

[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

**Outline**

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

1. Input of ports P10 and P11
2. Port settings related to reset processing

**1. Input of Ports P10 and P11**

**1.1 Applicable Products**

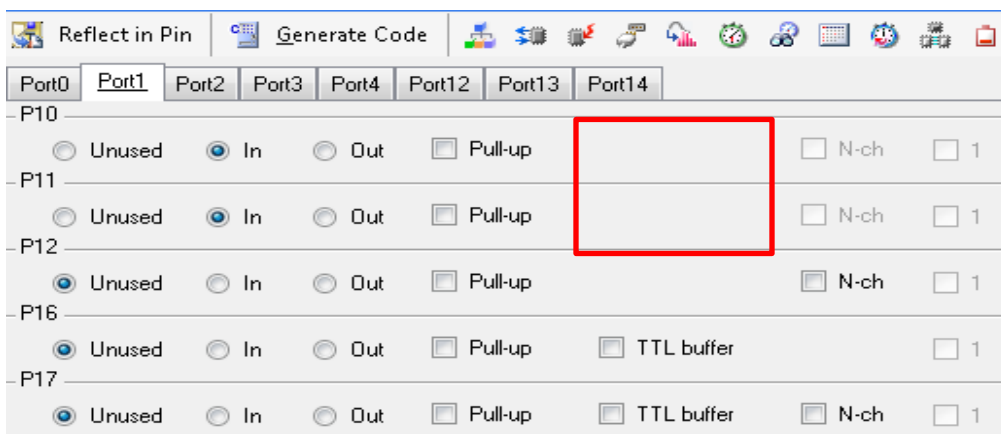
- V2.03.00 and later versions of the CS+ Code Generator for RL78 (CS+ for CA, CX)
- V2.03.00 and later versions of the CS+ Code Generator for RL78 (CS+ for CC)
- V3.0.1.9 and later versions of e<sup>2</sup> studio (V2.0.2 and later versions of the Code Generator plug-in)
- V1.07.00 and later versions of Applilet3 for RL78

**1.2 Applicable MCU**

- RL78 family: RL78/G13 group of MCUs (20-pin, 24-pin, or 25-pin)

**1.3 Details**

In the port settings for applicable products, Ports P10 and P11 cannot be set for the TTL input buffer because the TTL buffer setting column is not provided for these ports.



**Figure 1 Example of Display when P10 and P11 are Set to Input in the Port 1 Settings**

## 1.4 Workaround

Add the port input mode register (PIM) setting to the following function, and then set the input of ports P10 and P11 for the TTL input buffer. This modification is required every time code is generated.

- void R\_PORT\_Create(void) in the source file r\_cg\_port.c

The following is an example of the required modification.

- Modification for setting ports P10 and P11 for the TTL input buffer in Figure 1  
Add the processing in red.

Before modification:

```

/*****
* Function Name:R_PORT_Create
* Description : This function initializes the Port I/O.
* Arguments : None
* Return Value : None
*****/
void R_PORT_Create(void)
{
    PM1 = _01_PMn0_MODE_INPUT | _02_PMn1_MODE_INPUT | _04_PMn2_NOT_USE |
          _40_PMn6_NOT_USE | _80_PMn7_NOT_USE | _38_PM1_DEFAULT;
}
    
```

After modification:

```

/*****
* Function Name:R_PORT_Create
* Description : This function initializes the Port I/O.
* Arguments : None
* Return Value : None
*****/
void R_PORT_Create(void)
{
    PIM1 = _01_PIMn0_TTL_ON | _02_PIMn1_TTL_ON;
    PM1 = _01_PMn0_MODE_INPUT | _02_PMn1_MODE_INPUT | _04_PMn2_NOT_USE |
          _40_PMn6_NOT_USE | _80_PMn7_NOT_USE | _38_PM1_DEFAULT;
}
    
```

## 1.5 Schedule for Fixing the Problem

This problem will be fixed in a later version.

## 2. Port Settings Related to Reset Processing

### 2.1 Applicable Products

- V2.03.00 and later versions of the CS+ Code Generator for RL78 (CS+ for CA, CX)
- V2.03.00 and later versions of the CS+ Code Generator for RL78 (CS+ for CC)
- V3.0.1.9 and later versions of e<sup>2</sup> studio (V2.0.2 and later versions of the Code Generator plug-in)
- V1.07.00 and later versions of Applilet3 for RL78

### 2.2 Applicable MCU

- RL78 family: RL78/F12 group of MCUs (20-pin)

### 2.3 Details

The products do not support software processing for port P120 described in the following user's manual.

<https://www.renesas.com/search/keyword-search.html#genre=document&q=r01uh0231>

RL78/F12 User's Manual: Hardware

4.3 Registers Controlling Port Function

(1) Port registers (Pxx), Cautions 2.

(Excerpt)

**Cautions 2.** In 20-pin products, complete the following software processing for the following each port before performing the operation that reads the port latch Pm having the target port latch Pm.n within 50 ms after releasing reset (after starting CPU operation).

- Set P00, P13, P14, P15, P30, P60, P61, **P120** and P147 to low level output mode by the software (clear the PMm.n and Pm.n bits for the target ports).
- Set P23 to digital port and low level output mode by the software (set P23 to digital mode with the ADPC register and clear the PM2.3 and P2.3 bits).

### 2.4 Workaround

Modify the following function to add the processing that sets port P120 to low level output mode. This modification is required every time code is generated.

- void R\_Systeminit(void) in the source file r\_systeminit.c

The following is an example of the required modification.

Add the processing in red.

Before modification:

```

/*****
 * Function Name:R_Systeminit
 * Description  : This function initializes every macro.
 * Arguments   : None
 * Return Value : None
 *****/
void R_Systeminit(void)
{
    PIOR = 0x00U;
    PM0 &= 0xFEU; /* set P00 to output mode */
    PM1 &= 0xC7U; /* set P13, P14, P15 to output mode */
    PM3 &= 0xFEU; /* set P30 to output mode */
    PM6 &= 0xFCU; /* set P60, P61 to output mode */
    PM14 &= 0x7FU; /* set P147 to output mode */
    ADPC = 0x04U; /* set P23 to digital port */
    PM2 &= 0xF7U; /* set P23 to output mode */
    R_CGC_Get_ResetSource();

    Omit
}

```

After modification:

```

/*****
 * Function Name:R_Systeminit
 * Description  : This function initializes every macro.
 * Arguments   : None
 * Return Value : None
 *****/
void R_Systeminit(void)
{
    PIOR = 0x00U;
    PM0 &= 0xFEU; /* set P00 to output mode */
    PM1 &= 0xC7U; /* set P13, P14, P15 to output mode */
    PM3 &= 0xFEU; /* set P30 to output mode */
    PM6 &= 0xFCU; /* set P60, P61 to output mode */
    PM14 &= 0x7FU; /* set P147 to output mode */
    ADPC = 0x04U; /* set P23 to digital port */
    PM2 &= 0xF7U; /* set P23 to output mode */
    P12 &= 0xFEU; /* Clear port register (P120) */
    PM12 &= 0xFEU; /* set P120 to output mode */
    R_CGC_Get_ResetSource();

    Omit
}

```

## 2.5 Schedule for Fixing the Problem

This problem will be fixed in a later version.

**Revision History**

Rev.	Date	Description	
		Page	Summary
1.00	Mar. 1, 2017	-	First edition issued

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