

# Smart Configurator for RX Plug-in in e2 studio 2022-10

## Smart Configurator for RX V2.15.0

### Release Note

#### Introduction

Thank you for using the Smart Configurator for RX.

This document describes the restrictions and points for caution. Read this document before using the product.

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## 1. Introduction

Smart Configurator is a utility for combining software to meet your needs. It supports the following three functions related to the embedding of Renesas drivers in your systems: importing middleware, generating driver code, and setting pins.

Smart Configurator for RX V2.15.0 is equivalent to Smart Configurator for RX plug-in in e<sup>2</sup> studio 2022-10.

### 1.1 System requirements

The operating environment is as follows.

#### 1.1.1 PC

- System: x64/x86 based processor
  - Windows® 11
  - Windows® 10 (64-bit version)
  - Windows® 8.1 (64-bit version)
- Memory capacity: We recommend 4 GB or more
- Capacity of hard disk: At least 300 MB of free space.
- Display: Graphics resolution should be at least 1024 x 768, and the mode should display at least 65,536 colors.
- Processor: 1 GHz or higher (must support hyper-threading, multi-core CPUs)

#### 1.1.2 Development Environments

- Renesas electronics Compiler for RX [CC-RX] V3.01.00 or later
- GCC for Renesas 4.8.4.201902 or later
- IAR Embedded Workbench 4.12.1 or later

## 2. Support List

### 2.1 Support Devices List

Below is a list of devices supported by the Smart Configurator for RX V2.15.0.

**Table 2-1 Support Devices**

| Group<br>(HW Manual number)      | PIN    | Device name                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RX110 Group<br>(R01UH0421EJ0120) | 36pin  | R5F5110HAxLM, R5F5110JAxLM, R5F51101AxLM, R5F51103AxLM                                                                                                                                                                                                                                                                                                        |
|                                  | 40pin  | R5F51101AxNF, R5F51103AxNF, R5F5110HAxNF, R5F5110JAxNF                                                                                                                                                                                                                                                                                                        |
|                                  | 48pin  | R5F51101AxNE, R5F51103AxNE, R5F51104AxNE, R5F51105AxNE,<br>R5F5110JAxNE, R5F51101AxFL, R5F51103AxFL, R5F51104AxFL,<br>R5F51105AxFL, R5F5110JAxFL                                                                                                                                                                                                              |
|                                  | 64pin  | R5F51101AxLF, R5F51103AxLF, R5F51104AxLF, R5F51105AxLF,<br>R5F5110JAxLF, R5F51101AxFK, R5F51103AxFK, R5F51104AxFK,<br>R5F51105AxFK, R5F5110JAxFK, R5F51101AxFM, R5F51103AxFM,<br>R5F51104AxFM, R5F51105AxFM, R5F5110JAxFM                                                                                                                                     |
| RX111 Group<br>(R01UH0365EJ0130) | 36pin  | R5F51111AxLM, R5F51113AxLM, R5F5111JAxLM                                                                                                                                                                                                                                                                                                                      |
|                                  | 40pin  | R5F51111AxNF, R5F51113AxNF, R5F5111JAxNF                                                                                                                                                                                                                                                                                                                      |
|                                  | 48pin  | R5F51111AxFL, R5F51113AxFL, R5F51114AxFL, R5F51115AxFL,<br>R5F51116AxFL, R5F51117AxFL, R5F51118AxFL, R5F5111JAxFL,<br>R5F51111AxNE, R5F51113AxNE, R5F51114AxNE, R5F51115AxNE,<br>R5F51116AxNE, R5F51117AxNE, R5F51118AxNE, R5F5111JAxNE                                                                                                                       |
|                                  | 64pin  | R5F51111AxFM, R5F51113AxFM, R5F51114AxFM, R5F51115AxFM,<br>R5F51116AxFM, R5F51117AxFM, R5F51118AxFM, R5F5111JAxFM,<br>R5F51111AxFK, R5F51113AxFK, R5F51114AxFK, R5F51115AxFK,<br>R5F51116AxFK, R5F51117AxFK, R5F51118AxFK, R5F5111JAxFK,<br>R5F51111AxLF, R5F51113AxLF, R5F51114AxLF, R5F51115AxLF,<br>R5F51116AxLF, R5F51117AxLF, R5F51118AxLF, R5F5111JAxLF |
| RX113 Group<br>(R01UH0448EJ0110) | 64pin  | R5F51135AxFM, R5F51136AxFM, R5F51137AxFM, R5F51138AxFM                                                                                                                                                                                                                                                                                                        |
|                                  | 100pin | R5F51135AxLJ, R5F51136AxLJ, R5F51137AxLJ, R5F51138AxLJ,<br>R5F51135AxFP, R5F51136AxFP, R5F51137AxFP, R5F51138AxFP                                                                                                                                                                                                                                             |
| RX130 Group<br>(R01UH0560EJ0200) | 48pin  | R5F51303AxFL, R5F51305AxFL, R5F51303AxNE, R5F51305AxNE,<br>R5F51306AxNE, R5F51306AxFL, R5F51307AxNE, R5F51307AxFL,<br>R5F51308AxNE, R5F51308AxFL, R5F51306BxFL                                                                                                                                                                                                |
|                                  | 64pin  | R5F51303AxFM, R5F51305AxFM, R5F51303AxFK, R5F51305AxFK,<br>R5F51306AxFK, R5F51306AxFM, R5F51307AxFK, R5F51307AxFM,<br>R5F51308AxFK, R5F51308AxFM, R5F51308AxFK, R5F51308AxFM,<br>R5F51306BxFK, R5F51306BxFM                                                                                                                                                   |
|                                  | 80pin  | R5F51303AxFN, R5F51305AxFN, R5F51306AxFN, R5F51306BxFN                                                                                                                                                                                                                                                                                                        |
|                                  | 100pin | R5F51305AxFP, R5F51306AxFP, R5F51307AxFP, R5F51308AxFP,<br>R5F51305BxFP, R5F51306BxFP                                                                                                                                                                                                                                                                         |
| RX13T Group<br>(R01UH0822EJ0100) | 32pin  | R5F513T3AxFJ, R5F513T5AxFJ, R5F513T3AxNH, R5F513T5AxNH                                                                                                                                                                                                                                                                                                        |
|                                  | 48pin  | R5F513T5AxFL, R5F513T3AxFL, R5F513T5AxNE, R5F513T3AxNE                                                                                                                                                                                                                                                                                                        |
| RX230 Group<br>(R01UH0496EJ0110) | 48pin  | R5F52305AxNE, R5F52306AxNE, R5F52305AxFL, R5F52306AxFL                                                                                                                                                                                                                                                                                                        |
|                                  | 64pin  | R5F52305AxND, R5F52306AxND, R5F52305AxFM, R5F52306AxFM,<br>R5F52305AxLF, R5F52306AxLF                                                                                                                                                                                                                                                                         |
|                                  | 100pin | R5F52305AxLA, R5F52306AxLA, R5F52305AxFP, R5F52306AxFP                                                                                                                                                                                                                                                                                                        |

