[Notes]
CS+ Code Generator for RX,
e² studio Code Generator Plug-in,
AP4 Coding Assistance Tool for RX

Outline
When using the products in the title, note the following point.
1. Port direction register (PDR) settings

1. Port Direction Register (PDR) Settings

1.1 Applicable Products
- V1.08.00 and later versions of the CS+ Code Generator for RX
- V3.0.1.9 and later versions of e² studio (V2.0.2 and later versions of the Code Generator plug-in)
- V1.07.00 and later versions of the AP4 coding assistance tool for RX

1.2 Applicable MCUs
- RX family: RX230 and RX231 groups

1.3 Details
If the port direction register (PDR) contains control bits* for "nonexistent ports", those control bits must be set to “1” (output port), but code is not generated correctly.

*: The PDR might have been assigned control bits for “nonexistent ports” due to the MCU specifications.

This setting is required for reading the PIDR register. If the PIDR register will not be read, processing is not affected by the setting described in this note.

1.4 Workaround
See the user's manual for the applicable MCU, and then add the initial values of the port direction register (PDR) to the following function. This modification is required every time code is generated.
- void R_PORT_Create(void) in the source file r_cg_port.c

https://www.renesas.com/search/keyword-search.html#genre=document&q=r01uh0496
RX230 Group, RX231 Group User's Manual: Hardware
21.4 Initialization of the Port Direction Register (PDR)
The following is an example of the required modification.

- Modification for changing the PORT0 setting in the RX231 group R5F52315AxFP (100-pin)

<table>
<thead>
<tr>
<th>Port0</th>
<th>Port1</th>
<th>Port2</th>
<th>Port3</th>
<th>Port4</th>
<th>Port5</th>
<th>Port6</th>
<th>Port7</th>
<th>Port8</th>
</tr>
</thead>
<tbody>
<tr>
<td>P03</td>
<td>Unused</td>
<td>In</td>
<td>Out</td>
<td></td>
<td>Pullup</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P05</td>
<td>Unused</td>
<td>In</td>
<td>Out</td>
<td></td>
<td>Pullup</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P07</td>
<td>Unused</td>
<td>In</td>
<td>Out</td>
<td></td>
<td>Pullup</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1 Example of Display when PORT0 is Set in R5F52315AxFP (100-pin)**

P00, P01, P02, P04, and P06 are nonexistent ports.

Add the processing in red.

Before modification:

```c
/************************************************************
* Function Name: R_PORT_Create
* Description : This function initializes the Port I/O.
* Arguments    : None
* Return Value : None
***************************************************************************/
void R_PORT_Create(void)
{
    PORT0.PDR.BYTE = _08_Pm3_MODE_OUTPUT;
}
```

After modification:

```c
/************************************************************
* Function Name: R_PORT_Create
* Description : This function initializes the Port I/O.
* Arguments    : None
* Return Value : None
***************************************************************************/
void R_PORT_Create(void)
{
    PORT0.PDR.BYTE = _08_Pm3_MODE_OUTPUT | 0x57;
}
21.4 Initialization of the Port Direction Register (PDR)

**Table 21.3  PDR Register Settings in 100-Pin Packages**

<table>
<thead>
<tr>
<th>Port Symbol</th>
<th>b7</th>
<th>b6</th>
<th>b5</th>
<th>b4</th>
<th>b3</th>
<th>b2</th>
<th>b1</th>
<th>b0</th>
</tr>
</thead>
<tbody>
<tr>
<td>PORT0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>PORT1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PORT2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PORT3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>PORT4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PORT5</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PORTA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PORTB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PORTC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PORTD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PORTE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PORTH(^1)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PORTJ</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note 1  This setting is required only for the products of the RX230 group, but not for the products of the RX230 group.*

**1.5  Schedule for Fixing the Problem**

This problem will be fixed in a later version.
# Revision History

<table>
<thead>
<tr>
<th>Rev.</th>
<th>Date</th>
<th>Description</th>
<th>Page</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>Mar. 1, 2017</td>
<td>First edition issued</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

TOYOSU FORESIA, 3-2-24 Toyosu, Koto-ku, Tokyo 135-0061 Japan
Renesas Electronics Corporation

- Inquiry
  [https://www.renesas.com/contact/](https://www.renesas.com/contact/)

Renesas Electronics has used reasonable care in preparing the information included in this document, but Renesas Electronics does not warrant that such information is error free. Renesas Electronics assumes no liability whatsoever for any damages incurred by you resulting from errors in or omissions from the information included herein.

The past news contents have been based on information at the time of publication. Now changed or invalid information may be included. The URLs in the Tool News also may be subject to change or become invalid without prior notice.

All trademarks and registered trademarks are the property of their respective owners.