RENESAS Tool News

Note on Using RX62T Group Renesas Peripheral Driver Library and Peripheral Driver Generator V2 --With Multi-function Timer Pulse Unit 3 (MTU3)--

When using RX62T Group Renesas Peripheral Driver Library and Peripheral Driver Generator V2, take note
of the following problem:

- With creating the codes for setting the complementary PWM mode of the multi-function timer pulse unit 3 (MTU3) in the RX62T group of MCUs

1. Products and Versions Concerned

   - RX62T Group Renesas Peripheral Driver Library V.1.01
   - Peripheral Driver Generator V.2.02 and later

2. Description

If the codes for setting the complementary PWM mode of the multi-function timer pulse unit 3 (MTU3) in the RX62T group of MCUs are created using the complementary PWM mode of the multifunctional timer pulse unit 3 (MTU3) in the RX62T group of MCUs, the function for setting MTU3 may return a value of "false". In this case, you cannot make the correct settings of MTU3.

2.1 Conditions
This problem may arise if any of the following conditions is satisfied in the codes:
(1) The complementary PWM mode and an interrupt skipping function is used at the same time.
(2) The complementary PWM mode is used, and TRG4BN, a request for starting the A/D conversion, is acknowledged when MTU4.TCNT, the

timer counter of the multi-function timer pulse unit 4 (MTU4),
is counting down.
(3) The complementary PWM mode is used, and TRG4AN, another request
for starting the A/D conversion, is acknowledged when MTU4.TCNT
is counting down.

2.2 Examples
(1) In Renesas Peripheral Driver Library
Any one of the following is passed to function R_MTU3_Create as
an argument:
- PDL_MTU3_ADC_TRIG_TROUGH_DISABLE
- PDL_MTU3_ADC_TRIG_TROUGH_ENABLE
- PDL_MTU3_ADC_TRIG_A_TROUGH_INT_SKIP_DISABLE
- PDL_MTU3_ADC_TRIG_A_TROUGH_INT_SKIP_ENABLE
- PDL_MTU3_ADC_TRIG_B_TROUGH_INT_SKIP_DISABLE
- PDL_MTU3_ADC_TRIG_B_TROUGH_INT_SKIP_ENABLE
- PDL_MTU3_ADC_TRIG_A_CREST_INT_SKIP_DISABLE
- PDL_MTU3_ADC_TRIG_A_CREST_INT_SKIP_ENABLE
- PDL_MTU3_ADC_TRIG_B_CREST_INT_SKIP_DISABLE
- PDL_MTU3_ADC_TRIG_B_CREST_INT_SKIP_ENABLE
- PDL_MTU3_ADC_TRIG_A_DOWN_DISABLE
- PDL_MTU3_ADC_TRIG_A_DOWN_ENABLE
- PDL_MTU3_ADC_TRIG_B_DOWN_DISABLE
- PDL_MTU3_ADC_TRIG_B_DOWN_ENABLE

(2) In Peripheral Driver Generator
The complementary PWM mode is selected in the MTU3_3 or the
MTU3_6 tab, and any of the following is made:
- "Enable A/D conversion start request on the trough of the count
(trigger signal of MTU3_n TRAGAnN) " checked.
- "Link with TGIA3 interrupt skipping"checked in MTU3_3 tab.
- "Link with TGIA4 interrupt skipping"checked in MTU3_3 tab.
- "Link with TGIA6 interrupt skipping"checked in MTU3_6 tab.
- "Link with TGIA7 interrupt skipping"checked in MTU3_6 tab.

- From the A/D conversion start request condition on
matching of the counter and the cycle set register A value
list, "matching during count-down" or "matching during both
count-up and count-down" selected
- From the A/D conversion start request condition on matching of
the counter and the cycle set register B value list,
"matching during count-down" or matching during both count-up
and count-down selected

3. Workaround

Do not make the settings that satisfy Sections 2.1 and 2.2, but set
bits of the TIER and TADCR registers according to the conditions under
which it is used after the initial settings of the MTUs by using
functions of RX62T Group Renesas Peripheral Driver Library or Peripheral
Driver Generator V2.
If you do not make the settings satisfying Section 2.1, the following
7 bits must be set additionally:
  - TIER.TTGE2
  - TADCR.ITA4VE
  - TADCR.ITB4VE
  - TADCR.ITA3AE
  - TADCR.ITB3AE
  - TADCR.DT4AE
  - TADCR.DT4BE

4. Schedule of Fixing Problem

We are going to fix this problem at a later revision of the product.