Table 2-2 Support Devices

| Group<br>(HW Manual number)        | PIN        | Device name                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RX231 Group<br>(R01UH0496EJ0110)   | 48pin      | R5F52315AxNE, R5F52316AxNE, R5F52317AxNE, R5F52318AxNE,<br>R5F52315CxNE, R5F52316CxNE, R5F52317BxNE, R5F52318BxNE,<br>R5F52315AxFL, R5F52316AxFL, R5F52317AxFL, R5F52318AxFL,<br>R5F52315CxFL, R5F52316CxFL, R5F52317BxFL, R5F52318BxFL                                                                                                                       |
|                                    | 64pin      | R5F52315AxND, R5F52316AxND, R5F52317AxND, R5F52318AxND,<br>R5F52315CxND, R5F52316CxND, R5F52317BxND, R5F52318BxND,<br>R5F52315AxFM, R5F52316AxFM, R5F52317AxFM, R5F52318AxFM,<br>R5F52315CxFM, R5F52316CxFM, R5F52317BxFM, R5F52318BxFM,<br>R5F52315CxLF, R5F52316CxLF                                                                                        |
|                                    | 100pin     | R5F52315AxLA, R5F52316AxLA, R5F52317AxLA, R5F52318AxLA,<br>R5F52315CxLA, R5F52316CxLA, R5F52317BxLA, R5F52318BxLA,<br>R5F52315AxFP, R5F52316AxFP, R5F52317AxFP, R5F52318AxFP,<br>R5F52315CxFP, R5F52316CxFP, R5F52317BxFP, R5F52318BxFP                                                                                                                       |
| RX23E-A Group<br>(R01UH0801EJ0100) | 40pin      | R5F523E5AxNF, R5F523E6AxNF, R5F523E5SxNF, R5F523E6SxNF                                                                                                                                                                                                                                                                                                        |
|                                    | 48pin      | R5F523E5AxFL, R5F523E6AxFL, R5F523E5SxFL, R5F523E6SxFL                                                                                                                                                                                                                                                                                                        |
| RX23T Group<br>(R01UH0520EJ0110)   | 48pin      | R5F523T3AxFL, R5F523T5AxFL                                                                                                                                                                                                                                                                                                                                    |
|                                    | 52pin      | R5F523T5AxFD, R5F523T3AxFD                                                                                                                                                                                                                                                                                                                                    |
|                                    | 64pin      | R5F523T5AxFM, R5F523T3AxFM                                                                                                                                                                                                                                                                                                                                    |
| RX23W Group<br>(R01UH0823EJ0100)   | 56pin      | R5F523W8BxNG, R5F523W8AxNG, R5F523W7BxNG, R5F523W7AxNG                                                                                                                                                                                                                                                                                                        |
|                                    | 83pin      | R5F523W8CxLN, R5F523W8DxLN                                                                                                                                                                                                                                                                                                                                    |
|                                    | 85pin      | R5F523W7AxBL, R5F523W8AxBL, R5F523W8BxBL, R5F523W7BxBL                                                                                                                                                                                                                                                                                                        |
| RX24T Group<br>(R01UH0576EJ0200)   | 64pin      | R5F524TAxFM, R5F524T8AxFM, R5F524TAxFK, R5F524T8AxFK                                                                                                                                                                                                                                                                                                          |
|                                    | 80pin      | R5F524TAxFF, R5F524T8AxFF, R5F524TAxFN, R5F524T8AxFN                                                                                                                                                                                                                                                                                                          |
|                                    | 100pin     | R5F524TCxFP, R5F524T8AxFP, R5F524TBxFP, R5F524TEAxFP,<br>R5F524TAxFP                                                                                                                                                                                                                                                                                          |
| RX24U Group<br>(R01UH0658EJ0100)   | 100pin     | R5F524UEAxFP, R5F524UCAxFP, R5F524UBAxFP                                                                                                                                                                                                                                                                                                                      |
|                                    | 144pin     | R5F524UEAxFB, R5F524UBAxFB, R5F524UCAxFB                                                                                                                                                                                                                                                                                                                      |
| RX64M Group<br>(R01UH0377EJ0110)   | 100pin     | R5F564MFCxFP, R5F564MFCxLJ, R5F564MFDxFP, R5F564MFDxLJ,<br>R5F564MGCxFP, R5F564MGCxLJ, R5F564MGDxFP, R5F564MGDxLJ,<br>R5F564MJCxFP, R5F564MJCxLJ, R5F564MJDxFP, R5F564MJDxLJ,<br>R5F564MLCxFP, R5F564MLCxLJ, R5F564MLDxFP, R5F564MLDxLJ                                                                                                                       |
|                                    | 144/145pin | R5F564MFCxFB, R5F564MFCxLK, R5F564MFDxFB, R5F564MFDxLK,<br>R5F564MGCxFB, R5F564MGCxLK, R5F564MGDxFB, R5F564MGDxLK,<br>R5F564MJCxFB, R5F564MJCxLK, R5F564MJDxFB, R5F564MJDxLK,<br>R5F564MLCxFB, R5F564MLCxLK, R5F564MLDxFB, R5F564MLDxLK                                                                                                                       |
|                                    | 176/177pin | R5F564MFDxFC, R5F564MFDxBG, R5F564MFDxLC, R5F564MFCxFC,<br>R5F564MFCxBG, R5F564MFCxLC, R5F564MGDxFC, R5F564MGDxBG,<br>R5F564MGDxLC, R5F564MGCxFC, R5F564MGCxBG, R5F564MGCxLC,<br>R5F564MJDxFC, R5F564MJDxBG, R5F564MJDxLC, R5F564MJCxFC,<br>R5F564MJCxBG, R5F564MJCxLC, R5F564MLDxFC, R5F564MLDxBG,<br>R5F564MLDxLC, R5F564MLCxFC, R5F564MLCxBG, R5F564MLCxFC |

Table 2-3 Support Devices

| Group<br>(HW Manual number)      | PIN            | Device name                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RX65N Group<br>(R01UH0590EJ0210) | 100pin         | R5F565N9AxLJ, R5F565N9BxLJ, R5F565N9ExLJ, R5F565N9FxLJ,<br>R5F565N7AxLJ, R5F565N7BxLJ, R5F565N7ExLJ, R5F565N7FxLJ,<br>R5F565N4AxLJ, R5F565N4BxLJ, R5F565N4ExLJ, R5F565N4FxLJ,<br>R5F565N9AxFP, R5F565N9BxFP, R5F565N9ExFP, R5F565N9FxFP,<br>R5F565N7AxFP, R5F565N7BxFP, R5F565N7ExFP, R5F565N7FxFP,<br>R5F565N4AxFP, R5F565N4BxFP, R5F565N4ExFP, R5F565N4FxFP,<br>R5F565NCHxLJ, R5F565NCDxLJ, R5F565NEHxLJ, R5F565NEDxLJ,<br>R5F565NCHxFP, R5F565NCDxFP, R5F565NEHxFP, R5F565NEDxFP |
|                                  | 144/145<br>pin | R5F565N9AxFB, R5F565N9BxFB, R5F565N9ExFB, R5F565N9FxFB,<br>R5F565N7AxFB, R5F565N7BxFB, R5F565N7ExFB, R5F565N7FxFB,<br>R5F565N4AxFB, R5F565N4BxFB, R5F565N4ExFB, R5F565N4FxFB,<br>R5F565NCHxFB, R5F565NCDxFB, R5F565NEHxFB, R5F565NEDxFB,<br>R5F565N9AxLK, R5F565N9BxLK, R5F565N9ExLK, R5F565N9FxLK,<br>R5F565N7AxLK, R5F565N7BxLK, R5F565N7ExLK, R5F565N7FxLK,<br>R5F565N4AxLK, R5F565N4BxLK, R5F565N4ExLK, R5F565N4FxLK,<br>R5F565NCHxLK, R5F565NCDxLK, R5F565NEHxLK, R5F565NEDxLK |
|                                  | 176/177<br>pin | R5F565NCHxBG, R5F565NCDxBG, R5F565NEHxBG, R5F565NEDxBG,<br>R5F565NCHxFC, R5F565NCDxFC, R5F565NEHxFC, R5F565NEDxFC,<br>R5F565NCHxLC, R5F565NCDxLC, R5F565NEHxLC, R5F565NEDxLC                                                                                                                                                                                                                                                                                                        |
| RX651 Group<br>(R01UH0590EJ0210) | 64pin          | R5F5651CHxFM, R5F56514FxFM, R5F5651EHxFM, R5F5651CDxFM,<br>R5F56514FxBP, R5F56514BxFM, R5F56519FxBP, R5F5651CDxBP,<br>R5F5651EDxBP, R5F5651EDxFM, R5F56517BxBP, R5F5651EHxBP,<br>R5F56519BxBP, R5F56517FxBP, R5F5651CHxBP, R5F56519FxFM,<br>R5F56517BxFM, R5F56514BxBP, R5F56519BxFM, R5F56517FxFM                                                                                                                                                                                  |
|                                  | 100pin         | R5F56519AxLJ, R5F56519BxLJ, R5F56519ExLJ, R5F56519FxLJ,<br>R5F56517AxLJ, R5F56517BxLJ, R5F56517ExLJ, R5F56517FxLJ,<br>R5F56514AxLJ, R5F56514BxLJ, R5F56514ExLJ, R5F56514FxLJ,<br>R5F56519AxFP, R5F56519BxFP, R5F56519ExFP, R5F56519FxFP,<br>R5F56517AxFP, R5F56517BxFP, R5F56517ExFP, R5F56517FxFP,<br>R5F56514AxFP, R5F56514BxFP, R5F56514ExFP, R5F56514FxFP                                                                                                                       |
|                                  | 144/145<br>pin | R5F56519AxFB, R5F56519BxFB, R5F56519ExFB, R5F56519FxFB,<br>R5F56517AxFB, R5F56517BxFB, R5F56517ExFB, R5F56517FxFB,<br>R5F56514AxFB, R5F56514BxFB, R5F56514ExFB, R5F56514FxFB,<br>R5F5651CDxFB, R5F5651CHxFB, R5F5651EDxFB, R5F5651EHxFB,<br>R5F56519AxLK, R5F56519BxLK, R5F56519ExLK, R5F56519FxLK,<br>R5F56517AxLK, R5F56517BxLK, R5F56517ExLK, R5F56517FxLK,<br>R5F56514AxLK, R5F56514BxLK, R5F56514ExLK, R5F56514FxLK,<br>R5F5651CDxLK, R5F5651CHxLK, R5F5651EDxLK, R5F5651EHxLK |
|                                  | 176/177<br>pin | R5F5651CDxBG, R5F5651CDxFC, R5F5651CHxBG, R5F5651CHxFC,<br>R5F5651EDxBG, R5F5651EDxFC, R5F5651EHxBG, R5F5651EHxFC,<br>R5F5651CDxLC, R5F5651CHxLC, R5F5651EDxLC, R5F5651EHxLC                                                                                                                                                                                                                                                                                                        |
| RX66N Group<br>(R01UH0825EJ0100) | 100pin         | R5F566NNDxFP, R5F566NNHxFP, R5F566NDDxFP, R5F566NDHxFP                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                  | 144pin         | R5F566NNDxFB, R5F566NNHxFB, R5F566NDDxFB, R5F566NDHxFB                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                  | 145pin         | R5F566NNDxLK, R5F566NNHxLK, R5F566NDDxLK, R5F566NDHxLK                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                  | 176pin         | R5F566NNDxFC, R5F566NNHxFC, R5F566NDDxFC, R5F566NDHxFC,<br>R5F566NNDxBG, R5F566NNHxBG, R5F566NDDxBG, R5F566NDHxBG                                                                                                                                                                                                                                                                                                                                                                   |
|                                  | 244pin         | R5F566NNDxBD, R5F566NNHxBD, R5F566NDDxBD, R5F566NDHxBD                                                                                                                                                                                                                                                                                                                                                                                                                              |

