

[Notes]

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CS+ Code Generator for RL78 (CS+ for CC),  
 CS+ Code Generator for RL78 (CS+ for CA, CX),  
 e<sup>2</sup> studio Code Generator Plug-in,  
 Applilet3 Coding Assistance Tool for RL78,  
 AP4 Coding Assistance Tool for RL78

## Outline

When using the products in the title, note the following points.

1. When using IICA0 or IICA1 as a Single Master System
2. When using the R\_ADC\_Set\_ADChannel function in the A/D converter

## 1. When Using IICA0 or IICA1 as a Single Master System

### 1.1 Applicable Products

- CS+ Code Generator for RL78 V3.02.00 (CS+ for CC V3.00) or later
- CS+ Code Generator for RL78 V3.02.00 (CS+ for CA, CX V3.00) or later
- Code Generator plug-in V1.0.1 (e<sup>2</sup> studio V2.2.0) or later
- Applilet3 for RL78 V1.01.00 or later
- AP4 for RL78 V1.00.00 or later

### 1.2 Applicable Devices

- RL78 family:  
 RL78/F12, RL78/F13, RL78/F14, RL78/F15,  
 RL78/G10, RL78/G11,  
 RL78/G1A, RL78/G1C, RL78/G1D, RL78/G1F, RL78/G1H,  
 RL78/H1D,  
 RL78/I1A, RL78/I1B, RL78/I1C,  
 RL78/L12, RL78/L13, RL78/L1A and RL78/L1C groups

### 1.3 Details

When using the Serial Interface IICA0 (IICA0) or IICA1 (IICA1) as a single master system (\*), incorrect code will be generated. Because the order of the bit setting (below) differs from that in User's Manual: Hardware of applicable devices, it may affect the operation of the 'control of wait and interrupt request generation of serial interface IICA'.

\* Displayed as 'Single Master' in the code generator GUI.

- For IICA0:  
 IICCTL00 Register: WTIM0 and WREL0 bit
- For IICA1:  
 IICCTL10 Register: WTIM1 and WREL1 bit

## 1.4 Conditions

The error occurs when using the Serial Interface IICA0 (IICA0) or IICA1 (IICA1) as a single master system. This error does not occur in Slave Mode.

## 1.5 Workaround

Fix the code to correct the order of the bit setting.

Note: When code is generated again, generated code returns to the state before correction. Therefore, correct the source file each time you generate code.

- When using 'IICA0' as a single master
  - After code is generated, open `iica0_masterhandler(void)`, and then modify the code shown in the red box below.

Before modification

```
static void iica0_masterhandler(void)
{
    /* Master receive control */
    else
    {
        if (g_iica0_rx_cnt < g_iica0_rx_len)
        {
            *gp_iica0_rx_address = IICA0;
            gp_iica0_rx_address++;
            g_iica0_rx_cnt++;

            if (g_iica0_rx_cnt == g_iica0_rx_len)
            {
                ACKEO = 0U;
                WRELO = 1U;
                WTIMO = 1U;
            }
        }
    }
}
```

After modification

```
static void iica0_masterhandler(void)
{
    /* Master receive control */
    else
    {
        if (g_iica0_rx_cnt < g_iica0_rx_len)
        {
            *gp_iica0_rx_address = IICA0;
            gp_iica0_rx_address++;
            g_iica0_rx_cnt++;

            if (g_iica0_rx_cnt == g_iica0_rx_len)
            {
                ACKEO = 0U;
                WTIMO = 1U;
                WRELO = 1U;
            }
        }
    }
}
```

- When using 'IICA1' as a single master  
 After code is generated, open iica1\_master\_handler(void), and then modify the code shown in the red box below.

