RENESAS Tool News

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"

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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");
}
```
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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.