Table 2-4 Support Devices

| Group<br>(HW Manual number)      | PIN        | Device name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RX66T Group<br>(R01UH0749EJ0120) | 48pin      | R5F566TABxFL, R5F566TAFxFL, R5F566TEBxFL, R5F566TEFxFL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                  | 64pin      | R5F566TAAxFM, R5F566TAExFM, R5F566TEAxFM, R5F566TEExFM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                  | 80pin      | R5F566TAAxFF, R5F566TAExFF, R5F566TEAxFF, R5F566TEExFF,<br>R5F566TAAxFN, R5F566TAExFN, R5F566TEAxFN, R5F566TEExFN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                  | 100pin     | R5F566TKCxFP, R5F566TAExFP, R5F566TFFxFP, R5F566TFCxFP,<br>R5F566TFExFP, R5F566TFBxFP, R5F566TFAxFP, R5F566TABxFP,<br>R5F566TAFxFP, R5F566TEFxFP, R5F566TKFxFP, R5F566TKGxFP,<br>R5F566TKAxFP, R5F566TKExFP, R5F566TKBxFP, R5F566TEBxFP,<br>R5F566TEExFP, R5F566TEAxFP, R5F566TAAxFP, R5F566TFGxFP                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                  | 112pin     | R5F566TAAxFH, R5F566TAExFH, R5F566TEExFH, R5F566TEAxFH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                  | 144pin     | R5F566TKCxFB, R5F566TFGxFB, R5F566TFCxFB, R5F566TKGxFB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| RX71M Group<br>(R01UH0493EJ0110) | 100pin     | R5F571MLCxFP, R5F571MLDxFP, R5F571MLGxFP, R5F571MLHxFP,<br>R5F571MJCxFP, R5F571MJDxFP, R5F571MJGxFP, R5F571MJHxFP,<br>R5F571MGCxFP, R5F571MGDxFP, R5F571MGGxFP, R5F571MGHxFP,<br>R5F571MFCxFP, R5F571MFDxFP, R5F571MFGxFP, R5F571MFHxFP,<br>R5F571MLCxLJ, R5F571MLDxLJ, R5F571MLGxLJ, R5F571MLHxLJ,<br>R5F571MJCxLJ, R5F571MJDxLJ, R5F571MJGxLJ, R5F571MJHxLJ,<br>R5F571MGCxLJ, R5F571MGDxLJ, R5F571MGGxLJ, R5F571MGHxLJ,<br>R5F571MFCxLJ, R5F571MFDxLJ, R5F571MFGxLJ, R5F571MFHxLJ                                                                                                                                                                                                                                             |
|                                  | 144/145pin | R5F571MLCxLK, R5F571MLDxLK, R5F571MLGxLK, R5F571MLHxLK,<br>R5F571MJCxLK, R5F571MJDxLK, R5F571MJGxLK, R5F571MJHxLK,<br>R5F571MGCxLK, R5F571MGDxLK, R5F571MGGxLK, R5F571MGHxLK,<br>R5F571MFCxLK, R5F571MFDxLK, R5F571MFGxLK, R5F571MFHxLK,<br>R5F571MLCxFB, R5F571MLDxFB, R5F571MLGxFB, R5F571MLHxFB,<br>R5F571MJCxFB, R5F571MJDxFB, R5F571MJGxFB, R5F571MJHxFB,<br>R5F571MGCxFB, R5F571MGDxFB, R5F571MGGxFB, R5F571MGHxFB,<br>R5F571MFCxFB, R5F571MFDxFB, R5F571MFGxFB, R5F571MFHxFB                                                                                                                                                                                                                                             |
|                                  | 176/177pin | R5F571MLCxFC, R5F571MLDxFC, R5F571MLGxFC, R5F571MLHxFC,<br>R5F571MJCxFC, R5F571MJDxFC, R5F571MJGxFC, R5F571MJHxFC,<br>R5F571MGCxFC, R5F571MGDxFC, R5F571MGGxFC, R5F571MGHxFC,<br>R5F571MFCxFC, R5F571MFDxFC, R5F571MFGxFC, R5F571MFHxFC,<br>R5F571MLCxLC, R5F571MLDxLC, R5F571MLGxLC, R5F571MLHxLC,<br>R5F571MJCxLC, R5F571MJDxLC, R5F571MJGxLC, R5F571MJHxLC,<br>R5F571MGCxLC, R5F571MGDxLC, R5F571MGGxLC, R5F571MGHxLC,<br>R5F571MFCxLC, R5F571MFDxLC, R5F571MFGxLC, R5F571MFHxLC,<br>R5F571MLCxBG, R5F571MLDxBG, R5F571MLGxBG, R5F571MLHxBG,<br>R5F571MJCxBG, R5F571MJDxBG, R5F571MJGxBG, R5F571MJHxBG,<br>R5F571MGCxBG, R5F571MGDxBG, R5F571MGGxBG, R5F571MGHxBG,<br>R5F571MFCxBG, R5F571MFDxBG, R5F571MFGxBG, R5F571MFHxBG |
| RX72M Group<br>(R01UH0804EJ0110) | 100pin     | R5F572MDDxFP, R5F572MDHxFP, R5F572MNDxFP, R5F572MNHxFP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                  | 144pin     | R5F572MDDxFB, R5F572MDHxFB, R5F572MNDxFB, R5F572MNHxFB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                  | 176pin     | R5F572MNHxFC, R5F572MDDxBG, R5F572MNDxFC, R5F572MDHxBG,<br>R5F572MDDxFC, R5F572MNHxBG, R5F572MNDxBG, R5F572MDHxFC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                  | 224pin     | R5F572MDDxBD, R5F572MDHxBD, R5F572MNHxBD, R5F572MNDxBD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

Table 2-5 Support Devices

| Group<br>(HW Manual number)      | PIN    | Device name                                                                                                                                                                                                                          |
|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RX72N Group<br>(R01UH0824EJ0100) | 100pin | R5F572NNDxFP, R5F572NNHxFP, R5F572NDDxFP, R5F572NDHxFP                                                                                                                                                                               |
|                                  | 144pin | R5F572NNDxFB, R5F572NNHxFB, R5F572NDDxFB, R5F572NDHxFB                                                                                                                                                                               |
|                                  | 145pin | R5F572NNDxLK, R5F572NNHxLK, R5F572NDDxLK, R5F572NDHxLK                                                                                                                                                                               |
|                                  | 176pin | R5F572NNDxFC, R5F572NNHxFC, R5F572NDDxFC, R5F572NDHxFC,<br>R5F572NNDxBG, R5F572NNHxBG, R5F572NDDxBG, R5F572NDHxBG                                                                                                                    |
|                                  | 224pin | R5F572NNDxBD, R5F572NNHxBD, R5F572NDDxBD, R5F572NDHxBD                                                                                                                                                                               |
| RX72T Group<br>(R01UH0803EJ0100) | 100pin | R5F572TKExFP, R5F572TFFxFP, R5F572TKFxFP, R5F572TFGxFP,<br>R5F572TKCxFP, R5F572TFBxFP, R5F572TFExFP, R5F572TFCxFP,<br>R5F572TFAxFP, R5F572TKAxFP, R5F572TKBxFP, R5F572TKGxFP                                                         |
|                                  | 144pin | R5F572TKGxFB, R5F572TKCxFB, R5F572TFGxFB, R5F572TFCxFB                                                                                                                                                                               |
| RX671 Group<br>(R01UH0899EJ0100) | 48pin  | R5F5671EHxNE, R5F5671EDxNE, R5F5671CHxNE, R5F5671CDxNE,<br>R5F56719HxNE, R5F56719DxNE                                                                                                                                                |
|                                  | 64pin  | R5F5671EHxFM, R5F5671EDxFM, R5F5671CHxFM, R5F5671CDxFM,<br>R5F56719HxFM, R5F56719DxFM, R5F5671EHxBP, R5F5671EDxBP,<br>R5F5671CHxBP, R5F5671CDxBP, R5F56719HxBP, R5F56719DxBP                                                         |
|                                  | 100pin | R5F5671EHxFP, R5F5671EDxFP, R5F5671CHxFP, R5F5671CDxFP,<br>R5F56719HxFP, R5F56719DxFP, R5F5671EHxLJ, R5F5671EDxLJ,<br>R5F5671CHxLJ, R5F5671CDxLJ, R5F56719HxLJ, R5F56719DxLJ                                                         |
|                                  | 144pin | R5F5671EHxFB, R5F5671EDxFB, R5F5671CHxFB, R5F5671CDxFB,<br>R5F56719HxFB, R5F56719DxFB                                                                                                                                                |
|                                  | 145pin | R5F5671EHxLE, R5F5671EDxLE, R5F5671CHxLE, R5F5671CDxLE,<br>R5F56719HxLE, R5F56719DxLE, R5F5671EHxLK, R5F5671EDxLK,<br>R5F5671CHxLK, R5F5671CDxLK, R5F56719HxLK, R5F56719DxLK                                                         |
| RX140 Group<br>(R01UH0905EJ0110) | 32pin  | R5F51403AxFJ, R5F51403AxNH                                                                                                                                                                                                           |
|                                  | 48pin  | R5F51403AxFL, R5F51403AxNE, R5F51405AxFL, R5F51405AxNE,<br>R5F51405BxFL, R5F51405BxNE, R5F51406AxFL, R5F51406AxNE,<br>R5F51406BxFL, R5F51406BxNE                                                                                     |
|                                  | 64pin  | R5F51403AxFK, R5F51403AxFM, R5F51405AxFK, R5F51405AxFM,<br>R5F51405BxFK, R5F51405BxFM, R5F51406AxFK, R5F51406AxFM,<br>R5F51406BxFK, R5F51406BxFM                                                                                     |
|                                  | 80pin  | R5F51405AxFN, R5F51405BxFN, R5F51406AxFN, R5F51406BxFN                                                                                                                                                                               |
| RX660 Group<br>(R01UH0937EJ0100) | 48pin  | R5F56609AxFL, R5F56609BxFL, R5F56604AxFL, R5F56604BxFL                                                                                                                                                                               |
|                                  | 64pin  | R5F56609AxFM, R5F56609BxFM, R5F56609CxFM, R5F56609DxFM<br>R5F56604AxFM, R5F56604BxFM, R5F56604CxFM, R5F56604DxFM                                                                                                                     |
|                                  | 80pin  | R5F56609AxFN, R5F56609BxFN, R5F56609CxFN, R5F56609DxFN<br>R5F56604AxFN, R5F56604BxFN, R5F56604CxFN, R5F56604DxFN                                                                                                                     |
|                                  | 100pin | R5F56609AxFP, R5F56609BxFP, R5F56609CxFP, R5F56609DxFP<br>R5F56609ExFP, R5F56609FxFP, R5F56609GxFP, R5F56609HxFP<br>R5F56604AxFP, R5F56604BxFP, R5F56604CxFP, R5F56604DxFP<br>R5F56604ExFP, R5F56604FxFP, R5F56604GxFP, R5F56604HxFP |
|                                  | 144pin | R5F56609AxFB, R5F56609BxFB, R5F56609CxFB, R5F56609DxFB<br>R5F56609ExFB, R5F56609FxFB, R5F56609GxFB, R5F56609HxFB<br>R5F56604AxFB, R5F56604BxFB, R5F56604CxFB, R5F56604DxFB<br>R5F56604ExFB, R5F56604FxFB, R5F56604GxFB, R5F56604HxFB |



## 2.2 Support Components List

Below is a list of Components supported by the Smart Configurator for RX V2.15.0.

