RENESAS Tool News

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Note on Using Code Generator for RL78 Family, 78K0R, and 78K0 MCUs Managed by CubeSuite+

When using CubeSuite+ Code_Generator for RL78_78K, the code generator for the RL78 Family, 78K0R, and 78K0 MCUs managed by CubeSuite+, take note of the following problem:

- With using the code generator for the RL78/G14 group of MCUs

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1. Product and Versions Concerned

CubeSuite+ Code_Generator for RL78_78K V1.00.05 and V1.00.06

To check to see the version number of your product for Windows, follow these steps:

(1) On Control Panel of Windows, click Add/Remove Programs.
(2) In the program list, click the icon of CubeSuite+ Code_Generator for RL78_78K.
(3) Click "Click here for support information." You see the version number of yours.

2. Description

In the code generator for the RL78/G14 group, which is included in the product concerned, the following problems have been found:

2.1 Problems with Making Settings of RD Timer in PWM Mode

(1) With generating incorrect code for cyclic register
If you select PWM from among the operating modes of the RD timer and 64 MHz from among the clock frequencies of the high-speed on-chip oscillator, the code generator generates incorrect code; that is, the value (duty ratio) of the cyclic register is erroneous.

(2) With using alternate-function pins
When the PWM mode is used, every pin for the PWM output, which is an alternate-function pin, cannot be used for the other

function. So if you make settings for using these pins for the other functions than PWM, the code generator express an alarm (symbol "!"). However, if you have selected the PWM mode in the RD timer, this alarm is not expressed on the information setting area of the [Port].

2.2 Problem with Making Settings of RJ Timer in Pulse Period Measurement Mode

If you select the Pulse Period Measurement Mode from among the operating modes of the RJ timer, the code generator generates erroneous code.

Example:
If you make the above settings for the RJ timer and use the code generator under the following settings, errors arise in the generated interrupt handler:
- Count source: any
- Polarity of TRJIO0: positive or negative
- Count value: 0xffff

3. Workaround

3.1 Problem with Making Settings of RD Timer in PWM Mode

(1) Edit and modify the source code generated so that you can obtain the correct value of the cyclic register.
(2) If you have selected the PWM mode in the RD timer, do not use the pins for PWM except the function of PWM.

3.2 Problem with Making Settings of RJ Timer in Pulse Period Measurement Mode

In the case of Example in 2-2, modify the generated code of the interrupt handler as follows:

Example: Modification of generated source code of interrupt handler with count value of 0xffff:

```
------------------------------------------------------------------------
__interrupt static void r_tmr_rj0_interrupt(void)
{
    if ((TRJCR0 & _20_TMRJ_UNDERFLOW_OCCUR) != 0U)
    {
        g_tmrj0_underflow_count += 1U;
        TRJCR0 &= (uint8_t)~_20_TMRJ_UNDERFLOW_OCCUR;
    }

    if ((TRJCR0 & _10_TMRJ_ACTIVE_EDGE_UNRECEIVED) != 0U)
    {
        g_tmrj0_width = (uint32_t)(g_tmrj0_trj_count - TRJ0 + 1U
```

```
                + (g_tmrj0_underflow_count * (_FFFF_TMRJ_
                TRJ0_VALUE + 1U)));
    /* Modify the expression g_tmrj0_trj_count.It should be the name
       of the count value you have set.
       In Example in 2-2, the count value is 0xffff, so the modified
       name is _FFFF_TMRJ_TRJ0_VALUE */

        g_tmrj0_trj_count = (uint32_t)TRJ0;
        g_tmrj0_underflow_count = 0U;
        TRJCR0 &= (uint8_t)~_10_TMRJ_ACTIVE_EDGE_UNRECEIVED;
    }
}
```

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4. Schedule of Fixing Problem

We plan to fix this problem in the next version of CubeSuite+ (to be released in April 2013). If you need to take measures against this problem up to the above time, please consult your local Renesas Electronics marketing office or distributor.
