# CubeSuite+ 78K0 Compiler CA78K0 V1.21
Release Note

R20UT0879EJ0100
Rev.1.00
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## Contents

# Chapter 1. Target Devices

The target devices supported by the CA78K0 are listed on the Website.

Please see this URL.

CubeSuite+ Product Page:

http://www.renesas.com/cubesuite+

# Chapter 2. User's Manuals

Please read the following user's manuals together with this document.

| Manual Name | Document Number |
|---|---|
| CubeSuite+ V1.01.00 78K0 Coding Edition | R20UT0782EJ0100 |
| CubeSuite+ V1.01.00 78K0 Build Edition | R20UT0783EJ0100 |
| CubeSuite+ V1.01.00 Message | R20UT0736EJ0100 |

# Chapter 3. Key Word for Uninstallation

There are two ways to uninstall this product.

- Use the integrated uninstaller (uninstalls CubeSuite+)
- Use separate uninstaller (uninstalls this product only)

To use the separate uninstaller, select the following from the Control Panel:

- Add/Remove Programs (Windows XP)
- Programs and Features (Windows Vista, Windows 7)

Then select "CubeSuite+ CA78K0 V1.21".

# Chapter 4. Changes

This chapter describes change from V1.20 to V1.21.

There is a possibility that the code is changed by the following.

## 4.1 Caution eliminated

The restriction described below has been eliminated.

Caution for error of the list converter.

Description: The path name length of the “Bin” folder that ‘**.exe*’ for CA78K0 in CubeSuite+ is located in should be within 67 characters. If the list converter is executed, it becomes an error.

# Chapter 5. Cautions

This section describes cautions for using CA78K0 V1.21.

## 5.1 Caution for the Memory bank relocation support tool

Caution for the Memory bank relocation support tool

Description: In the re-link function, it may become an error if a memory bank relocation support tool is started to a flash area.

# Chapter 6. Restrictions

This section describes the restrictions for the CA78K0.

## 6.1 Restrictions for the CA78K0

Below is a list of restrictions for the CA78K0 V 1.21

### 6.1.1 List of restrictions for the CA78K0

#### (1) List of restrictions for Assembler

| No. | **Description** |
|---|---|
| 1 | An error occurs if a control statement is crossed in a structured assembly language description.(Only PM+ version) |
| 5 | The assembler performs illegal processing if the label receiving the effect of optimization is described in the *saddr* part when an EQU definition is performed for a bit symbol with the value *saddr.bit*. |

#### (2) List of restrictions for Compiler

| No. | **Description** |
|---|---|
| 16 | Bit fields with type *signed* are handled as unsigned bit fields. |
| 43 | Output conversion on I/O functions in the standard libraries causes illegal behavior. |
| 44 | The size of the minimum value (-32768) of types *int/short* is 4. |
| 47 | If the parameter type and the type of the identifier in a function definition do not match, an error is output. |
| 48 | In an identifier list in a function definition, a parameter that is not declared is not handled as type *int*, and an error results. |
| 49 | The # operator cannot be expanded correctly. |

### 6.1.2 Restriction Details for the CA78K0

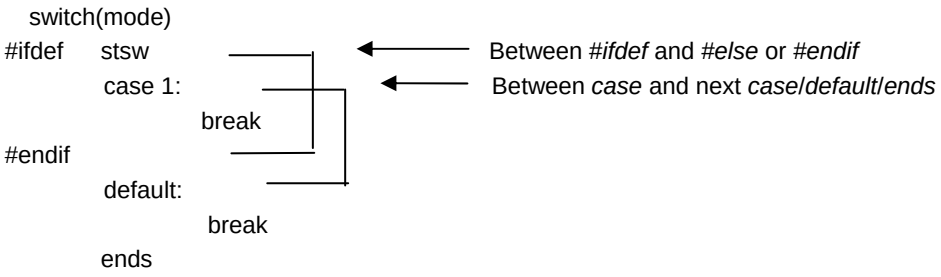
Below are details for the limitations for CA78K0 V1.21.

