

[Notes]

R20TS0161EJ0101

Rev.1.01

Apr. 16, 2017

CS+ Code Generator for RX,
e² studio Code Generator Plug-in,
AP4 Coding Assistance Tool for RX

Outline

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

1. Prohibition of reading from and writing to registers protected from programming by mistake in multi-function timer pulse unit 2 (MTU2) and 3 (MTU3)
2. Data output by a pin view
3. LCD initialization code

1. Prohibition of Reading from and Writing to Registers Protected from Programming by Mistake in Multi-function Timer Pulse Unit 2 (MTU2) and 3 (MTU3)

1.1 Applicable Products

- V1.08.00 and later versions of the CS+ Code Generator for RX
- V3.0.1.9 and later versions of e² studio (V2.0.2 and later versions of the Code Generator plug-in)
- V1.07.00 and later versions of the AP4 coding assistance tool for RX

1.2 Applicable MCUs

- RX family: RX110, RX111, RX113, and RX130 groups
RX230, RX231, RX23T, RX24T, and RX24U groups
RX64M and RX71M groups

1.3 Details

When MTU is used in multi-function timer pulse unit 2 (MTU2) and 3 (MTU3), access to registers/counters protected from programming by mistake cannot be set to be disabled because the procedure that clears the RWE bit of the timer read/write enable register (TRWER) or the timer read/write enable register (TRWERA or TRWERB) is incorrect.

1.4 Workaround

Correct the processing that clears the RWE bit of the timer read/write enable register to "0" in the function (R_MTU2_Create or R_MTU3_Create) of the multi-function timer pulse unit.

The red text is the modification. This modification is required every time code is generated.

Example: For the RX130, when multi-function timer pulse unit 2 is used

- The function is “void R_MTU2_Create(void)” in the source file “r_cg_mtu2.c”.

Before modification:

```

/*****
* Function Name: R_MTU2_Create
* Description   : This function initializes the MTU2 module.
* Arguments     : None
* Return Value  : None
*****/
void R_MTU2_Create (void)
{
    Omitted
    /* Enable read/write to MTU registers */
    MTU.TRWER.BYTE = _01_MTU_RWE_ENABLE;

    Omitted

    /* Disable read/write to MTU registers */
    MTU.TRWER.BYTE = _00_MTU_RWE_DISABLE;
    Omitted
}

```

After modification:

```

/*****
* Function Name: R_MTU2_Create
* Description   : This function initializes the MTU2 module.
* Arguments     : None
* Return Value  : None
*****/
void R_MTU2_Create (void)
{
    Omitted
    /* Enable read/write to MTU registers */
    MTU.TRWER.BYTE = _01_MTU_RWE_ENABLE;

    Omitted

    /* Disable read/write to MTU registers */
    If (1U == MTU.TRWER.BIT.RWE)
    {
        MTU.TRWER.BYTE = _00_MTU_RWE_DISABLE;
    }
    Omitted
}

```

1.5 Schedule for Fixing the Problem

This problem will be fixed in a later version.

2. Data Output by a Pin View

2.1 Applicable Products

- V1.08.00 and later versions of the CS+ Code Generator for RX
- V3.0.1.9 and later versions of e² studio (V2.0.2 and later versions of the Code Generator plug-in)
- V1.07.00 and later versions of the AP4 coding assistance tool for RX