**Table 2-6 Support Components (RX100, RX200 family)**

✓ : Support, - : Non-support

| No | Components                                   | Mode                                   | RX100 | RX111 | RX113 | RX130 | RX13T | RX140 | RX230, RX231 | RX23E-A | RX23T | RX23W | RX24T, RX24U | Remarks   |
|----|----------------------------------------------|----------------------------------------|-------|-------|-------|-------|-------|-------|--------------|---------|-------|-------|--------------|-----------|
| 1  | 8-Bit Timer                                  | -                                      | -     | -     | ✓     | ✓     | -     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
| 2  | CRC Calculator                               | -                                      | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
| 3  | D-A Converter                                | -                                      | -     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | -       | ✓     | ✓     | ✓            |           |
| 4  | DMA Controller                               | -                                      | -     | -     | -     | -     | -     | -     | ✓            | ✓       | -     | ✓     | -            |           |
| 5  | I2C Slave Mode                               | I2C mode                               | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
|    |                                              | SMBus mode                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
| 6  | I2C Master Mode                              | I2C mode                               | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
|    |                                              | SMBus mode                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
| 7  | LCD Controller                               |                                        | -     | -     | ✓     | -     | -     | -     | -            | -       | -     | -     | -            |           |
| 8  | PWM Mode Timer                               | PWM mode 1                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
|    |                                              | PWM mode 2                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
| 9  | SCI/SCIF Clock Synchronous Mode              | Transmission                           | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            | Note 1, 2 |
|    |                                              | Reception                              | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            | Note 1, 2 |
|    |                                              | Transmission/Reception                 | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            | Note 1, 2 |
| 10 | SCI/SCIF Asynchronous Mode                   | Transmission                           | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            | Note 1    |
|    |                                              | Reception                              | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            | Note 1    |
|    |                                              | Transmission/Reception                 | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            | Note 1    |
|    |                                              | Multi-processor Transmission           | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            | Note 1    |
|    |                                              | Multi-processor Reception              | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            | Note 1    |
|    |                                              | Multi-processor Transmission/Reception | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            | Note 1    |
| 11 | SPI Clock Synchronous Mode                   | Slave transmit/receive                 | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
|    |                                              | Slave transmit only                    | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
|    |                                              | Master transmit/receive                | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
|    |                                              | Master transmit only                   | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
| 12 | SPI Operation Mode                           | Slave transmit/receive                 | ✓     | ✓     | ✓     | ✓     | -     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
|    |                                              | Slave transmit only                    | ✓     | ✓     | ✓     | ✓     | -     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
|    |                                              | Master transmit/receive                | ✓     | ✓     | ✓     | ✓     | -     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
|    |                                              | Master transmit only                   | ✓     | ✓     | ✓     | ✓     | -     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
|    |                                              | Multi-master transmit/receive          | ✓     | ✓     | ✓     | ✓     | -     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
|    |                                              | Multi-master transmit only             | ✓     | ✓     | ✓     | ✓     | -     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
| 13 | Event Link Controller                        | -                                      | -     | ✓     | ✓     | ✓     | -     | ✓     | ✓            | ✓       | -     | ✓     | -            |           |
| 14 | Watchdog Timer                               | -                                      | ✓     | ✓     | ✓     | ✓     | -     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |
| 15 | Clock Frequency Accuracy Measurement Circuit | -                                      | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |           |

Note 1. Refer to No 2 in Table 6-2

Note 2. Refer to No 3 in Table 6-2

Table 2-7 Support Components (RX100, RX200 family)

✓ : Support, - : Non-support

| No | Components                     | Mode                                          | RX110 | RX111 | RX113 | RX130 | RX13T | RX140 | RX230, RX231 | RX23E-A | RX23T | RX23W | RX24T, RX24U | Remarks |
|----|--------------------------------|-----------------------------------------------|-------|-------|-------|-------|-------|-------|--------------|---------|-------|-------|--------------|---------|
| 16 | Group Scan Mode S12AD          | -                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 17 | Comparator                     | -                                             | -     | -     | ✓     | ✓     | ✓     | ✓     | ✓            | -       | -     | ✓     | -            |         |
| 18 | Compare Match Timer            | -                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 19 | Single Scan Mode S12AD         | -                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 20 | Smart Card Interface Mode      | Transmission                                  | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
|    |                                | Reception                                     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
|    |                                | Transmission/Reception                        | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 21 | Dead-time Compensation Counter | -                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | -     | ✓            |         |
| 22 | Data Transfer Controller       | -                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            | Note 3  |
| 23 | Data Operation Circuit         | -                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 24 | Normal Mode Timer              | -                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 25 | Buses                          | -                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 26 | Programmable Pulse Generator   | -                                             | -     | -     | -     | -     | -     | -     | -            | -       | -     | -     | -            |         |
| 27 | Ports                          | -                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 28 | Port Output Enable             | -                                             | -     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 29 | Real Time Clock                | Binary                                        | ✓     | ✓     | ✓     | ✓     | -     | ✓     | ✓            | -       | -     | ✓     | -            |         |
|    |                                | Calendar                                      | ✓     | ✓     | ✓     | ✓     | -     | ✓     | ✓            | -       | -     | ✓     | -            |         |
| 30 | Remote Control Signal Receiver | -                                             | -     | -     | -     | ✓     | -     | -     | -            | -       | -     | -     | -            |         |
| 31 | Low-Power Timer                | -                                             | -     | -     | ✓     | ✓     | -     | ✓     | ✓            | ✓       | -     | ✓     | -            |         |
| 32 | Phase Counting Mode Timer      | 16-Bit Phase Counting Mode                    | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
|    |                                | Cascade Connection 32-Bit Phase Counting Mode | -     | -     | -     | -     | ✓     | -     | -            | -       | ✓     | -     | ✓            |         |
|    |                                |                                               |       |       |       |       |       |       |              |         |       |       |              |         |
| 33 | Interrupt Controller           | -                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 34 | General PWM Timer              | Saw-wave PWM mode                             | -     | -     | -     | -     | -     | -     | -            | -       | ✓     | -     | ✓            | Note 4  |
|    |                                | Saw-wave one-shot pulse mode                  | -     | -     | -     | -     | -     | -     | -            | -       | ✓     | -     | ✓            | Note 4  |
|    |                                | Triangle-wave PWM mode 1                      | -     | -     | -     | -     | -     | -     | -            | -       | ✓     | -     | ✓            | Note 4  |
|    |                                | Triangle-wave PWM mode 2                      | -     | -     | -     | -     | -     | -     | -            | -       | ✓     | -     | ✓            | Note 4  |
|    |                                | Triangle-wave PWM mode 3                      | -     | -     | -     | -     | -     | -     | -            | -       | ✓     | -     | ✓            | Note 4  |
| 35 | Low Power Consumption          | -                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 36 | Complementary PWM Mode Timer   | Complementary PWM mode 1                      | -     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
|    |                                | Complementary PWM mode 2                      | -     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
|    |                                | Complementary PWM mode 3                      | -     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 37 | Continuous Scan Mode S12AD     | -                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |

Note 3. Refer to No 6 in Table 6-1

Note 4. Refer to No 1 in Table 6-1

Table 2-8 Support Components (RX100, RX200 family)

✓ : Support, -: Non-support

| No | Components                      | Mode                                | RX110 | RX111 | RX113 | RX130 | RX13T | RX140 | RX230, RX231 | RX23E-A | RX23T | RX23W | RX24T, RX24U | Remarks |
|----|---------------------------------|-------------------------------------|-------|-------|-------|-------|-------|-------|--------------|---------|-------|-------|--------------|---------|
| 38 | Voltage Detection Circuit       | -                                   | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 39 | Delta-Sigma Modulator Interface | Master                              | -     | -     | -     | -     | -     | -     | -            | -       | -     | -     | -            |         |
|    |                                 | Slave                               | -     | -     | -     | -     | -     | -     | -            | -       | -     | -     | -            |         |
| 40 | Single Scan Mode DSAD           | -                                   | -     | -     | -     | -     | -     | ✓     | -            | ✓       | -     | -     | -            |         |
| 41 | Continuous Scan Mode DSAD       | -                                   | -     | -     | -     | -     | -     | ✓     | -            | ✓       | -     | -     | -            |         |
| 42 | Analog Front End                | -                                   | -     | -     | -     | -     | -     | ✓     | -            | ✓       | -     | -     | -            |         |
| 43 | Motor                           | 3-Phase Brushless DC Motor          | -     | -     | -     | -     | ✓     | -     | -            | -       | ✓     | -     | ✓            |         |
|    |                                 | 2-Phase Stepping Motor (Fast Decay) | -     | -     | -     | -     | ✓     | -     | -            | -       | ✓     | -     | ✓            |         |
|    |                                 | 2-Phase Stepping Motor (Slow Decay) | -     | -     | -     | -     | ✓     | -     | -            | -       | ✓     | -     | ✓            |         |

