

A Note on Using the C compiler Package for the M16C Series of MCUs --With Using Start-Up Files--

Please take note of the following problem in using the C compiler package for the M16C series of MCUs:

- With using start-up files

1. Product and Versions Concerned

The C compiler package--M3T-NC30WA--for the M16C series*
V.5.40 Release 00 and V.5.40 Release 00A

*The M16C series is the generic name of the M16C/60, /30, /20, /10, /Tiny, and R8C/Tiny series.

2. Description

If you use any C-language start-up file generated by the High-performance Embedded Workshop to initialize sections in the far area, the program may run away.

3. Condition

This problem occurs if you initialize any section in the far area using macro function `sclear_f()` or `scopy_f()`.

4. Workaround

Modify the descriptions of macro functions in the `initsct.h` file as follows:

```
- In macro function sclear_f()  
  #define sclear_f(X,Y)  _asm("  .initsct "X","Y"¥n"¥  
    "      push.w  #(sizeof "X")>>16¥n"¥  
    "      push.w  #(sizeof "X")&0ffffH¥n"¥
```

```

"    push.w #(topof "X")>>16¥n"¥
"    push.w #(topof "X")&0ffffH¥n"¥
"    .stk  8¥n"¥
"    .glb  _bzero¥n"¥  ----- (1)-1
"    .call _bzero,G¥n"¥ ----- (1)-2
"    jsr.a _bzero¥n"¥  ----- (1)-3
"    add.b #8H,SP¥n"¥  ----- (2)-1
"    .stk  -8");      ----- (2)-2

```

NOTES:

- (1) In (1)-1, -2, and -3, replace `_bcopy` with `_bzero`.
 Since the last of (1)-3 is wrapped to (2)-1, end it not with ");
 but with `¥n"¥`, which concatenates character strings.
- (2) In (2)-1, add the correction code of the stack pointer, and
 in (2)-2, add stack correction information `.stk`.

- Macro function `scopy_f()`

```

#define scopy_f(X,Y)  _asm(" .initsct "X","Y"¥n"¥
"    .initsct "X"I,rom"Y"¥n"¥
"    push.w #(sizeof "X") >> 16¥n"¥
"    push.w #(sizeof "X") & 0ffffH¥n"¥
"    push.w #(topof "X") >> 16¥n"¥
"    push.w #(topof "X") & 0ffffH¥n"¥
"    push.w #(topof "X"I) >> 16¥n"¥
"    push.w #(topof "X"I) & 0ffffH¥n"¥
"    .stk  12¥n"¥
"    .glb  _bcopy¥n"¥
"    .call _bcopy,G¥n"¥
"    jsr.a _bcopy¥n"¥  ----- (3)
"    add.b #0cH,SP¥n"¥  ----- (4)-1
"    .stk  -12");      ----- (4)-2

```

NOTES:

- (3) Since the last of (3) is wrapped to (4)-1, end it not with ");
 but with `¥n"¥`, which concatenates character strings.
- (4) In (4)-1, add the correction code of the stack pointer, and
 in (4)-2, add stack correction information `.stk`.

5. Schedule of Fixing the Problem

This problem has already been fixed in V.5.42 Release 00 and later,
 so use the most recent version of the product.

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