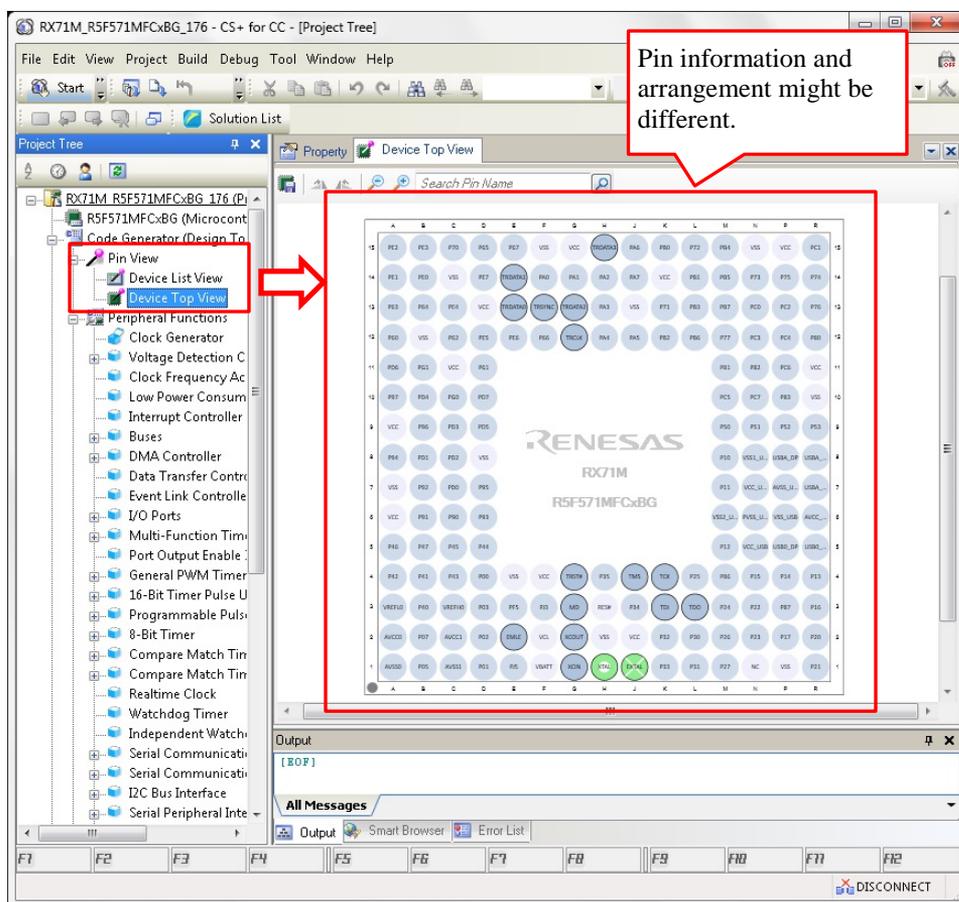
2.2 Applicable MCUs

- RX family: RX71M group (BGA package)

2.3 Details

Data to be displayed in [Device Top View] differs from the actual pin of the MCU because display and output data in [Device List View] of [Code Generator (Design Tool)] are incorrect.

Note that codes generated by the settings in [Peripheral Functions] have no problem.



2.4 Workaround

There is no way to prevent this problem.

2.5 Schedule for Fixing the Problem

This problem will be fixed in a later version.

3. LCD Initialization Code

3.1 Applicable Products

- V1.08.00 and later versions of the CS+ Code Generator for RX
- V3.0.1.9 and later versions of e² studio (V2.0.2 and later versions of the Code Generator plug-in)
- V1.07.00 and later versions of the AP4 coding assistance tool for RX

3.2 Applicable MCUs

- RX Family: RX113 Group

3.3 Details

In [Code Generator (Design Tool)], the position of the initialization function "R_LCD_Create();" which is output when the LCD controller/driver (the peripheral function of the RX113 group) is used, is incorrect. Incorrect position may disable the port settings specified by the initialization function "R_LCD_Create();".

3.4 Workaround

Modify the source file "r_cg_hardware.c" so that the function "R_LCD_Create();" called by the function "R_Systeminit()" is located after the function "R_PORT_Create();".

The red text is the modification. This modification is required every time code is generated.

Example: When the LCD controller/driver, port, MTU2, and SCI1 are set

- Source file "r_cg_hardware_setup.c"

Before modification:

```

/*****
* Function Name: R_Systeminit
* Description   : This function initializes every macro.
* Arguments    : None
* Return Value : None
*****/
void R_Systeminit(void)
{
    Omitted
    /* Set peripheral settings */
    R_CGC_Create();
    R_LCD_Create();
    R_PORT_Create();
    R_MTU2_Create();
    R_SCI1_Create();

    /* Disable writing to MPC pin function control registers */
    MPC.PWPR.BIT.PFSWE = 0U;
    MPC.PWPR.BIT.B0WI = 1U;

    /* Enable protection */
    SYSTEM.PRCR.WORD = 0xA500U;
}

```

After modification:

```

/*****
* Function Name: R_Systeminit
* Description   : This function initializes every macro.
* Arguments    : None
* Return Value : None
*****/
void R_Systeminit(void)
{
    Omitted
    /* Set peripheral settings */
    R_CGC_Create();
    R_PORT_Create();
    R_LCD_Create();          /* Modified to be located after R_PORT_Create();. */
    R_MTU2_Create();
    R_SCI1_Create();

    /* Disable writing to MPC pin function control registers */
    MPC.PWPR.BIT.PFSWE = 0U;
    MPC.PWPR.BIT.BOWI = 1U;

    /* Enable protection */
    SYSTEM.PRCR.WORD = 0xA500U;
}

```

3.5 Schedule for Fixing the Problem

This problem will be fixed in a later version.

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Apr. 16, 2017	-	First edition issued
1.01	Apr. 19, 2017	2	Change the function name and the comment.

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