RENESAS Tool News

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Note on Using Peripheral Driver Generator V.2.09

When using the Peripheral Driver Generator, take note of the following problem:

- With setting up the timer pulse unit (TPU) of the RX210 group of MCUs

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1. Product and Version Concerned

Peripheral Driver Generator V.2.09

2. Description

If you use the above product to set up the TPU of the RX210 group of MCUs and make a setting to use interrupt notification functions, the definitions of the interrupt notification functions are not correctly output in the generated source files. Building from such source files will lead to a compiler error.

2.1 Conditions

This problem arises if the following conditions are all met:

(1) At least one of the checkboxes listed below is selected in the "Interrupt" section for TPU0 to TPU5 under "16-Bit Timer Pulse Unit (TPUa)":
- Use TGRA input capture/compare match interrupt (TGInA)
- Use TGRB input capture/compare match interrupt (TGInB)
- Use TGRC input capture/compare match interrupt (TGInC)
- Use TGRD input capture/compare match interrupt (TGInD)
- Use overflow interrupt (TCInV)
- Use underflow interrupt (TCInU)

(2) One of the following is selected as the "interrupt request destination" for any of the interrupts selected in (1):
- CPU
- CPU (After activating DTC and data transfer completion)
- CPU (After activating DMAC)

(3) The CPU interrupt priority level for the interrupt to which (2) applies is at least 1.

2.2 Example

Taking the following steps will lead to a compiler error:

(1) Create a new project by selecting the name of a CPU of the RX210 group (e.g. R5F52105BxFB) that includes the TPU.

(2) Open the "TPUa" tabbed page, then click on the "TPU0" tab and select the "Use this channel" checkbox.

(3) In the "Interrupt" section in the lower part of the "TPUa" tabbed page, select "Use TGRA input capture/compare match interrupt (TGInA)". This makes the following settings effective by default:

- "Interrupt request destination": CPU
- "Interrupt notification function name": Tpu0IcCmAIntFunc
- "CPU interrupt priority level (Shared with TGInA, TGInB, TGInC and TGInD)": 15

(4) Open the "SYSTEM" tabbed page and make clock settings.

(5) Generate the files of source code.

(6) Register the generated files with the integrated development environment (IDE). Building from these files will lead to the following compiler error:

If you are using CubeSuite+:

```
------------------------------------------------------------------
R_PG_Timer_TPU_U0.c(75):E0520020:Identifier "Tpu0IcCmAIntFunc"
is undefined
------------------------------------------------------------------
```

If you are using High-performance Embedded Workshop (see NOTE 1):

```
------------------------------------------------------------------
c:¥renesas¥PDG2_proj¥default¥TPU¥R_PG_Timer_TPU_U0.c(75) :
C5020 (E) Identifier "Tpu0IcCmAIntFunc" is undefined
------------------------------------------------------------------
```

If you are using e2 studio (see NOTE 2):

```
------------------------------------------------------------------
../src/default/TPU/R_PG_Timer_TPU_U0.c(75):E0520020:Identifier
"Tpu0IcCmAIntFunc" is undefined
------------------------------------------------------------------
```

NOTES:

1. This is the message when the generated files are in the following location:
   c:¥renesas¥PDG2_proj¥default¥

2. This is the message when the generated files are in the following location:

c:¥workspace¥project¥src¥default¥

3. Workarounds

Use the "-preinclude" option of the compiler to include "R_PG_IntFuncsExtern.h" generated by the Peripheral Driver Generator. How to include the header file varies with the IDE you are using.

3.1 If you are using CubeSuite+

Open the "Compile Options" tabbed page of the "CC-RX Property" panel. Enter "R_PG_IntFuncsExtern.h" in the field that appears when you click on the button that is displayed to the right of the "Include files at the head of compiling units" item.

3.2 If you are using High-performance Embedded Workshop

Enter "R_PG_IntFuncsExtern.h" with its path for "Preinclude file" under the "Source" category on the "C/C++" tabbed page of the "RX Standard Toolchain" dialog box.

3.3 If you are using e2 studio

Open "Properties" from the "Project" menu and select "Settings" under "C/C++ Build". Then select "Source" under "Compiler" on the "Tool settings" tabbed page and enter "R_PG_IntFuncsExtern.h" in the "Preinclude file" field.

4. Schedule for Fixing the Problem

This problem will be fixed in a later version of the product.
