RENESAS Tool News

Notes on Using the Following Tools
CS+ Code Generator for RX
e2 studio (Code Generator Plug-in)
AP4 Coding Assistance Tool for RX

When using the CS+ code generator for RX, the e2 studio (code generator plug-in), and the AP4 coding assistance tool for RX, take note of the problems on the following points that are described in this note.

1. Setting to permit or prohibit suspension of transfer in response to the reception of NACK over the I2C bus interface (RIIC)
Applicable products: RX71M, RX64M, RX23T, RX230, RX231, RX110, RX111, and RX113 groups

2. Settings for the output of RTCOUT from the real time clock (RTC)
Applicable products: RX110, RX111, and RX113 groups
3. Setting of the data transfer controller (DTC)
Applicable products: RX71M, RX64M, RX23T, RX230, RX231, and RX113 groups

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1. Setting to permit or prohibit suspension of transfer in response to the reception of NACK over the I2C bus interface (RIIC)
1.1 Applicable products
   - V1.00.00 and later versions of the CS+ Code Generator for RX
   - V2.1.0.21 and later versions of the e2 studio
     (V1.0.0 and later versions of the Code Generator Plug-in)
   - V1.05.00 and later versions of the AP4 coding assistance tool for RX*

   *: This note also applies to the following products.
      - V1.00.00 and later versions of the Application Leading Tool,
        which is a coding assistance tool for RX MCUs

Note: The Application Leading Tool for RX is listed separately because its name has been changed to AP4 for RX from V1.05.00 (the latter are the newer versions of the former).

1.2 Applicable MCUs
RX family: RX71M, RX64M, RX230, RX231, RX23T, RX110, RX111, and RX113 groups

1.3 Description
When using the I2C bus interface (RIIC) in master or slave mode, permitting or prohibiting the suspension of transfer in response to negative-acknowledge (NACK) reception is not configured properly, due to errors in two symbol definitions in r_cg_riic.h.

1.4 Workaround
Modify the symbol definitions in r_cg_riic.h as described below.
This modification is required every time code is generated. However, the "user code protection function" can be used to maintain the modified symbol definition when code is generated again. Refer to the following FAQ for the details.

FAQ No. 1011724
https://www.renesas.com/en-sg/search/keyword-search.html#q=FAQNo:1011724

Before modification:
```
------------------------------------------------------------------------
/*
  I2C bus function enable register (ICFER)
*/
/* NACK reception transfer suspension enable (NACKE) */
#define _00_IIC_NACK_SUSPENSION_ENABLE          (0x00U)
            /* Transfer operation not suspended during NACK */
#define _10_IIC_NACK_SUSPENSION_DISABLE         (0x10U)
            /* Transfer operation suspended during NACK */
------------------------------------------------------------------------
```

After modification:
```
------------------------------------------------------------------------
/*
  I2C bus function enable register (ICFER)
*/
/* NACK reception transfer suspension enable (NACKE) */
#define _00_IIC_NACK_SUSPENSION_ENABLE          (0x10U)
```

```
             /* Transfer operation not suspended during NACK */
      #define _10_IIC_NACK_SUSPENSION_DISABLE          (0x00U)
             /* Transfer operation suspended during NACK */
      --------------------------------------------------------------------
```

1.5 Schedule for fixing the problem
   This problem will be fixed in the next version.

2. Settings for the output of RTCOUT from the real time clock (RTC)
2.1 Applicable products
   - V1.00.00 and later versions of the CS+ Code Generator for RX
   - V2.1.0.21 and later versions of the e2 studio
     (V1.0.0 and later versions of the Code Generator Plug-in)
   - V1.05.00 and later versions of the AP4 coding assistance tool for RX*

     *: This note also applies to the following products.
        - V1.00.00 and later versions of the Application Leading Tool,
          which is a coding assistance tool for RX MCUs.

     Note: The Application Leading Tool for RX is listed separately because
           its name has been changed to AP4 for RX from V1.05.00 (the
           latter are the newer versions of the former).

2.2 Applicable MCUs
   RX family: RX110, RX111, and RX113 groups

2.3 Descriptions
   Generated code has an error when the real-time clock (RTC) is used in
   binary counting mode and it is set up with the output of RTCOUT (a 1-Hz
   or 64-Hz clock) enabled.
   Due to an error in the assignment operator for RTC control register 2
   (RCR2), the value is not set correctly.

2.4 Workaround
   Modify the code output for void R_RTC_Create(void) in the way shown
   below, according to the device you are using. The function is in the
   r_cg_rtc.c file. This modification is required every time code is
   generated.

   Before modification:
   ----
   void R_RTC_Create(void)
   {
   ....
      /* Select count mode */
```

```
      RTC.RCR2.BIT.CNTMD = 1U;
   ..............
      /* Set control registers */
      RTC.RCR2.BYTE = _08_RTC_RTCOUT_OUTPUT_ENABLE;   /* <- Simple   */
                                    /*   assignment */
                                    /*   Operator   */


   ..............
   }
   -----------------------------------------------------------------------

   After modification:
   -----------------------------------------------------------------------
   void R_RTC_Create(void)
   {
   ..............
      /* Select counting mode */
      RTC.RCR2.BIT.CNTMD = 1U;
   ..............
      /* Set control register */
      RTC.RCR2.BYTE |= _08_RTC_RTCOUT_OUTPUT_ENABLE;   /* <- OR      */
                                    /*   assignment */
                                    /*    Operator  */


   ..............
   }
   -----------------------------------------------------------------------
```

2.5 Schedule for fixing the problem
   This problem will be fixed in the next version.

3. Setting of the data transfer controller (DTC)
3.1 Applicable products
   - V1.02.00 and later versions of the CS+ Code Generator for RX
   - V1.05.00 and later versions of the AP4 coding assistance tool for RX*

    *: This note also applies to the following products.
        - V1.02.01 and later versions of the Application Leading Tool,
          which is a coding assistance tool for RX MCUs

   Note: The Application Leading Tool for RX is listed separately because
         its name has been changed to AP4 for RX from V1.05.00 (the
         latter are the newer versions of the former).

3.2 Applicable MCUs

3.3 Description

If you make settings for peripheral functions and handle projects with the following procedure, settings that have already been made for the data transfer controller (DTC) are returned to their initial states.

(1) Set the DTC and close the project after saving it.
(2) Open the project in (1) again, and set the peripheral function after opening the setting screen for the peripheral function other than DTC (e.g., an 8-bit timer).
(3) Close the project after saving it.
(4) Open the project which was set in steps (1) to (3) again.

3.4 Workaround

When setting peripheral functions in a project which is intended to include setting of the DTC, start by opening the DTC setting screen and only then set the other peripheral functions.

3.5 Schedule for fixing the problem

This problem will be fixed in the next version.