# [Notes]

# e<sup>2</sup> studio,

# CS+ Device Information for RX Family

## Outline

When using the e<sup>2</sup> studio and CS+ device information for the RX family, note the following point.

1. Display and writing of I/O registers when the RX113 group is used

## 1. Display and Writing of I/O Registers When the RX113 Group is Used

#### 1.1 Applicable Products

- $\succ$  e<sup>2</sup> studio V5.3.0 and later
- ► CS+ device information for RX family V2.00.00 and later

#### 1.2 Applicable MCUs

► RX Family: RX113 Group

#### 1.3 Details

When the following I/O registers are displayed in the IO panel and watch panel of CS+, and in the IO view of  $e^2$  studio, the values might not be displayed correctly and not be able to be written.

> Applicable I/O registers: The following 13 I/O registers (framed in red)

| Module name | Register<br>name | Address    | Register<br>Size | R/W | Expected<br>value<br>example | Display example<br>CS+: IO panel/Watch panel<br>e <sup>2</sup> studio: IO view |
|-------------|------------------|------------|------------------|-----|------------------------------|--|
| CTSU        | CTSUSSC          | 000A 0912h | 16bit            | R/W | 0x0F00                       | 0x00   |
| FLASH       | FSCMR            | 007F C0B0h | 16bit            | R   | 0x7F00                       | 0x00   |
| POE         | OCSR1            | 0008 8902h | 16bit            | R/W | 0x0300                       | 0x03   |
| POE         | ICSR3            | 0008 890Eh | 16bit            | R/W | 0x0200                       | 0x02   |
| SYSTEM      | SBYCR            | 0008 000Ch | 16bit            | R/W | 0x8000                       | 0x00   |
| SYSTEM      | SCKCR3           | 0008 0026h | 16bit            | R/W | 0x0100                       | 0x00   |
| SYSTEM      | CKOCR            | 0008 003Eh | 16bit            | R/W | 0xF700                       | 0x00   |
| USB         | INTENB0          | 000A 0030h | 16bit            | R/W | 0xFF00                       | 0x00   |
| USB         | PIPE1TRE         | 000A 0090h | 16bit            | R/W | 0x0300                       | 0x00   |
| USB         | PIPE2TRE         | 000A 0094h | 16bit            | R/W | 0x0300                       | 0x00   |
| USB         | PIPE3TRE         | 000A 0098h | 16bit            | R/W | 0x0300                       | 0x00   |
| USB         | PIPE4TRE         | 000A 009Ch | 16bit            | R/W | 0x0300                       | 0x00   |
| USB         | PIPE5TRE         | 000A 00A0h | 16bit            | R/W | 0x0300                       | 0x00   |



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Example of invalid display in CS+: SCKCR3 is incorrectly displayed as 0x00.

