RENESAS Tool News

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Note on Using Renesas Peripheral Driver Libraries for RX210/RX630/RX62N Groups of MCUs and Peripheral Driver Generator --With Making Changes to Alarm Settings of Real-Time Clock (RTC)--

When using Renesas Peripheral Driver Libraries for the RX210/RX630/RX62N groups of MCUs and Peripheral Driver Generator, take note of the following problem:

- With making changes to alarm setting of real-time clock (RTC)

(Jan. 14, 2014)
We are sorry that the problem does not concern RX62N Group Renesas Peripheral Driver Library V.1.02.
And, the applicable version number of Peripheral Driver Generator is also corrected from V.2.01 to V.2.03.

1. Products and Versions Concerned

- RX210 Group Renesas Peripheral Driver Library V.1.01
- RX630 Group Renesas Peripheral Driver Library V.1.00
- Peripheral Driver Generator V.2.03 and later

2. Description

By using arguments of the following functions, if you make changes to the setting of the alarm time or date or enable/disable the alarm interrupt of the real-time clock (RTC), unintentional alarm interrupts may be generated:

- R_RTC_Control function of each Renesas Peripheral Driver Library
- R_PG_RTC_AlarmControl and R_PG_RTC_SetAlarmTime functions of Peripheral Driver Generator

3. Workarounds

In each of the following three cases, reset alarm time and date after

disabling the interrupt. Then if necessary, enable the interrupt.
Note that this problem is not avoided if you disable the alarm interrupt by using the IER.IEN bit of the alarm interrupt and/or the IPR register.

3.1 In RX210 Group Renesas Peripheral Driver Library

Clear the I flag of the PSW register to 0 to disable the alarm interrupt; then make a call to the R_RTC_Control function to re-set alarm time and date. Then if necessary, enable the interrupt.

Example:

```
---------------------------------------------------------------------
void func(){
   unsigned long  psw_tmp;  // tmp variable for saving PSW register
   psw_tmp = get_psw();     // PSW register saved on stack.
   /* Here begins workaround */
   clrpsw_i();              // I flag cleared.

   /* Settings of Alarm properties */
   R_RTC_Control(
    PDL_NO_DATA, PDL_RTC_UPDATE_ALARM_TIME |
PDL_RTC_UPDATE_ALARM_DATE,
    PDL_NO_DATA, PDL_NO_DATA, data_time, data_date,
    PDL_NO_DATA, PDL_NO_DATA, PDL_NO_DATA, PDL_NO_DATA,
PDL_NO_DATA);

   set_psw(psw_tmp);        // PSW register restored from stack.
   /* Here ends workaround */
}
---------------------------------------------------------------------
```

3.2 In Renesas Peripheral Driver Library for RX630 Group

Use the problem-fixed product: RX630 Group Renesas Peripheral Driver Library V.1.10

V.1.10 has been released on April 1, 2013.
The revised sample program will be published in the Web page on April 5.
For details, see RENESAS TOOL NEWS Document No. 130401/tn7.
You can also see this news on the Web page at:

https://www.renesas.com/search/keyword-search.html#genre=document&q=130401tn7

This page will be opened on April 8.

3.3 In Peripheral Driver Generator

Clear the I flag of the PSW register to 0 to disable the alarm interrupt; then make a call to the R_PG_RTC_SetAlarmTime function to

re-set alarm time and date. Then if necessary, enable the interrupt.

Example

```
------------------------------------------------------------------------
void func(){
   unsigned long  psw_tmp;  // tmp variable for saving PSW register
   psw_tmp = get_psw();     // PSW register saved on stack.
   /* Here ends workaround */
   clrpsw_i();              // I flag cleared.

   /* Settings of Alarm properties */
   R_PG_RTC_SetAlarmTime(seconds, minutes, pm, hours, day_of_week, day,
   month, year);

   /* PSW register restored from stack */
   set_psw(psw_tmp);
   /* Here ends workaround */
}
------------------------------------------------------------------------
```

4. Schedule of Fixing Problem

In RX630 Group Renesas Peripheral Driver Library, this problem has already been fixed in V.1.10.
As to the other products, we plan to fix this problem in their later versions.