#### (1) Restriction details for Assemblert

No. 1 A multidimensional array without the size defined may exhibit incorrect behavior

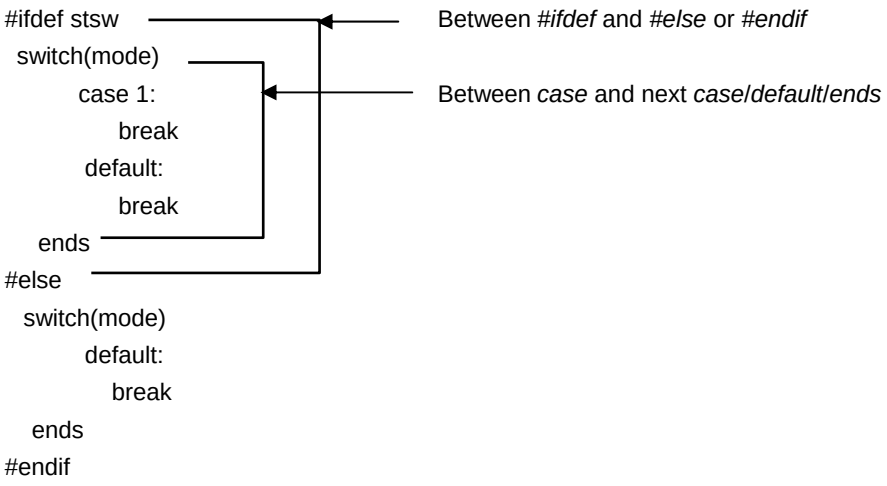
**[Description]** If a control statement is divided or crossed by code between *#ifdef* and *#endif*, an error occurs if *#ifdef* is true.

*Example:*




**[Work-around]** Nesting will not cause an error. Rewrite the source so that the scopes of the control statements do not cross.

*Example:*



No. 5 The assembler performs illegal processing if the label receiving the effect of optimization is described in the saddr part when an EQU definition is performed for a bit symbol with the value saddr.bit.

**[Description]** The assembler performs illegal processing if the label receiving the effect of optimization is described in the *saddr* part when an EQU definition is performed for a bit symbol with the value *saddr.bit*.

Illegal processing is performed in the following cases.

(1) When *saddr.bit* is 0FD20H, path 1 of a label is outside the area, and path 2 is inside the area, an error is output in path 1 for the EQU definition line, but not in path 2. At this time, the object is created but it is incorrect.

(2) When *saddr* is 0FF1FH, path 1 of a label is inside the area, and path 2 is outside the area, no error is output in path 1 for the EQU definition line, while an error is output in path 2. The following assembly error will be output for a label that is defined after this EQU symbol has been referenced.

[F410 Phase error]

When this label is referenced, the object becomes incorrect.

**[Work-around]** None.

## (2) Restriction details for Compiler

No. 16 Bit fields with type *signed* are handled as unsigned bit fields.

**[Description]** Bit fields with type *signed* are handled as unsigned bit fields.

**[Workaround]** None.

No. 43 Output conversion on I/O functions in the standard libraries causes illegal behavior.

**[Description]** When output conversion is performed for the *printf*, *sprintf*, *vprintf*, and *vsprintf* functions, operation will become illegal under the following conditions.

If precision is specified as ".2" for the *d*, *i*, *o*, *u*, *x* or *X* conversion specifier, the 0 flag will not be ignored.

*Example:*

```
#include <stdio.h>

void func()

{

   printf("%04.2d\n", 77);

}
```

**Remark** Illegal operation: "0077"

Correct operation: "  77"

For the *g*, and *G* conversion specifiers, the result is "specified precision + 1".

*Example:*

```
#include <stdio.h>

void func()

{

   printf("%.2g", 12.3456789);

}
```

**Remark** Illegal operation: "12.3"

Correct operation: "12"

**[Workaround]** None.

No. 44 The size of the minimum value (-32768) of types *int*/*short* is 4

**[Description]** The size of the minimum value (-32768) of types *int*/*short* is 4.

*Example:*

```
int x;
void func()
 {
       x = sizeof(-32768);
  }
```

**Remark** Illegal operation: The value of *x* is 4

Correct operation: The value of *x* is 2

**[Workaround]** Write as (-32767-1).

No. 47 If the parameter type and the type of the identifier in a function definition do not match, an error is output.

**[Description]** Because argument promotion is not performed for the type of an identifier in a function definition, the parameter type and the type of the identifier in the function definition do not match, thus causing the E0747 error.