| DR                           |            |                 |               |   |
|------------------------------|------------|-----------------|---------------|---|
| 🕽   🍘   🖏 🗙   Notation 🕶   🖷 |            |                 |               |   |
|                              |            |                 |               |   |
|                              |            |                 |               |   |
| OR                           | Value      | Type(Byte Size) | Address       | 1 |
| SYSTEM.MSTPCRC.DSLPE         | 0x0        | IOR(1bits)      | 0x00080018.31 |   |
| SYSTEM.MSTPCRC.MSTPC27       | 0x1        | IOR(1bits)      | 0x00080018.27 |   |
| SYSTEM.MSTPCRC.MSTPC26       | 0x1        | IOR(1bits)      | 0x00080018.26 |   |
| SYSTEM.MSTPCRC.MSTPC20       | 0x1        | IOR(1bits)      | 0x00080018.20 |   |
| SYSTEM.MSTPCRC.MSTPC19       | 0x1        | IOR(1bits)      | 0x00080018.19 |   |
| SYSTEM.MSTPCRC.MSTPC0        | 0x0        | IOR(1bits)      | 0x00080018.0  |   |
| SYSTEM.MSTPCRD               | 0xfffffff  | IOR(4)          | 0x0008001c    |   |
| SYSTEM.MSTPCRD.MSTPD15       | 0x1        | IOR(1bits)      | 0x0008001c.15 |   |
| 🚮 SYSTEM.MSTPCRD.MSTPD11     | 0x1        | IOR(1bits)      | 0x0008001c.11 |   |
| 👔 SYSTEM.MSTPCRD.MSTPD10     | 0x1        | IOR(1bits)      | 0x0008001c.10 |   |
| SYSTEM. SCKCR                | 0x33000303 | IOR(4)          | 0x00080020    |   |
| 👔 SYSTEM. SCKCR. FCK         | 0x3        | IOR(4bits)      | 0x00080020.28 |   |
| 🚺 SYSTEM. SCKCR. ICK         | 0x3        | IOR(4bits)      | 0x00080020.24 |   |
| 🚮 SYSTEM. SCKCR. PCKB        | 0x3        | IOR(4bits)      | 0x00080020.8  |   |
| 👔 SYSTEM. SCKCR. PCKD        | 0x3        | IOR(4bits)      | 0x00080020.0  |   |
| SYSTEM. SCKCR3               | 0x00       | IOR(1)          | 0x00080026    |   |
| JUSTEM. SCKCR3. CKSEL        | 0x0        | IOR(3bits)      | 0x00080026.0  |   |
| 🚮 SYSTEM. PLLCR              | 0x0f00     | IOR(2)          | 0x00080028    |   |
| SYSTEM. PLLCR.STC            | 0x0f       | IOR(6bits)      | 0x00080028.8  |   |
| 🚮 SYSTEM. PLLCR. PLIDIV      | 0x0        | IOR(2bits)      | 0x00080028.0  |   |
| FI SYSTEM. PLLCR2            | 0x01       | IOR(1)          | 0x0008002a    |   |
| 👔 SYSTEM. PLLCR2. PLLEN      | 0x1        | IOR(1bits)      | 0x0008002a.0  |   |
| FI SYSTEM. UPLLCR            | 0x0f00     | IOR(2)          | 0x0008002c    |   |
| SYSTEM.UPLLCR.USTC           | 0x0f       | IOR(6bits)      | 0x0008002c.8  |   |
| SYSTEM. UPLLCR. UCKUPLLS     | 0x0        | IOR(1bits)      | 0x0008002c.4  |   |

Example of invalid display in e<sup>2</sup> studio: SCKCR3 is incorrectly displayed as 0x00.

| (x)= Variables 💁 Breakpoints 👘   | Registers 🛛 🛋 Modu | les ಕ್ಲೇ Expressions ( | P Eventpoints 🔲 IC | ) Registers 🛛 🗖 🗖 |  |  |
|----------------------------------|--------------------|------------------------|--------------------|-------------------|--|--|
|                                  |                    |                        | 🖽 🖻 🎜 🔕 술          | ; 🔍 🚍 💾 🛃 🗵       |  |  |
| Name<br>V O FLASH                | Value (Hex)        | Value (Bin)            | Address            | Access            |  |  |
| V SCMR                           | 0x00               | 00000000               | 0x007fc0b0         | RW                |  |  |
| SASMF                            | 0x0                | 0                      |                    |                   |  |  |
| ✓ ○ SYSTEM                       |                    |                        |                    |                   |  |  |
| V 🛛 SCKCR3                       | 0x00               | 0000000                | 0x00080026         | RW                |  |  |
| CKSEL                            | 0x0                | 000                    |                    |                   |  |  |
|                                  |                    |                        |                    |                   |  |  |
| All Registers Selected Registers |                    |                        |                    |                   |  |  |

# 1.4 Workaround

#### 1.4.1 CS+

Register the register address in a watch format (with square brackets "[]") and set the byte size as 2.

