

Peripheral Driver Generator V.2.04

R20UT2084EJ0100

Rev.1.00

Release Note

Jun 05, 2012

1. Description of Revision

1.1 Supported MCUs Increased

The revised product supports the RX630 group of MCUs. The peripheral I/O modules of these MCUs supported by Peripheral Driver Generator V.2.04 and the RX630 Group Renesas Peripheral Driver Library bundled in Peripheral Driver Generator V.2.04 package are as follows.

(1) The peripheral I/O modules of RX630 group MCUs:

Voltage Detection Circuit (LVDA)	8-Bit Timer (TMR)
Clock Generation Circuit	Compare Match Timer (CMT)
Frequency Measurement Circuit (MCK)	Realtime Clock (RTC _a)
Low Power Consumption	Watchdog Timer (WDT _a)
Register Write Protection Function	Independent Watchdog Timer (IWDT _a)
Exceptions, Interrupt Controller (ICU _b)	Serial Communications Interface (SCI _c ,SCI _d)
Buses	I2C Bus Interface (RIIC)
DMA Controller (DMACA)	Serial Peripheral Interface (RSPI)
Data Transfer Controller (DTC _a)	IEBus™ Controller (IEB)
I/O Ports	CRC Calculator (CRC)
Multifunction Pin Controller (MPC)	12-Bit A/D Converter (S12AD _a)
Multi-Function Timer Pulse Unit 2 (MTU2 _a)	10-Bit A/D Converter (AD _b)
Port Output Enable 2 (POE2 _a)	D/A Converter (DA _a)
16-Bit Timer Pulse Unit (TPU _a)	Temperature Sensor
Programmable Pulse Generator (PPG)	

(2) Bundled RX630 Group Renesas Peripheral Driver Library:

Rev.1.00 *

* This RPD_L library has been built and tested using the C/C++ Compiler Package for RX Family V.1.02 Release 00. It cannot be used with older versions of the tool chain.

1.2 Capability Introduced

The following capability has been introduced:

- Registering the source files generated by Peripheral Driver Generator in the CubeSuite+ project.

1.3 Problems Fixed

We have been fixed the following two problems:

- (1) With setting the clock generator circuit on an MCU of the RX210 group

For details of the problem, see RENESAS TOOL NEWS Document No. 120416/tn3 at :

<http://tool-support.renesas.com/eng/toolnews/120416/tn3.htm>

- (2) Problem that on setting of the RX210 group MCUs if the main window is resized to smaller size so that the input items hide, Peripheral Driver Generator may stop responding to any operation

2. Precautions

The following known problems reside in Peripheral Driver Generator V.2.04.

2.1 A Note on Using MTU Pulse Output Pins (RX210,RX630)

- (1) Description

When complementary PWM mode or reset-synchronized PWM mode is selected as an operation mode for MTU channel, all six phases of pulse output (MTIOC3B, MTIOC3D, MTIOC4A, MTIOC4B, MTIOC4C, and MTIOC4D) are enabled. You cannot select the pins you want to use.

When the function `R_PG_Timer_Set_MTU_U0_<channel>` is called to initialize MTU, the pin function control registers and the port mode registers of these pins are set to enable MTU pulse output, but the pulse is not output from the pin that has not been enabled by function

`R_PG_Timer_ControlOutputPin_MTU_U0_<channel>` because the timer output master enable registers (TOER) has not been set to 1.

- (2) Conditions

Complementary PWM mode or reset-synchronized PWM mode is selected as an operation mode of MTU

- (3) Workaround

Disable the pulse output pins you do not want to use. For how to disable the pins, please refer to the example.

If you make a setting for another peripheral module so that the pulse output pin is used as different function, GUI shows warning message. Even when the warning is detected, you can execute the source generation.

You can use the pin for another peripheral function by initializing another peripheral module after initializing MTU.

