

[Notes]

R20TS0656EJ0100

Rev.1.00

Feb. 16, 2021

e² studio Code Generator Plug-in and AP4 Coding Assistance Tool for RZ

Overview

When using any of the products in the title, note the following point.

- Notes on counter clear setting for multi-function timer pulse unit 3 in complementary PWM mode

1. Notes on counter clear setting for multi-function timer pulse unit 3 in complementary PWM mode

1.1 Applicable Products

e² studio V4.0.0.26 (V2.0.0 and later versions of the Code Generator Plug-in)

V1.00.00 and later versions of the AP4 coding assistance tool for RZ

1.2 Applicable MCUs

RZ family: RZ/T1 group

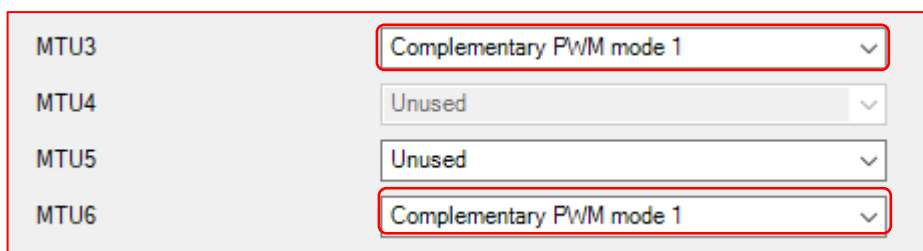
1.3 Description

Counter clear control for multi-function timer pulse unit 3 in complementary PWM mode has an error. If [Counter clear on another channel performing synchronous operation] is set, a malfunction occurs after the first synchronous clearing.

1.4 Conditions

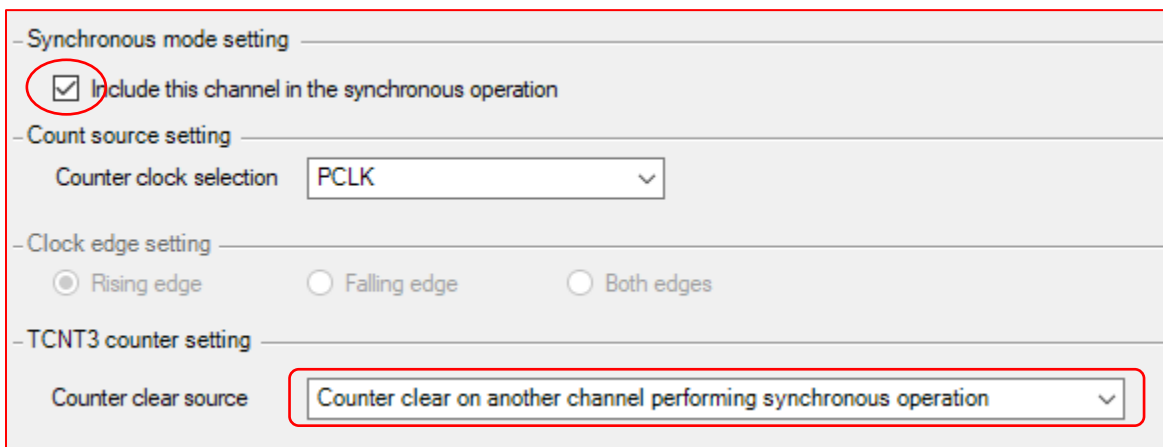
The problem arises when settings (1) and (2) are used.

- In the [General Setting] tab for multi-function timer pulse unit 3, [MTU3] or [MTU6] is set to complementary PWM mode.



- In the [MTU3] tab or [MTU6] tab for multi-function timer pulse unit 3, the following are set:

- Under [Synchronous mode setting], the [Include this channel in the synchronous operation] check box is selected.
- Under [TCNT3(or 6) counter setting], [Counter clear source] is set to [Counter clear on another channel performing synchronous operation].



1.5 Workaround

Add a code to specify synchronous clearing to the CCLR[2:0] bit of the timer control register (TCR) for MTU4^{*1} and MTU7^{*2} in the generated code (r_cg_mtu3.c), as shown below.

This modification is required every time code is generated.

*1: When MTU3 is used

*2: When MTU6 is used

- Function in the source file r_cg_mtu3.c: R_MTU3_Create(void)

Before modification

```

/*****
* Function Name: R_MTU3_Create
* Description  : This function initializes the MTU3 Unit0 module.
* Arguments   : None
* Return Value: None
*****/
void R_MTU3_Create(void)
{
    Omitted

    MTU3.TCR.BYTE = _MTU_PCLK_1 | _MTU_CKCL_SYN;
    MTU4.TCR.BYTE = _MTU_PCLK_1;

    Omitted

    MTU6.TCR.BYTE = _MTU_PCLK_1 | _MTU_CKCL_SYN;
    MTU7.TCR.BYTE = _MTU_PCLK_1;
}
    
```

After modification

```

/*****
* Function Name: R_MTU3_Create
* Description  : This function initializes the MTU3 Unit0 module.
* Arguments    : None
* Return Value : None
*****/
void R_MTU3_Create(void)
{
    Omitted

    MTU3.TCR.BYTE = _MTU_PCLK_1 | _MTU_CKCL_SYN;
    MTU4.TCR.BYTE = _MTU_PCLK_1 | _MTU_CKCL_SYN;
Add

    Omitted

    MTU6.TCR.BYTE = _MTU_PCLK_1 | _MTU_CKCL_SYN;
    MTU7.TCR.BYTE = _MTU_PCLK_1 | _MTU_CKCL_SYN;
Add

```

1.6 Permanent Measure

This problem will be fixed in the next version.

Revision History

| Rev. | Date | Description | |
|------|-----------|-------------|----------------------|
| | | Page | Summary |
| 1.00 | Feb.16.21 | - | First edition issued |
| | | | |

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