Note that the display is fixed by this workaround, but writing cannot be performed.

| Watch1 ⊠<br>🗟   🏶   🧞 🖏 🗙   Notation • |                       |                     |  |  |  |  |  |  |
|--|-----------------------|---------------------|--|--|--|--|--|--|
| Watch                                  | Value Type(Byte Size) | Address Memo        |  |  |  |  |  |  |
| [0x000a0912]                           | 0x0f00 ?(2)           | 0x000a0912 CTSUSSC  |  |  |  |  |  |  |
| [0x007fc0b0]                           | 0x7f00 2(2)           | 0x007fc0b0 FSCMR    |  |  |  |  |  |  |
| [0x00088902]                           | 0x8300 ?(2)           | 0x00088902 OCSR1    |  |  |  |  |  |  |
| 🐳 [0x0008890e]                         | 0x1200 ?(2)           | 0x0008890e ICSR3    |  |  |  |  |  |  |
| 🐳 [0x0008000c]                         | 0x0000 ?(2)           | 0x0008000c SBYCR    |  |  |  |  |  |  |
| 🐳 [0x00080026]                         | 0x0000 ?(2)           | 0x00080026 SCKCR3   |  |  |  |  |  |  |
| 🐳 [0x0008003e]                         | 0x0000 ?(2)           | 0x0008003e CKOCR    |  |  |  |  |  |  |
| [0x000a0030]                           | 0xff00 ?(2)           | 0x000a0030 INTENB0  |  |  |  |  |  |  |
| [0x000a0090]                           | 0x0300 ?(2)           | 0x000a0090 PIPE1TRE |  |  |  |  |  |  |
| [0x000a0094]                           | 0x0300 ?(2)           | 0x000a0094 PIPE2TRE |  |  |  |  |  |  |
| 👻 [0x000a0098]                         | 0x0300 ?(2)           | 0x000a0098 PIPE3TRE |  |  |  |  |  |  |
| 🐳 [0x000a009c]                         | 0x0300 2(2)           | 0x000a009c PIPE4TRE |  |  |  |  |  |  |
| [0x000a00a0]                           | 0x0300 ?(2)           | 0x000a00a0 PIPE5TRE |  |  |  |  |  |  |
|  |                       |                     |  |  |  |  |  |  |
|  |                       |                     |  |  |  |  |  |  |

#### 1.4.2 e<sup>2</sup> studio

In the memory view, display a value in units of one byte<sup>(Note)</sup> and check the display.

Note that writing can be performed, but access must be performed in units of one byte.

Note: In the following dialog box which is opened by right-clicking in the memory view and then clicking [Format...], specify 1 for the column size.

| e <sup>2</sup> Format          |        |       |        |        |        |        |      |   |   |   |   |     |   |   |        | ×          |
|--------------------------------|--------|-------|--------|--------|--------|--------|------|---|---|---|---|-----|---|---|--------|------------|
| Please specify (               | colur  | mn ar | nd row | w size |        |        |      |   |   |   |   |     |   |   |        |            |
| Row Size: 16 v unit(s) per row |        |       |        |        |        |        |      |   |   |   |   |     |   |   |        |            |
| Column Size:                   |        |       |        |        |        |        |      |   |   |   |   |     |   |   |        |            |
| Preview:                       |        |       |        |        |        |        |      |   |   |   |   |     |   |   | Save a | s Defaults |
|                                |        |       |        |        |        |        |      |   |   |   |   |     |   |   |        |            |
| <address></address>            | x      | x     | x      | x      | x      | x      | x    | x | x | x | x | x   | x | x | x      | x          |
| <address></address>            | х      | х     | х      | х      | х      | х      | х    | х | х | х | х | х   | х | х | х      | x          |
| <address></address>            | х      | х     | х      | х      | х      | х      | х    | х | х | х | х | х   | х | х | х      | x          |
| <address></address>            | х      | х     | х      | х      | х      | х      | х    | х | х | х | х | х   | х | х | х      | x          |
| Default Row Siz                | ze:    | 16    |        | uni    | t(s) p | er rov | v    |   |   |   |   |     |   |   |        |            |
| Default Colum                  | n Size | e: 4  |        | uni    | t(s) p | er co  | lumn |   |   |   |   |     |   |   |        |            |
|                                |        |       |        |        |        |        |      |   |   |   |   |     |   | F | estor  | e Defaults |
|                                |        |       |        |        |        |        |      |   |   |   |   |     |   |   |        |            |
| ?                              |        |       |        |        |        |        |      |   |   |   |   | OK  |   |   | Ca     | ncel       |
| J                              |        |       |        |        |        |        |      |   |   |   |   | 2.0 |   |   |        |            |