Table 2-9 Support Components (RX600, RX700 family)

✓: Support, -: Non-support

| No | Components                                   | Mode                                   | RX64M | RX65N, RX651 | RX66N | RX66T | RX660 | RX671 | RX71M | RX72M | RX72N | RX72T | Remarks   |
|----|----------------------------------------------|----------------------------------------|-------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|
| 1  | 8-Bit Timer                                  | -                                      | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
| 2  | CRC Calculator                               | -                                      | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
| 3  | D/A Converter                                | -                                      | ✓     | ✓            | ✓     | ✓     | ✓     | -     | ✓     | ✓     | ✓     | ✓     |           |
| 4  | DMA Controller                               | -                                      | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
| 5  | I2C Slave Mode                               | I2C mode                               | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
|    |                                              | SMBus mode                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
| 6  | I2C Master Mode                              | I2C mode                               | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
|    |                                              | SMBus mode                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
| 7  | LCD Controller                               | -                                      | -     | -            | -     | -     | -     | -     | -     | -     | -     | -     |           |
| 8  | PWM Mode Timer                               | PWM mode 1                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
|    |                                              | PWM mode 2                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
| 9  | SCI/SCIF Clock Synchronous Mode              | Transmission                           | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | Note 1, 2 |
|    |                                              | Reception                              | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | Note 1, 2 |
|    |                                              | Transmission/Reception                 | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | Note 1, 2 |
| 10 | SCI/SCIF Asynchronous Mode                   | Transmission                           | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | Note 1    |
|    |                                              | Reception                              | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | Note 1    |
|    |                                              | Transmission/Reception                 | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | Note 1    |
|    |                                              | Multi-processor Transmission           | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | Note 1    |
|    |                                              | Multi-processor Reception              | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | Note 1    |
|    |                                              | Multi-processor Transmission/Reception | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | Note 1    |
| 11 | SPI Clock Synchronous Mode                   | Slave transmit/receive                 | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
|    |                                              | Slave transmit only                    | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
|    |                                              | Master transmit/receive                | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
|    |                                              | Master transmit only                   | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
| 12 | SPI Operation Mode                           | Slave transmit/receive                 | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
|    |                                              | Slave transmit only                    | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
|    |                                              | Slave receive only                     | -     | -            | -     | -     | ✓     | ✓     | -     | -     | -     | -     |           |
|    |                                              | Master transmit/receive                | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
|    |                                              | Master transmit only                   | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
|    |                                              | Multi-master transmit/receive          | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
|    |                                              | Multi-master transmit only             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
|    |                                              |                                        |       |              |       |       |       |       |       |       |       |       |           |
| 13 | Event Link Controller                        | -                                      | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
| 14 | Watchdog Timer                               | -                                      | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |
| 15 | Clock Frequency Accuracy Measurement Circuit | -                                      | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |           |

Note 1. Refer to No 2 in Table 6-2

Note 2. Refer to No 3 in Table 6-2

Table 2-10 Support Components (RX600, RX700 family)

✓ : Support, - : Non-support

| No | Components                     | Mode                                          | RX64M | RX65N, RX651 | RX66N | RX66T | RX660 | RX671 | RX71M | RX72M | RX72N | RX72T | Remarks |
|----|--------------------------------|-----------------------------------------------|-------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 16 | Group Scan Mode S12AD          | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 17 | Comparator                     | -                                             | -     | -            | -     | ✓     | ✓     | -     | -     | ✓     | -     | ✓     |         |
| 18 | Compare Match Timer            | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 19 | Single Scan Mode S12AD         | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 20 | Smart Card Interface Mode      | Transmission                                  | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
|    |                                | Reception                                     | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
|    |                                | Transmission/Reception                        | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 21 | Dead-time Compensation Counter | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 22 | Data Transfer Controller       | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | Note 3  |
| 23 | Data Operation Circuit         | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 24 | Normal Mode Timer              | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 25 | Buses                          | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 26 | Programmable Pulse Generator   | -                                             | ✓     | ✓            | ✓     | -     | -     | ✓     | ✓     | -     | ✓     | -     |         |
| 27 | Ports                          | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 28 | Port Output Enable             | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 29 | Real Time Clock                | Binary                                        | ✓     | ✓            | ✓     | -     | ✓     | ✓     | ✓     | -     | ✓     | -     |         |
|    |                                | Calendar                                      | ✓     | ✓            | ✓     | -     | ✓     | ✓     | ✓     | -     | ✓     | -     |         |
| 30 | Remote Control Signal Receiver | -                                             | -     | -            | -     | -     | ✓     | ✓     | -     | -     | -     | -     |         |
| 31 | Low-Power Timer                | -                                             | -     | -            | -     | -     | -     | -     | -     | -     | -     | -     |         |
| 32 | Phase Counting Mode Timer      | 16-Bit Phase Counting Mode                    | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
|    |                                | Cascade Connection 32-Bit Phase Counting Mode | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 33 | Interrupt Controller           | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 34 | General PWM Timer              | Saw-wave PWM mode                             | ✓     | -            | ✓     | ✓     | -     | -     | ✓     | ✓     | ✓     | ✓     | Note 4  |
|    |                                | Saw-wave one-shot pulse mode                  | ✓     | -            | ✓     | ✓     | -     | -     | ✓     | ✓     | ✓     | ✓     | Note 4  |
|    |                                | Triangle-wave PWM mode 1                      | ✓     | -            | ✓     | ✓     | -     | -     | ✓     | ✓     | ✓     | ✓     | Note 4  |
|    |                                | Triangle-wave PWM mode 2                      | ✓     | -            | ✓     | ✓     | -     | -     | ✓     | ✓     | ✓     | ✓     | Note 4  |
|    |                                | Triangle-wave PWM mode 3                      | ✓     | -            | ✓     | ✓     | -     | -     | ✓     | ✓     | ✓     | ✓     | Note 4  |
| 35 | Low Power Consumption          | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 36 | Complementary PWM Mode Timer   | Complementary PWM mode 1                      | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
|    |                                | Complementary PWM mode 2                      | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
|    |                                | Complementary PWM mode 3                      | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 37 | Continuous Scan Mode S12AD     | -                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |

Note 3. Refer to No 6 in Table 6-1

Note 4. Refer to No 1 in Table 6-1

Table 2-11 Support Components (RX600, RX700 family)

✓ : Support, -: Non-support

| No | Components                      | Mode                                | RX64M | RX65N, RX651 | RX66N | RX66T | RX660 | RX671 | RX71M | RX72M | RX72N | RX72T | Remarks |
|----|---------------------------------|-------------------------------------|-------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 38 | Voltage Detection Circuit       | -                                   | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 39 | Delta-Sigma Modulator Interface | Master                              | -     | -            | -     | -     | -     | -     | -     | ✓     | -     | -     |         |
|    |                                 | Slave                               | -     | -            | -     | -     | -     | -     | -     | ✓     | -     | -     |         |
| 40 | Single Scan Mode DSAD           | -                                   | -     | -            | -     | -     | -     | -     | -     | -     | -     | -     |         |
| 41 | Continuous Scan Mode DSAD       | -                                   | -     | -            | -     | -     | -     | -     | -     | -     | -     | -     |         |
| 42 | Analog Front End                | -                                   | -     | -            | -     | -     | -     | -     | -     | -     | -     | -     |         |
| 43 | Motor                           | 3-Phase Brushless DC Motor          | -     | -            | -     | ✓     | -     | -     | -     | ✓     | -     | ✓     |         |
|    |                                 | 2-Phase Stepping Motor (Fast Decay) | -     | -            | -     | ✓     | -     | -     | -     | ✓     | -     | ✓     |         |
|    |                                 | 2-Phase Stepping Motor (Slow Decay) | -     | -            | -     | ✓     | -     | -     | -     | ✓     | -     | ✓     |         |

## 2.3 New support

### 2.3.1 Raw value codes generation for Code Generator components

From Smart Configurator for RX V2.15.0, raw hex value codes can be generated out when configuring the new “API code style” setting to “Value without macro description (raw HEX)” in the Code generation settings group on the “Preferences” page as below, by default the “Value with macro description” is selected which will generate macro description value codes as previous Smart Configurator versions.

