

[Notes]

R20TS0394EJ0100

Rev.1.00

Jan. 16, 2019

C Compiler Package for RL78 Family

Outline

When using the C compiler package for RL family CC-RL, note the following points:

1. Point for caution when the -misra2012 option is specified. (CCRL#023)

Note: The number following the note is an identifying number for the precautionary note.

1. Point for caution when the -misra2012 option is specified. (CCRL#023)

1.1 Applicable Products

CC-RL V1.03.00 to V1.07.00 [Professional edition] (Rule 16.1 and 16.4)

CC-RL V1.06.00 to V1.07.00 [Professional edition] (Rule 15.6, 15.7, and 16.2)

1.2 Details

When checking source code against MISRA-C:2012 rules by specifying -misra2012 option, the compiler may output a message for a code which does not violate the rules and may not output a message for a code which violates the rules.

MISRA-C is a set of software development guidelines whose purpose is to maintain the safety, portability and reliability of embedded systems programmed in the C language.

1.3 Conditions

An error occurs when the following rules are specified.

- Rule 15.6
No message is output for a code which violates the rule if the -lang=c99 option is specified.
- Rule 15.7
No message is output for a code which violates the rule if the -lang=c99 option is specified.
- Rule 16.1
No message is output for a code that violates the rule if all of the following conditions are met:
 - (1) “{” is written immediately after a switch statement (controlling expression).
 - (2) Both a case clause and a default clause are written in the switch statement (1).
 - (3) Each case clause and default clause in (2) ends with a break statement or a compound statement ^(Note1) (block) which includes a break statement at the end.
 - (4) At least one of the case clauses or default clauses in (3) meets all the conditions below.
 - (4-1) A compound statement (block) which is neither a selection statement (if or switch) nor a repeat statement (while, do-while, or for) is written at the end.
 - (4-2) A statement is written before the compound statement (block) in (4-1).

- Rule 16.2

No message is output for a code that violates the rule if all of the following conditions are met.

- (1) The -lang=c99 option is specified.
- (2) A case or default label is written immediately after switch (controlling expression) without “{”.

- Rule 16.4

A message may be output for a code that does not violate the rule if either of the following conditions is met:

- (1) -lang=c is specified and a compound statement (block) is written in the function definition.
- (2) -lang=c99 is specified, and a compound statement (block), selection statement (if or switch), or repeat statement (while, do-while, or for) is written in the function definition.

This includes a case where a selection statement or repeat statement is written without “{ }”.

Note: A compound statement refers to a statement enclosed with “{ }”. An if statement enclosed with “{ }” is also a compound statement.

1.4 Example

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

[C source code] (rule 16.1)

1:	int x;	
2:	void func(void) {	
3:	switch(x) {	// Condition (1)
4:	case 1:	// Condition (2)
5:	++x;	// Condition (4-2)
6:	{	// Condition (4-1)
7:	--x;	
8:	break;	// Condition (3)
9:	}	// Condition (4-1)
10:	default:	// Condition (2)
11:	break;	// Condition (3)
12:	}	// Condition (1)
13:	}	

Although the C source code above violates rule 16.1 of MISRA C: 2012, no message is output.

Lines 3 and 12: Condition (1) is met because “{” is written immediately after switch (controlling expression).

Lines 4 and 10: Condition (2) is met because both a case clause and a default clause are written.

Lines 8 and 11: Condition (3) is met because the case clause and default clause end with a break statement.

Lines 6 and 9: Condition (4-1) is met because the case clause ends with a compound statement (block).

Line 5: Condition (4-2) is met because a statement is written before a compound statement (block).

[C source code] (rule 16.2)

1:	int x;	
2:	void func(void) {	
3:	switch(x)	// Condition (2)
4:	case 1:	// Condition (2)
5:	break;	
6:	}	

The C source code above violates rule 16.2 of MISRA C:2012. Although a message is output when -lang=c is specified, no message is output when -lang=c99 is specified.

Lines 3 and 4: Condition (2) is met because a case label is written without “{” immediately after switch (controlling expression).

1.5 Workaround

There is no workaround for this problem.

1.6 Schedule for Fixing the Problem

This problem is fixed in CC-RL V1.08.00. (Scheduled to be released on January 21.)

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Jan. 16, 2019	-	First edition issued

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