The FSCMR, OCSR1, and ICSR3 I/O registers can be checked by this method. For other I/O registers, the alignment of the address is inverted.

For example, for the SCKCR3 register, 0x00080026 and 0x00080027 are displayed in the memory view as follows. At this time, the value of the SCKCR3 register is 0x0300.

| 📃 Console 🔕 タスク 👭 Curre | 🗿 Renes 🔋 Memo   |         | Perfor | 🕑 Pro | ofile 🦓 | Ç Real-ti | 🗞 1 | frace 🤇 | ) Visual | 🧆  | スマート | 🖹 問 | 題 🔘       | 実行可   | . 🚺 M | lemory | 82 - | ° 🗆 |
|-------------------------|--|---------|--------|-------|---------|-----------|-----|---------|----------|----|------|-----|-----------|-------|-------|--------|------|-----|
|                         |  |         |        |       |         |           |     |         |          |    |      | 1   | 1010 1010 | \$ \$ | ⇒te   |        | - 6  | ~ ~ |
| Monitors 💠 💥 💥          | 0x80026 : 0x80026 <hex int<="" th=""><th>eger&gt; S</th><th>3 🕂</th><th>New R</th><th>enderin</th><th>gs)</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></hex> | eger> S | 3 🕂    | New R | enderin | gs)       |     |         |          |    |      |     |           |       |       |        |      |     |
| 0x80026                 | Address  | 0       | 1      | 2     | 3       | 4         | 5   | 6       | 7        | 8  | 9    | A   | в         | с     | D     | Е      | F    | ^   |
|                         | 000000000080020  | 03      | 03     | 00    | 33      | 00        | 00  | 00      | 03       | 00 | OF   | 01  | 00        | 00    | OF    | 01     | 00   |     |
|                         | 000000000080030  | 00      | 00     | 01    | 00      | 00        | 01  | 00      | 00       | 00 | 00   | 00  | 00        | 08    | 00    | 00     | F7   |     |
|                         | 000000000080040  | 00      | 00     | 01    | 00      | 00        | 00  | 00      | 00       | 00 | 00   | 00  | 00        | 00    | 00    | 00     | 00   |     |
|                         | 000000000080050  | 00      | 01     | 00    | 00      | 00        | 00  | 00      | 00       | 00 | 00   | 00  | 00        | 00    | 00    | 00     | 00   |     |
|                         | 0000000000080060   | 02      | 00     | 00    | 00      | 13        | 00  | 00      | 00       | 1F | 00   | 00  | 00        | 00    | 00    | 00     | 00   |     |
|                         | 000000000080070  | 00      | 00     | 00    | 00      | 00        | 00  | 00      | 00       | 00 | 00   | 00  | 00        | 00    | 00    | 00     | 00   | ~   |

# 1.5 Schedule for Fixing the Problem

This problem will be fixed in a later version.



# **Revision History**

|      |               | Description |                      |  |  |  |  |  |  |
|------|---------------|-------------|----------------------|--|--|--|--|--|--|
| Rev. | Date          | Page        | Summary              |  |  |  |  |  |  |
| 1.00 | Apr. 16, 2017 | -           | First edition issued |  |  |  |  |  |  |
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