Example : When MTIOC3D is disabled. (MTIOC3D is assigned to P16)

```
// Add an inclusion of header file
#include "iodefne_RPDL.h"

void function()
{
    //Initialize MTU3 and MTU4
    R_PG_Timer_Set_MTU_U0_C3_C4();

    //Disable the register write protection
    MPC.PWPR.BIT.B0WI = 0;
    MPC.PWPR.BIT.PFSWE = 1;

    // Set P16 to general port
    PORT1.PMR.BIT.B6 = 0;
    MPC.P16PFS.BIT.PSEL = 0;

    //Enable the register write protection
    MPC.PWPR.BIT.PFSWE = 0;
    MPC.PWPR.BIT.B0WI = 1;
}
```

2.2 A Note on Reading Time in RTC (RX210,RX630)

(1) Description

The incorrect value of hours and PM bit may be acquired when calling `R_PG_RTC_GetStatus` to get current time and when calling `R_PG_RTC_GetCaptureTime<capture>` to get the capture time.

(2) Conditions

In the case of 12-hour mode

(3) Workaround

Both PM bit and value of hours are stored in the area specified by parameter `uint8_t * hours`. The formats are as follows. Do not use the parameter `bool * pm`.

- Current Time (`R_PG_RTC_GetStatus`)

PM bit : b7 Hours : from b5 to b0

- Capture time (`R_PG_RTC_GetCaptureTime<capture >`)

PM bit : b6 Hours : from b5 to b0

To get the PM bit and hours, mask the corresponding bits as follows.

Example 1 : In the case of reading the current time

```
uint8_t seconds;
uint8_t minutes;
uint8_t hours;
bool pm;

void function()
{
    R_PG_RTC_GetStatus(
        0,          //Hour mode
        &seconds,   //Seconds
        &minutes,   //Minutes
        0,          //PM bit
        &hours,     //Hours
        0,          //Day of week
        0,          //Day
        0,          //Month
        0,          //Year
        0,          //Carry interrupt flag
        0,          //Alarm interrupt flag
        0,          //Periodic interrupt flag
        0,          //30-second adjustment bit
        0,          //Reset bit
        0           //Running bit
    );
    pm = (bool)((hours & 0x80)>>7);
    hours &= 0x1f;
}
```

Example 2 : In the case of reading the capture time

```
uint8_t seconds;
uint8_t minutes;
uint8_t hours;
bool pm;

void function()
{
    R_PG_RTC_GetCaptureTime1(
        &seconds,   // Seconds
        &minutes,   // Minutes
        0,          // PM bit
        &hours,     // Hours
        0,          // Day
        0,          // Month
        0           // Year
    );
    pm = (bool)((hours & 0x40)>>6);
    hours &= 0x3f;
}
```

2.3 A Note on Reading the Hour Mode in RTC (RX210,RX630)

(1) Description

The current hour mode cannot not be stored in the area specified by the parameter bool * hour_mode when calling function R_PG_RTC_GetStatus.

(2) Conditions

When R_PG_RTC_GetStatus is called to get the current hour mode.

(3) Workaround

To get the current hour mode, read the HR24 bit in RTC Control Register 2 (RCR2) directly.

2.4 A Note on Setting the External Buses (RX62N)

For details of the problem, see RENESAS TOOL NEWS Document No. 120601/tn6 at :

<http://tool-support.renesas.com/eng/toolnews/120601/tn6.htm>

(This tool news will be published on the Web site on June 20.)

2.5 A Note on Sending Data with RSPI (RX62N, RX62T)

For details of the problem, see RENESAS TOOL NEWS Document No. 120601/tn7 at :

<http://tool-support.renesas.com/eng/toolnews/120601/tn7.htm>

(This tool news will be published on the Web site on June 20.)

2.6 A Note on Setting a MTU3 Channel (RX62T)

For details of the problem, see RENESAS TOOL NEWS Document No. 120601/tn8 at :

<http://tool-support.renesas.com/eng/toolnews/120601/tn8.htm>

(This tool news will be published on the Web site on June 20.)

2.7 A Note on Using SCI5, SCI6 and SCI12 (RX210)

For details of the problem, see RENESAS TOOL NEWS Document No. 120601/tn9 at :

<http://tool-support.renesas.com/eng/toolnews/120601/tn9.htm>

(This tool news will be published on the Web site on June 20.)

2.8 A Note on Using the IEBus (RX630)

For details of the problem, see RENESAS TOOL NEWS Document No. 120601/tn10 at :

<http://tool-support.renesas.com/eng/toolnews/120601/tn10.htm>

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