Before modification

```
static void iica1_master_handler(void) ↓
{
    /* Master receive control */
    else ↓
    {
        if (g_iica1_rx_cnt < g_iica1_rx_len) ↓
        {
            *gp_iica1_rx_address = IICA1; ↓
            gp_iica1_rx_address++; ↓
            g_iica1_rx_cnt++; ↓
            ↓
            if (g_iica1_rx_cnt == g_iica1_rx_len) ↓
            {
                ACKE1 = 0U; ↓
                WREL1 = 1U; ↓
                WTIM1 = 1U; ↓
            }
        }
    }
}
```

After modification

```
static void iica1_master_handler(void) ↓
{
    /* Master receive control */
    else ↓
    {
        if (g_iica1_rx_cnt < g_iica1_rx_len) ↓
        {
            *gp_iica1_rx_address = IICA1; ↓
            gp_iica1_rx_address++; ↓
            g_iica1_rx_cnt++; ↓
            ↓
            if (g_iica1_rx_cnt == g_iica1_rx_len) ↓
            {
                ACKE1 = 0U; ↓
                WTIM1 = 1U; ↓
                WREL1 = 1U; ↓
            }
        }
    }
}
```

### 1.6 Schedule for Fixing the Problem

For RL78/F12, RL78/F13, RL78/F14, RL78/F15, RL78/G10, and RL78/G11 groups, this problem will be fixed in the next version. (Scheduled to be released in January 2020.)

For groups that are not listed above, no fixes are scheduled.

## 2. When Using the R\_ADC\_Set\_ADChannel Function in the A/D Converter

### 2.1 Applicable Products

- CS+ Code Generator for RL78 V1.04.00/V3.02.00 (CS+ for CC V3.00) or later
- CS+ Code Generator for RL78 V1.04.00/V3.02.00 (CS+ for CA,CX V3.00) or later
- Code Generator plug-in V1.0.1 (e<sup>2</sup> studio V2.2.0) or later
- Applilet3 for RL78 V1.00.00 or later
- AP4 for RL78 V1.04.00 or later

### 2.2 Applicable Devices

- RL78/D1A group: 48- and - 64-pin products
- RL78/G1A group: 25- and 32- pin products
- RL78/G1F group: 24-pin products
- RL78/I1D group: 48-pin products

### 2.3 Details

If you select [Used] for [A/D converter operation setting], inappropriate enum definitions are generated for channel definitions for the A/D converter. For this reason, A/D conversion channels may not be changed correctly by the R\_ADC\_Set\_ADChannel function that uses enum definitions.

Examples of inappropriate enum definitions (RL78/G1A group: 32-pin products)

In the following enum definitions, ADCHANNEL26 does not have a required definition of the correct value (initial value = 26). Therefore, ADCHANNEL27 to ADCHANNEL29 results in inappropriate values. This further causes ADCHANNEL27 to ADCHANNEL29 to result in inappropriate values.

```

173/*****
174typedef definitions
175*****
176typedef enum
177{
178    ADCHANNEL0, ADCHANNEL1, ADCHANNEL2, ADCHANNEL3, ADCHANNEL4, ADCHANNEL16 = 16U, ADCHANNEL17,
179    ADCHANNEL18, ADCHANNEL19, ADCHANNEL20, ADCHANNEL21, ADCHANNEL22, ADCHANNEL23, ADCHANNEL24,
180    ADCHANNEL26, ADCHANNEL27, ADCHANNEL28, ADCHANNEL29, ADTEMPERSENSORO = 128U, ADINTERREFVOLT
181} ad_channel_t;
    
```

### 2.4 Conditions

The problem occurs when the R\_ADC\_Set\_ADChannel function makes a change to one of the following A/D conversion channels.

Devices	A/D conversion channels which cannot be changed correctly
RL78/D1A group: 48- and 64-pin products	ADCHANNEL7
RL78/G1A group: 25-pin products	ADCHANNEL20, 21, 25, 26, 27 and 29
RL78/G1A group: 32-pin products	ADCHANNEL26, 27, 28 and 29
RL78/G1F group: 24-pin products	ADCHANNEL20 and 21 and ADPGA0
RL78/I1D group: 48-pin products	ADCHANNEL16, 17 and 18

### 2.5 Workaround

When changing an A/D conversion channel by the R\_ADC\_Set\_ADChannel function, specify a literal instead of an enum definition.

Example: Specifying ADCHANNEL7

```
R_ADC_Set_ADChannel((ad_channel_t) 7);
```

### 2.6 Schedule for Fixing the Problem

This problem will be fixed in the next version. (Scheduled to be released in January 2020.)

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Aug.01.19	-	First edition issued
1.01	Dec.23.19	1	Corrected 1.2 Applicable Devices
		3	Corrected 1.6 Workaround

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Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu, Koto-ku, Tokyo 135-0061 Japan

[www.renesas.com](http://www.renesas.com)

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