*Example:*

```
int  fn_char(int);
int  fn_char(c)
char c;
{
        return 98;
}
```

**[Workaround]** Make sure that the type of the parameter matches that of the identifier in the function definition.

No. 48 In an identifier list in a function definition, a parameter that is not declared is not handled as type *int*, and an error results.

**[Description]** In an identifier list in a function definition, a parameter that is not declared is not handled as type *int*, thus causing the E0706 error.

*Example:*

```
void func(x1, x2, f, x3, lp, fp)
int (*fp)( );
long *lp;
float f;
{
        :
}
```

**[Workaround]** Declare all parameters in a function definition.

No. 49 The # operator cannot be expanded correctly.

**[Description]** Expansion will not be performed correctly under either of the following conditions.

1. [""] cannot be expanded correctly with the # operator, causing a compile error.

*Example for condition 1:*

```
#include <string.h>
#define str( a) (# a)
int x;
void func()
{
        if (strcmp(str(""), "\"") == 0) x++;
}
```

**Remark:** Illegal operation: Compile error
Correct operation: if (strcmp( ("\"") , "\"") == 0) x++;

2. Macros that contain a # operator and a nested structure cannot be expanded correctly.

*Example for condition 2:*

```
#define str(a) #a
#define xstr(a) str(a)
#define EXP 1
char *p;
void func()
{
      p = xstr(12EEXP);
}
```

**Remark:** Illegal operation: "p = ("12E1");"
Correct operation: "p = ("12EEXP");"

**[Workaround]** None.

## 6.2 Restrictions for the Memory Bank Relocation Support Tool

Below is a list of restrictions for the Memory Bank Relocation Support Tool.

### 6.2.1 List of restrictions for the Memory Bank Relocation Support Tool

| No. | Description |
|---|---|
| 1 | Restriction relating to *__flashf* function |
| 2 | Restriction relating to specifying options. |
| 3 | Restriction relating to link directives. |
| 4 | Restriction relating to *callt* area. |

### 6.2.2 Detail of restrictions for the Memory Bank Relocation Support Tool

See below for details of restrictions for the Memory Bank Relocation Support Tool.

No. 1 Restriction relating to *__flashf* function

**[Description]** The *__flashf* function must be allocated to the common area, but is relocated to an area other than the common area because the Memory Bank Relocation Support Tool cannot identify the *__flashf* function. Therefore, an error may occur during build.

**[Workaround]** Open the C source file properties for the file that includes the *__flashf* function, and from the [Build Properties] tab, under the [Memory Bank] category, set [Select common/bank Area] to "Common area".

No. 2 Restriction relating to specifying options.

**[Description]** The Memory Bank Allocation Support Tool does not analyze the options specified in the [Other options] box in the Compiler/Assembler/Linker Options dialog boxes.

**[Workaround]** Do not input options into the [Other options] box if they can be specified in other areas in the option dialog boxes.

No. 3 Restriction relating to link directives.

**[Description]** The link directive file is not supported. The Memory Bank Allocation Support Tool relocates C source files based on the memory area defined in the device file. (One example of this limitation is that the relocation of *const* data, initialization data, and the like outside of functions is not supported if it is allocated to the bank area.)

**[Workaround]** From the [Memory Bank Options] tab, from the [Margin] category, adjust the free space in each area.

No. 4 Restriction relating to *callt* area.

**[Description]** If the section name of *@@CALT* is changed as a result of a *#pragma* section specification or quasi directive, the Memory Bank Relocation Support Tool will output an illegal value to the reference information file as the reference count of a function called via a *callt* area.

**[Workaround]** Do not change the section name of *@@CALT*.

# Chapter 7. Changes in User's Manual

This section describes errata in CubeSuite+ documentation. The same content is also contained in the Help file, and should be replaced by this content.

## 7.1 Modifications in Build

### 7.1.1 Added description about [Memory Model] category of the [Compile Options] tab

**[Location]** Page 189 → [Output object for flash]

**[After addition]** Select whether to output the object for flash.

This corresponds to the -zf option of the compiler.

**If [Yes (-zf)] is selected**

- **On the [Compiler Options] tab, in the [Startup] category, if the [Use standard startup] property is not set to [No], it is set to [Yes (for Flash area)].**
- **On the [Link Options] tab, in the [Device] category, set the [Set Flash start address] property to [No].**

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