

A Note on Using Cross-Tool Kit M3T-CC32R

Please take note of the following problem in using the M3T-CC32R cross-tool kit for the M32R family MCUs:

- On compiling a switch statement containing 415 or more case labels
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1. Versions Concerned

M3T-CC32R V.4.00 Release 1 and V.4.10 Release 1

2. Description

When a switch statement containing 415 or more case labels is compiled with the level 4 option selected, the compiler returns a "1" that refers to an error and discontinues its operation. At this time, no error message is displayed.

If the TM "builds" or the make command "makes" a program including such a switch statement, the build or make operation halts displaying a message saying the compiler has returned an error.

2.1 Conditions

This problem occurs if the following three conditions are satisfied:

- (1) Any optimizing option covering the -O4 option's function (-O4, -O5, -O6, -O7, -Otime only or -Ospace only) is selected at compilation.
- (2) The -noinline option that suppresses the inline expansion function is not selected at compilation.
- (3) In the program exists a switch statement that contains 415 or more case labels.

2.2 Example

Source file: sample.c

```
-----  
int x;  
void func(void)  
{
```

```

switch(x) {
    case 1:      /* Condition (3) */
        ;
    case 2:      /* Condition (3) */
        ;
    case 3:      /* Condition (3) */
        ;
    case 4:      /* Condition (3) */
        ;
    // :
    // :
    // (Omitted)
    // :
    // :
    case 415:    /* Condition (3) */
        ;
}
}

```

In the above sample.c file, the statements of cases 5 through 414 are omitted for simplicity. We furnish the complete sample.c file that is sure to raise this problem. Then, download it from [HERE](#) and see the problem occurs.

3. Workaround

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

- (1) Select the `-noinline` option to suppress the inline expansion function. Selecting the `-noinline` option neglects the keyword "inline". However, because this does not produce any error, you need not modify the source program containing this keyword.
- (2) Don't use the `-O4`, `-O5`, `-O6` or `-O7` optimizing option. If you want to use `-Otime` or `-Ospace`, select any of these options, `-O0`, `-O1`, `-O2`, and `-O3`, at the same time.
- (3) Split the case labels into more than one switch statement so that no switch statement would contain 415 or more case labels.

Example: Modification of sample.c

```

int x;
void func(void)
{

```

```
switch(x) {
  case 1:
    ;
  case 2:
    ;
}
switch(x) { /* Another switch statement created
            to contain cases 3 through 415 */
  case 3:
    ;
  case 4:
    ;
  //   :
  //   :
  // (Omitted)
  //   :
  //   :
  case 415:
    ;
}
}
```

4. Schedule of Fixing the Problem

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

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