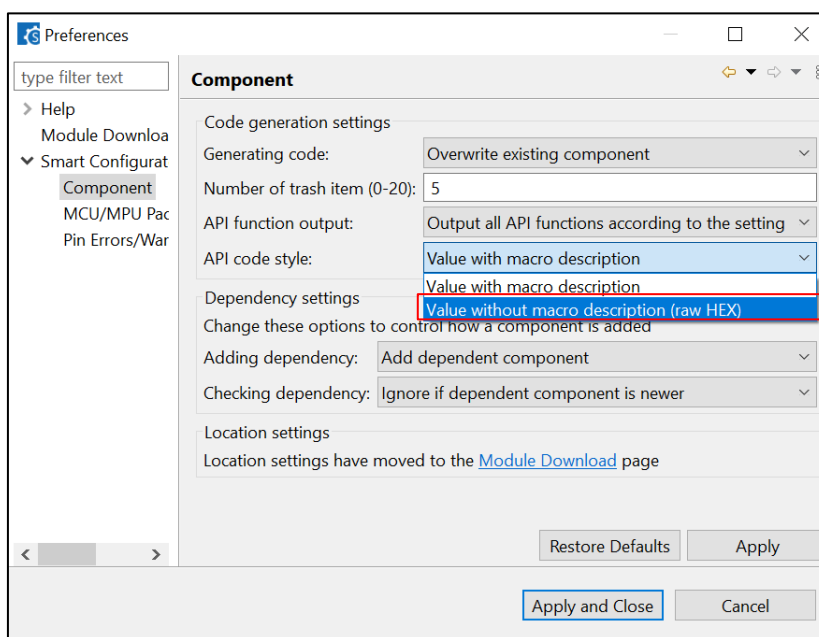


Figure 2-1 Raw hex value code generation setting on “Preferences” page

E.g., If we configure the above setting on the “Preferences” page, then add Compare Match Timer Code Generator component and generate codes, raw hex value code in the register initialization API will be observed.

```
void R_Config_CMT0_Create(void)
{
    /* Disable CMI0 interrupt */
    IEN(CMT0,CMI0) = 0U;

    /* Cancel CMT stop state in LPC */
    MSTP(CMT0) = 0U;

    /* Set control registers */
    CMT0.CMCR.WORD = 0x00C2U;
    /* Set compare match register */
    CMT0.CMCOR = 0x002EU;

    /* Set CMI0 priority level */
    IPR(CMT0,CMI0) = 0x0FU;

    R_Config_CMT0_Create_UserInit();
}
```

Raw hex value is generated

### 2.3.2 Developer assistance feature support

From Smart Configurator for RX V2.15.0, Developer assistance feature has been supported to help user to improve the development efficiency. This new feature supports user to search API information for Code Generator components, add the APIs into user codes via drag-drop operation and copy/paste usage example code easily. The feature is only available on e<sup>2</sup> studio from version 2022-10.

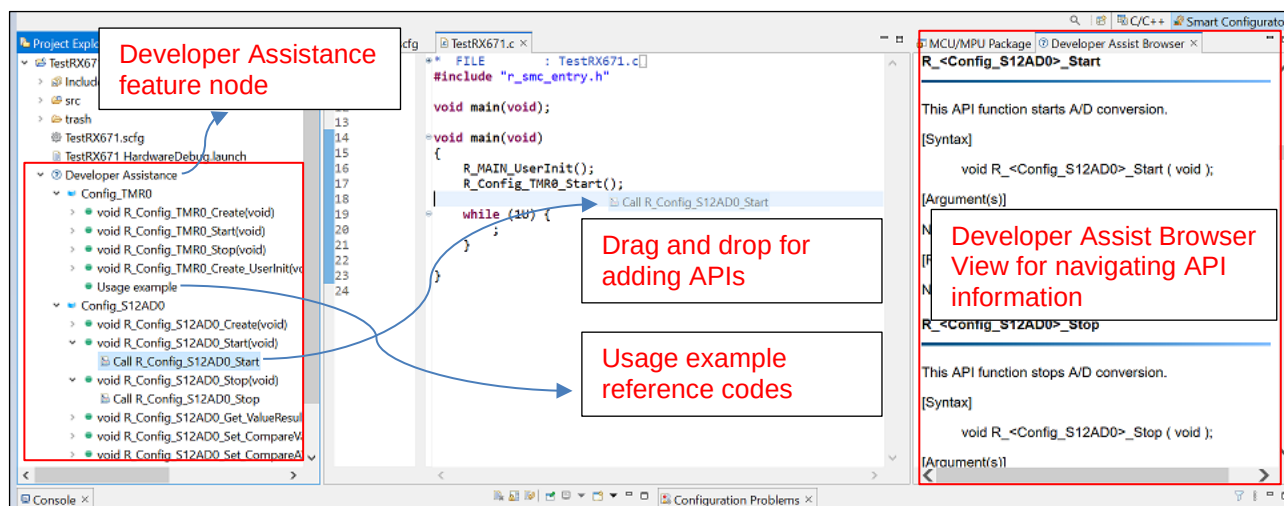


Figure 2-2 Developer Assistance feature for Code Generator components

### 2.3.3 RX board feature update

From Smart Configurator for RX V2.15.0, 9 more boards are available for selection from the “Board” page.

Table 2-1: List of board feature update

| Index | Board name             | Remark      |
|-------|------------------------|-------------|
| 1     | RSKRX71M               | Newly added |
| 2     | RSKRX64M               | Newly added |
| 3     | RSKRX65N               | Newly added |
| 4     | RSKRX660               | Newly added |
| 5     | RSKRX23EA              | Newly added |
| 6     | TargetBoardRX660       | Newly added |
| 7     | TargetBoardRX66N       | Newly added |
| 8     | TargetBoardRX23W       | Newly added |
| 9     | TargetBoardRX23WModule | Newly added |



**2.3.4 IAR workbench files output feature support**

From Smart Configurator for RX V2.15.0, the following IAR workbench related files will be generated out when using Standalone Smart Configurator for IAR project creation.

- Workspace file: \${ProjectName}.eww
- Project files: \${ProjectName}.ewd, \${ProjectName}.ewp
- IPCF file: buildinfo.ipcf

Generated IPCF file name has been fixed to “buildinfo.ipcf” and device name info has been put inside this new IPCF file. With this new feature support, user does not need to manually create workspace and project files, as well as configure the device name in the project option setting after creating IAR projects as before. This feature only supports non-RTOS project, will plan to support RTOS project from next release. These generated workbench files are supported from IAR EW for RX V4.20.3

### 3. Changes

This chapter describes changes to the Smart Configurator for RX V2.15.0.

#### 3.1 Correction of issues/limitations

**Table 3-1 List of Correction of issues/limitations (RX100, RX200 Family) ✓ : Applicable, -: Not Applicable**

| No | Description                                                                                                 | RX110 | RX111 | RX113 | RX130 | RX13T | RX140 | RX230, RX231 | RX23E-A | RX23T | RX23W | RX24T, RX24U | Remarks |
|----|-------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|--------------|---------|-------|-------|--------------|---------|
| 1  | Fixed the board download failure issue while using Standalone Smart Configurator                            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 2  | Fixed the wrong ISR name issue for Motor component with GCC compiler                                        | -     | -     | -     | -     | ✓     | -     | -            | -       | ✓     | -     | ✓            |         |
| 3  | Fixed the r_config include path issue when BSP is disabled                                                  | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 4  | Fixed the S12AD interrupt enable issue for Motor component                                                  | -     | -     | -     | -     | ✓     | -     | -            | -       | ✓     | -     | ✓            |         |
| 5  | Fixed the inconsistent code generation behavior issue when loading existing project with Port configuration | ✓     | ✓     | ✓     | ✓     | -     | -     | ✓            | -       | -     | -     | -            |         |

**Table 3-2 List of Correction of issues/limitations (RX600, RX700 Family) ✓ : Applicable, -: Not Applicable**

| No | Description                                                                                                 | RX64M | RX65N, RX651 | RX66N | RX66T | RX660 | RX671 | RX71M | RX72M | RX72N | RX72T | Remarks |
|----|-------------------------------------------------------------------------------------------------------------|-------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1  | Fixed the board download failure issue while using Standalone Smart Configurator                            | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 2  | Fixed the wrong ISR name issue for Motor component with GCC compiler                                        | -     | -            | -     | ✓     | -     | -     | -     | ✓     | -     | ✓     |         |
| 3  | Fixed the r_config include path issue when BSP is disabled                                                  | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 4  | Fixed the S12AD interrupt enable issue for Motor component                                                  | -     | -            | -     | ✓     | -     | -     | -     | ✓     | -     | ✓     |         |
| 5  | Fixed the inconsistent code generation behavior issue when loading existing project with Port configuration | ✓     | ✓            | -     | ✓     | -     | -     | ✓     | -     | -     | ✓     |         |

**3.1.1 Fixed the board download failure issue while using Standalone Smart Configurator**

When running Standalone Smart Configurator for CS+ without Windows administrator access right and click "Download more boards..." link on the "New Smart Configurator File" wizard page or "Board" page, the following dialog will pop up to indicate a download failure. This issue has been fixed from SC for RX V2.15.0

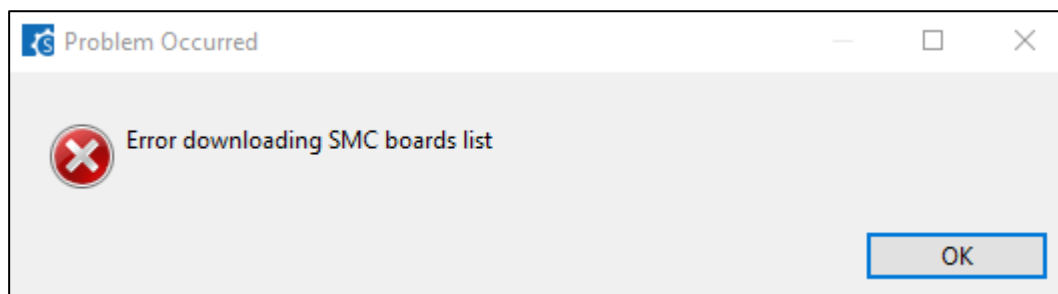


Figure 3-1 Error message pop up when click "Download more boards..."

