# [Notes]

R20TS0518EJ0100 Rev.1.00 Dec. 16, 2019

**RX** Family

Simple I<sup>2</sup>C Module Firmware Integration Technology,

## RX Driver Package

## Outline

When using the products in the title, note the following point.

1. Invalid bit rate by the "R\_SCI\_IIC\_Open" function

### 1. Invalid Bit Rate by the "R\_SCI\_IIC\_Open" Function

### 1.1 Applicable Products

(1) Simple I<sup>2</sup>C module Firmware Integration Technology (Simple I<sup>2</sup>C FIT module)

The applicable revision numbers and document numbers are as follows.

Table 1.1 Simple I<sup>2</sup>C FIT module applicable products

Simple I <sup>2</sup> C FIT module revision number	Document number
Rev.2.43	R01AN1691EJ0243

#### (2) RX Driver Package

The Simple I<sup>2</sup>C FIT module in (1) is also included in the RX Driver Package. The product names and revision numbers of the applicable RX Driver Package and the revision numbers of the Simple I<sup>2</sup>C FIT module are as follows.

#### Table 1.2 Products that include the Simple I<sup>2</sup>C FIT module

RX Driver Package product name	RX Driver Package revision number	Document number	Revision number of the included Simple I <sup>2</sup> C FIT module
RX Family RX Driver Package, Ver.1.22	Rev.1.22	R01AN4873EJ0122	Rev.2.43

### 1.2 Applicable Devices

RX72M group

### 1.3 Details

In the "sci\_iic\_set\_frequency" function that is called within the "R\_SCI\_IIC\_Open" function, an unexpected value may be set in the bit rate register (BRR) and the clock select bit (SMR.CKS) in the serial mode register. As a result, an invalid bit rate is set.



## 1.4 Conditions

This error occurs when all of the following conditions are met:

- One of SCI7 to SCI9 in the SCIi module is used in simple I<sup>2</sup>C mode.
- The frequencies of the PCLKA and PCLKB peripheral module clocks are different.

### 1.5 Workaround

Add settings for SCI7 to SCI9 in the SCIi module to the "r\_sci\_iic\_rx72m.c" source file. The parts to be added are indicated in red in the corrected source file below.

Before modification

Line	Source code			
number				
988	<pre>static void sci_iic_set_frequency (sci_iic_info_t *</pre>			
	p_sci_iic_info)			
989				
-	Omitted			
1003	if ((SCI_IIC_NUM_CH10 == p_sci_iic_info->ch_no)			
	(SCI_IIC_NUM_CH11 == p_sci_iic_info->ch_no))			
1004	{			
1005	<pre>brr_n_tmp = brr_n;</pre>			
1006	<pre>brr_value = (uint32_t) ((double) ((double) ((double)</pre>			
	BSP_PCLKA_HZ / (brr_n_tmp * (prom->bitrate)))) - 0.1);			
1007	}			
1008	else			
1009	{			
1010	<pre>brr_n_tmp = brr_n;</pre>			
1011				
	<pre>BSP_PCLKB_HZ / (brr_n_tmp * (prom-&gt;bitrate)))) - 0.1);</pre>			
1012	}			
-	Omitted			
1046	if ((SCI_IIC_NUM_CH10 == p_sci_iic_info->ch_no)			
1045	(SCI_IIC_NUM_CH11 == p_sci_iic_info->ch_no))			
1047				
1048	<pre>brr_n_tmp = brr_n;</pre>			
1049	brr_value = (uint32_t) ((double) (((double)			
1050	BSP_PCLKA_HZ / (brr_n_tmp * (prom->bitrate)))) - 0.1);			
1050	}			
1051	else			
1052				
1053 1054	<pre>brr_n_tmp = brr_n; brr_volume = (vint22 t) ((double) (((double))</pre>			
1054	brr_value = (uint32_t) ((double) (((double)			
1055	BSP_PCLKB_HZ / (brr_n_tmp * (prom->bitrate)))) - 0.1);			
T022	} Omitted			
1066	pregs->SMR.BYTE  = cks_value_tmp; /* Sets SMR */			
1068	pregs->SMR.BITE  = CKS_value_tmp; /* Sets SMR */ pregs->BRR = brr_value; /* Sets BRR */			
1067	<pre>/* End of function sci_iic_set_frequency() */</pre>			
T000	} /" End of function sci_fic_set_frequency() ^/			

#### After modification

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Line	Courao aodo				
number	Source code				
maniber					
988	<pre>static void sci_iic_set_frequency (sci_iic_info_t *</pre>				
	p_sci_iic_info)				
989					
-	Omitted				
1003	if ((SCI_IIC_NUM_CH7 == p_sci_iic_info->ch_no)    ¥				
1004	(SCI_IIC_NUM_CH8 == p_sci_iic_info->ch_no)    ¥				
1005	(SCI_IIC_NUM_CH9 == p_sci_iic_info->ch_no)    ¥				
1006	(SCI_IIC_NUM_CH10 == p_sci_iic_info->ch_no)    ¥				
1007	(SCI_IIC_NUM_CH11 == p_sci_iic_info->ch_no))				
1008	{ {				
1009	brr_n_tmp = brr_n;				
1010	brr_value = (uint32_t) ((double) ((double) ((double)				
	BSP_PCLKA_HZ / (brr_n_tmp * (prom->bitrate)))) - 0.1);				
1011	}				
1012	else				
1013	{				
1014	<pre>brr_n_tmp = brr_n;</pre>				
1015	brr_value = (uint32_t) ((double) ((double) ((double)				
	BSP_PCLKB_HZ / (brr_n_tmp * (prom->bitrate)))) - 0.1);				
1016	}				
-	Omitted				
1050	if ((SCI_IIC_NUM_CH7 == p_sci_iic_info->ch_no)    ¥				
1051	(SCI_IIC_NUM_CH8 == p_sci_iic_info->ch_no)    ¥				
1052	(SCI_IIC_NUM_CH9 == p_sci_iic_info->ch_no)    ¥				
1053	(SCI_IIC_NUM_CH10 == p_sci_iic_info->ch_no)    ¥				
1054	(SCI_IIC_NUM_CH11 == p_sci_iic_info->ch_no))				
1055	{				
1056	<pre>brr_n_tmp = brr_n;</pre>				
1057	<pre>brr_value = (uint32_t) ((double) (((double)</pre>				
	BSP_PCLKA_HZ / (brr_n_tmp * (prom->bitrate)))) - 0.1);				
1058	}				
1059	else				
1060	{				
1061	<pre>brr_n_tmp = brr_n;</pre>				
1062	<pre>brr_value = (uint32_t) ((double) (((double)</pre>				
	BSP_PCLKB_HZ / (brr_n_tmp * (prom->bitrate)))) - 0.1);				
1063	}				
-	Omitted				
1074	pregs->SMR.BYTE  = cks_value_tmp;				
1075	pregs->BRR = brr_value; /* Sets BRR */				
1076	<pre>} /* End of function sci_iic_set_frequency() */</pre>				

## 1.6 Schedule for Fixing the Problem

This problem will be fixed in the next version Rev.2.45 (Note). (Scheduled to be released in 2020.) Note: Rev.2.44 will not be released. **Revision History** 

		Description	
Rev.	Date	Page	Summary
1.00	Dec.16.19	-	First edition issued

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