

[Note]

R20TS0652EJ0100

Rev.1.00

## C Compiler Package for RL78 Family (CCRL#026)

Jan. 16, 2021

### Overview

When using the C compiler package for RL78 family CC- RL, note the following point.

1. Using the -Ointermodule option (CCRL#026)

Note: The number following the note is an identification number for the note.

### 1. Using the -Ointermodule option (CCRL#026)

#### 1.1 Applicable products

CC-RL V1.01.00 to V1.09.00

#### 1.2 Details

When the -Ointermodule option is used, access to static variables may be deleted incorrectly.

#### 1.3 Conditions

If all of the conditions from (1) to (8) are met, access to a variable in condition (7) may be deleted incorrectly.

- (1) -Ointermodule or -Owhole\_program is specified. <sup>(Note 1)</sup>
- (2) -Onothing is not specified.
- (3) There is a structure-type or union-type having a pointer-type member.
- (4) The pointer-type member in (3) is not const-qualified.
- (5) There is a const-qualified static variable<sup>(Note 2)</sup> of the structure-type or union-type in (3).
- (6) The initial value of the pointer-type member (3) of the static variable in (5) is the address of a variable.
- (7) The variable with the address in (6) is a static variable<sup>(Note 2)</sup> that is not const-qualified.
- (8) There is a const-qualified pointer-type static variable<sup>(Note 2)</sup> whose initial value is the address of the static variable in (5).

Note 1: When -Owhole\_program is specified, -Ointermodule is also implicitly specified.

Note 2: A static variable corresponds to a global variable or a 'static' variable.

## 1.4 Examples

An example of the problem is shown below. The parts corresponding to the error conditions are shown in red.

### Example

ccrl -cpu=S3 -Osize -Ointermodule tp.c (1) (2)

```

/* tp.c */
int GGG; /* (7) */
typedef struct { /* (3) */
    int* mmm; /* (4) */
}Str;
const Str SSS = { /* (5) */
    &GGG /* (6) */
};
const Str* PPP = &SSS; /* (8) */

int func(void) {
    GGG = 1;
    *(PPP->mmm) = 2;
    return GGG;
}

```

In this example, although function func() is supposed to return 2 because PPP->mmm points to the address of the variable GGG, it returns 1.

## 1.5 Workaround

You can avoid this problem by one of the following methods:

- (a) Do not specify either -Ointermodule or -Owhole\_program.
- (b) Specify -Onothing.
- (c) Remove the const qualifier from the structure-type or union-type static variable in condition (5).
- (d) Remove the const qualifier from the pointer-type static variable in condition (8).

## 1.6 Schedule for fixing the problem

This problem will be fixed in CC-RL V1.10.00. This version will be released in January 2021.

**Revision History**

Rev.	Date	Description	
		Page	Summary
1.00	Jan.16.21	-	First edition issued

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