**3.1.2 Fixed the wrong ISR name issue for Motor component with GCC compiler**

When using Motor component with GCC compiler, and configure MTU crest interrupt or S12AD interrupt, wrong ISR name for these interrupts will be generated out in the "r\_cg\_interrupt\_handlers.c" file under the "/smc\_gen/general" folder which will cause build error. This issue has been fixed from SC for RX V2.15.0

**3.1.3 Fixed the r\_config include path issue when BSP is disabled**

When BSP is disabled (grey off) on the component tree, after code generation, the r\_config path is removed from the project compiler include path setting which may cause build error if it is still be used by the existing BSP source under the project. This issue has been fixed from SC for RX V2.15.0

**3.1.4 Fixed the S12AD interrupt enable issue for Motor component**

When using Motor component with Smart Configurator Japanese version and enable the S12AD interrupt by selecting the S12AD pins, the corresponding interrupt status is not refreshed to "Used" status in the "Interrupt" page. This issue has been fixed from SC for RX V2.15.0

**3.1.5 Fixed the inconsistent code generation behavior issue when loading existing project with Port configuration**

When loading old Smart Configurator project (V2.4.0 or before) with Port configuration into later version (V2.6.0 or later), and some port pins not configured as GPIO, if clicking "Generate Code" button without opening Port configuration GUI, then CMOS register setting codes will not be generated, but these codes will be generated out if clicking "Generate Code" button with Port configuration GUI open, this inconsistent behavior will have no impact on customer application and it has been fixed from SC RX V2.15.0

## 3.2 Specification changes

**Table 3-3 List of Specification changes (RX100, RX200 family)**

○: Applicable, /: Not Applicable

| No | Description                                                                                                   | RX110 | RX111 | RX113 | RX130 | RX13T | RX140 | RX230, RX231 | RX23E-A | RX23T | RX23W | RX24T, RX24U | Remarks |
|----|---------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|--------------|---------|-------|-------|--------------|---------|
| 1  | The Pin error message has been improved for better understanding when component pin is reserved for board pin | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |

**Table 3-4 List of Specification changes (RX600, RX700 family)**

○: Applicable, /: Not Applicable

| No | Description                                                                                                   | RX64M | RX65N, RX651 | RX66N | RX66T | RX660 | RX671 | RX71M | RX72M | RX72N | RX72T | Remarks |
|----|---------------------------------------------------------------------------------------------------------------|-------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1  | The Pin error message has been improved for better understanding when component pin is reserved for board pin | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |

### 3.2.1 The Pin warning message has been improved for better understanding when component pin is reserved for board pin

In previous Smart Configurator version, when component function pin uses the same pin that is reserved by the select board, pin warning messages will be shown on “Pin” page as well as “Configuration problem” view, but the messages are unclear, these messages have been improved in Smart Configurator RX V2.15.0. E.g., when change the RX24T project from custom user board to RSKRX24T board, there are pin warning messages on the “Pin” page and “Configuration problem” view respectively if Comparator component is added. In previous Smart Configurator version, the messages are as in **Figure 3-1** while from Smart Configurator RX V2.15.0, the messages are improved as in **Figure 3-2**.

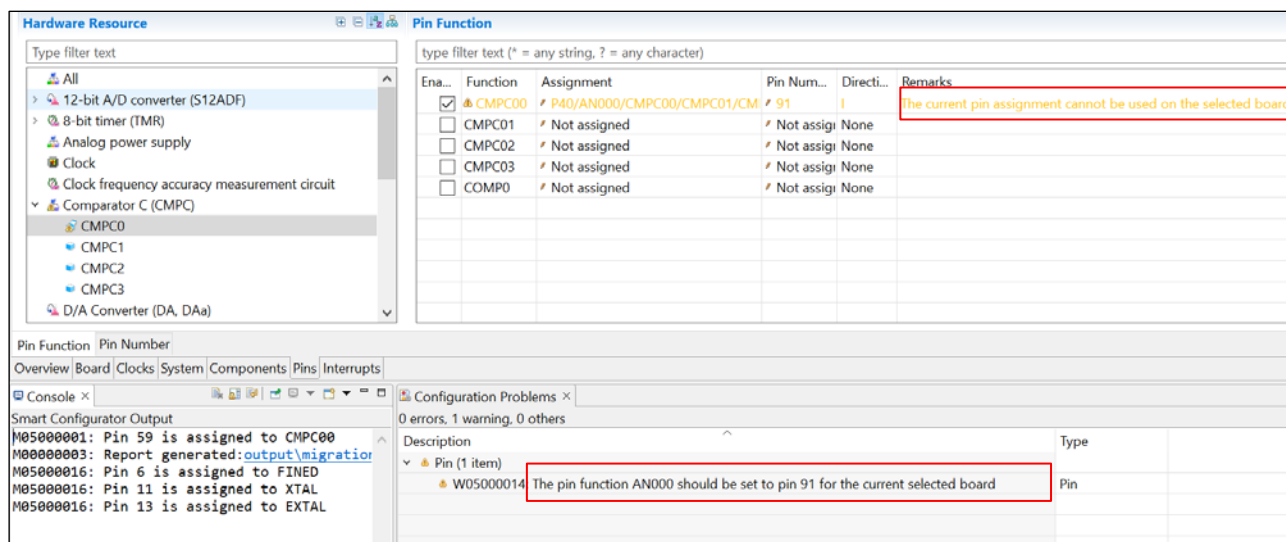


Figure 3-2 Pin warning message in Smart Configurator RX 2.14.0 or before

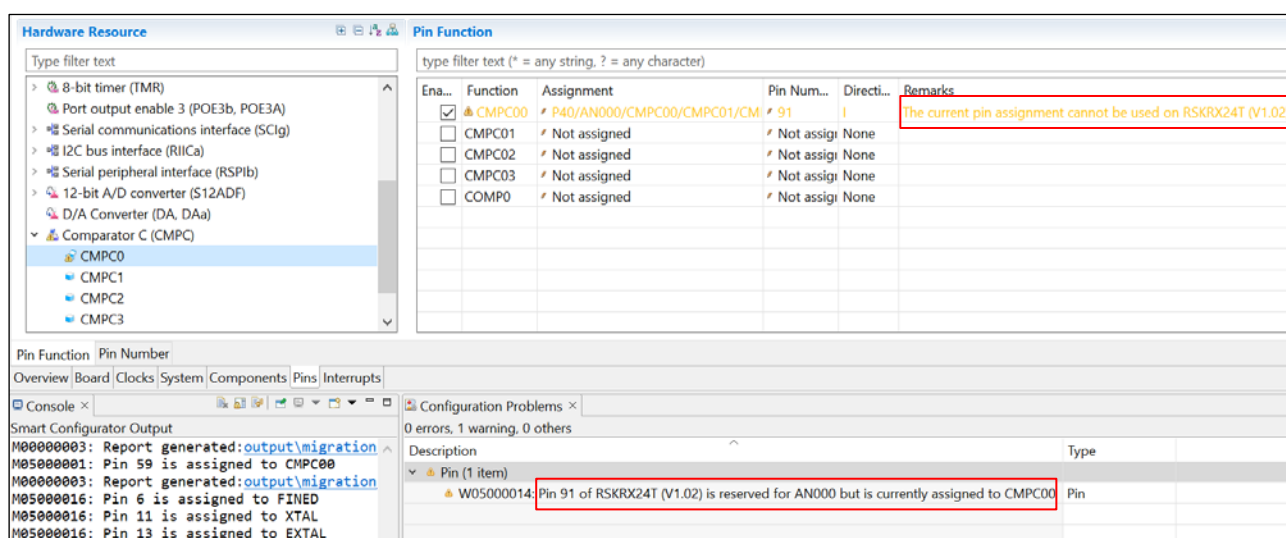


Figure 3-3 Pin warning message in Smart Configurator RX 2.15.0 or later

#### 4. List of RENESAS TOOL NEWS AND TECHNICAL UPDATE

Below is a list of notifications delivered by RENESAS TOOL NEWS and TECHNICAL UPDATE.

| Issue date    | Document No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Applicable MCUs                                                                                                               | Fixed version |
|---------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------|
| Sep. 1, 2017  | R20TS0198    | 1. When using the I2C bus interface in slave mode<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx</a>                                                                                                                                                                                          | RX130,<br>RX64M,<br>RX651,<br>RX65N                                                                                           | V1.3.0        |
| Apr. 1, 2018  | R20TS0294    | 1. When using the bus for peripheral functions<br><a href="https://www.renesas.com/document/tnn/notes-cs-smart-configurator-rx-e-studio-smart-configurator-plug">https://www.renesas.com/document/tnn/notes-cs-smart-configurator-rx-e-studio-smart-configurator-plug</a>                                                                                                                                                                                       | RX230,<br>RX231                                                                                                               | V1.4.0        |
| Oct. 01, 2018 | R20TS0351    | 1. Setting TPU0 channel of PWM Mode Timer<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-0">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-0</a>                                                                                                                                                                                              | RX65N,<br>RX651,<br>RX64M                                                                                                     | V1.5.0        |
| Feb.01, 2019  | R20TS0401    | 1. Point for caution when using the GTIOcnm pin (n = 0 to 9, m = A, B) of the general PWM timer (GPTW) as a hardware source<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-1">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-1</a>                                                                                                            | RX66T                                                                                                                         | V2.1.0        |
| Apr.16, 2019  | R20TS0425    | 1. When using the I2C bus interface in master mode<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-2">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-2</a>                                                                                                                                                                                     | RX110,<br>RX111,<br>RX113,<br>RX130,<br>RX230,<br>RX231,<br>RX23T,<br>RX24T,<br>RX24U,<br>RX64M,<br>RX651,<br>RX65N,<br>RX71M | V2.2.0        |
| Jun.01, 2019  | R20TS0434    | 1. When using self-diagnosis function of 12-bit A/D converter in Single Scan Mode<br>2. When using Serial Peripheral Interface clock synchronous mode in slave transmit<br>3. When using I2C Bus Interface with Fast-mode Plus enabled<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-3">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-3</a> | RX230,<br>RX231,<br>RX66T,<br>RX72T,<br>RX64M,<br>RX651,<br>RX65N,<br>RX71M                                                   | V2.2.0        |

