS {
    int   i;
    char c[20];
};
struct SS *ps;
void func(void)
{
    strcpy(ps->c,"abcdefghijkl");
}

Example 2:
char *p;
void func(void)
{
    strcpy(p+2,"abcdefghijkl");
}

5. **Workaround**

This problem can be circumvented in either of the following ways:

1. Replace -O5 with any of those, -O1, O2, O3, and O4.

2. Use a dummy asm function as follows:
   (a) Define a temporary pointer variable.
   (b) Assign the string literal to the pointer variable in (a).
   (c) Place a dummy asm function immediately after the assignment in (b).
   (d) Pass the temporary pointer variable in (a) to the strcpy function as its second argument.

Example:
char *p;
void func(void)
{
    const char *tmp;
    tmp = "abcdefghijkl";
    asm(); /* Dummy asm function */
    strcpy(p+2,tmp);
}
6. **Schedule of Fixing the Problem**

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

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