| Issue date    | Document No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Applicable MCUs                                                                                                | Fixed version |
|---------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------|
| Jun.16, 2019  | R20TS0436    | 1. When using general PWM timer<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-4">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-4</a>                                                                                                                                                                                                                                                                                                                                                                                            | RX66T, RX72T                                                                                                   | V2.2.0        |
| Aug.01, 2019  | R20TS0466    | 1. When using the NACK reception transfer suspension function on the I <sup>2</sup> C bus interface<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-5">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-5</a>                                                                                                                                                                                                                                                                                                                        | RX110, RX111, RX113, RX130, RX230, RX231, RX23T, RX24T, RX24U, RX64M, RX651, RX65N, RX66T, RX71M, RX72M, RX72T | V2.3.0        |
| Sep.16, 2019  | R20TS0477    | 1. When Using the Automatic Adjustment Function for Time Error Adjustment on the Realtime Clock<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-6">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-6</a>                                                                                                                                                                                                                                                                                                                            | RX110, RX111, RX113, RX130, RX230, RX231, RX64M, RX651, RX65N                                                  | V2.4.0        |
| Dec.16, 2019  | R20TS0522    | 1. When using temperature sensor output or internal reference voltage for comparison function on S12AD components (Single Scan Mode, Group Scan Mode and Continuous Scan Mode)<br>2. When using calendar mode API to set counter value on RTC component<br>3. When using window B for comparison function on S12AD Continuous Scan Mode component<br>4. When using double trigger mode on S12AD Single Scan Mode component<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-7">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-7</a> | RX64M, RX651, RX65N, RX66T, RX71M, RX72M, RX72T                                                                | V2.4.0        |
| Feb. 01, 2020 | R20TS0546    | 1. When using the PLL frequency synthesizer of the clock<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-8">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-8</a>                                                                                                                                                                                                                                                                                                                                                                   | RX64M, RX651, RX65N, RX66T, RX71M, RX72T                                                                       | V2.5.0        |

| Issue date    | Document No.    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Applicable MCUs                          | Fixed version |
|---------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------|
| Mar. 16, 2020 | R20TS0555       | 1. When using the TGIC7 and TGID7 interrupts in Normal Mode Timer or PWM Mode Timer<br>2. When creating a project with RX24T 64-pin FK packages<br>3. When using compare level of AN109 in Single Scan Mode S12AD<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-9">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-9</a>                                                                      | RX24T, RX24U, RX71M                      | V2.5.0        |
| Apr.03, 2020  | TN-RX*-A0222    | Errata to RX72N Group User's Manual: Hardware Rev.1.00<br><a href="https://www.renesas.com/document/tcu/errata-rx72n-group-users-manual-hardware-rev100">https://www.renesas.com/document/tcu/errata-rx72n-group-users-manual-hardware-rev100</a>                                                                                                                                                                                                                                                               | RX72N                                    | V2.5.0        |
| May.16, 2020  | R20TS0579       | 1. When using Stop API in Continuous Scan Mode DSAD and Single Scan Mode DSAD components<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-10">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-10</a>                                                                                                                                                                                             | RX23E-A                                  | V2.6.0        |
| Jun.16, 2020  | R20TS0591       | 1. When using Data Transfer Controller (DTC) component and making configuration for its vector base address<br>2. When using SCI/SCIF Asynchronous Mode component and making configuration for its bit-rate<br>3. When using AN007 or AN107 as analog input pins in S12AD components<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-11">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-11</a> | RX230, RX231, RX651, RX65N, RX66T, RX72T | V2.6.0        |
| Aug. 21, 2020 | TN-RX*-A0234A/E | Errata to the RX113 Group User's Manual: Hardware Rev.1.10<br><a href="https://www.renesas.com/document/tcu/errata-rx113-group-users-manual-hardware">https://www.renesas.com/document/tcu/errata-rx113-group-users-manual-hardware</a>                                                                                                                                                                                                                                                                         | RX113                                    | V2.8.0        |
| Sep. 01, 2020 | R20TS0611       | When using PWM Mode component and making configuration with MTU channel 1 and 2<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-13">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-13</a>                                                                                                                                                                                                      | RX13T, RX23T, RX24T, RX24U               | V2.7.0        |



| Issue date    | Document No.    | Description                                                                                                                                                                                                                                                                                                                                                                                                                     | Applicable MCUs                                                                       | Fixed version |
|---------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------|
| Sep. 24, 2020 | TN-RX*-A0235B/E | Notes on the Transmit Data Empty Interrupt When the FIFO is in Use with the Serial Communications Interface (SCI)<br><a href="https://www.renesas.com/document/tcu/notes-transmit-data-empty-interrupt-when-fifo-use-serial-communications-interface-sci">https://www.renesas.com/document/tcu/notes-transmit-data-empty-interrupt-when-fifo-use-serial-communications-interface-sci</a>                                        | RX651,<br>RX65N,<br>RX66N,<br>RX66T,<br>RX72M,<br>RX72N,<br>RX72T                     | V2.7.0        |
| Oct. 01, 2020 | R20TS0623       | 1. When using "r_sci_rx" component and making pin configurations for RXD and TXD<br>2. When using "r_sci_rx" component, duplicate SCI11 channels are displayed in the Components configuration panel<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-12">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-12</a> | RX651,<br>RX65N,<br>RX66N,<br>RX72M,<br>RX72N                                         | V2.7.0        |
| Dec. 01, 2020 | R20TS0638       | 1. Note on setting timer operation period in Motor component.<br>2. When loading project with port configuration created in V2.5.0 or version before into V2.6.0 version onwards<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-14">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-14</a>                     | RX13T,<br>RX23T,<br>RX24T,<br>RX24U,<br>RX651,<br>RX65N,<br>RX66T,<br>RX72T,<br>RX72M | V2.8.0        |
| Aug. 29, 2017 | TN-RX*-A180A/E  | Restriction for the PH7/XCIN Pin<br><a href="https://www.renesas.com/document/tcu/restriction-ph7xcin-pin">https://www.renesas.com/document/tcu/restriction-ph7xcin-pin</a>                                                                                                                                                                                                                                                     | RX110,<br>RX111,<br>RX113                                                             | V2.9.1        |
| May. 16, 2021 | R20TS0696       | When using PORT component and configuring PORTC multiplexed pins as input<br><a href="https://www.renesas.com/us/en/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-15">https://www.renesas.com/us/en/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-15</a>                                                                                                                | RX130,<br>RX230,<br>RX231                                                             | V2.10.0       |
| Aug. 01, 2021 | R20TS0735       | When using Port Output Enable (POE) component and configuring MTU pins as high impedance<br><a href="https://www.renesas.com/sq/zh/document/tnn/notes-e2-studio-smart-configurator-plug-smart-configurator-rx">https://www.renesas.com/sq/zh/document/tnn/notes-e2-studio-smart-configurator-plug-smart-configurator-rx</a>                                                                                                     | RX23W,<br>RX24T,<br>RX64M,<br>RX651,<br>RX71M,<br>RX72M                               | V2.11.0       |

| Issue date    | Document No. | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Applicable MCUs                                                                                                                                                                                                                     | Fixed version |
|---------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Nov. 16, 2021 | R20TS0770    | When using Port component and configuring port pins' driving ability as high drive output<br><a href="https://www.renesas.com/us/en/document/tnn/notes-e-studio-smart-configurator-plugin-smart-configurator-rx-16">https://www.renesas.com/us/en/document/tnn/notes-e-studio-smart-configurator-plugin-smart-configurator-rx-16</a>                                                                                                                                       | RX651,<br>RX65N                                                                                                                                                                                                                     | V2.12.0       |
| Mar. 01, 2022 | R20TS0820    | 1. When importing existing C++ project and updating BSP component version to 7.00 onwards<br><br>2. When build or clean e <sup>2</sup> studio Smart Configurator project<br><br>3. When using AN107 in S12AD Continuous Scan Mode component<br><a href="https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plugin-smart-configurator-rx-17">https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plugin-smart-configurator-rx-17</a> | RX110,<br>RX111,<br>RX113,<br>RX130,<br>RX13T,<br>RX140,<br>RX230,<br>RX231,<br>RX23E-A,<br>RX23T,<br>RX23W,<br>RX24T,<br>RX24U,<br>RX651,<br>RX65N,<br>RX66N,<br>RX66T,<br>RX671,<br>RX72M,<br>RX72N,<br>RX72T,<br>RX64M,<br>RX71M | V2.13.0       |

## 5. Points for Limitation

This section describes points for limitation regarding the Smart Configurator for RX V2.15.0. Regarding to FIT component driver limitation, please refer to its document generated out after code generation.

### 5.1 List of Limitation

Table 5-1 List of limitations (RX100, RX200 Family)

✓ : Applicable, -: Not Applicable

| No | Description                                                                            | RX110 | RX111 | RX113 | RX130 | RX13T | RX140 | RX230, RX231 | RX23E-A | RX23T | RX23W | RX24T, RX24U | Remarks |
|----|----------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|--------------|---------|-------|-------|--------------|---------|
| 1  | Note on general I/O port direction issue on MCU package view when using Port Component | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 2  | Note on the resource tree in the FIT component GUI configuration                       | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 3  | Note on address pin when using external bus                                            | -     | -     | -     | -     | -     | -     | ✓            | -       | -     | ✓     | -            |         |

Table 5-2 List of Limitation (RX600, RX700 family)

✓ : Applicable, -: Not Applicable

| No | Description                                                                                | RX64M | RX65N, RX651 | RX66N | RX66T | RX660 | RX671 | RX71M | RX72M | RX72N | RX72T | Remarks |
|----|--------------------------------------------------------------------------------------------|-------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1  | Note on the general I/O port direction issue on MCU package view when using Port Component | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 2  | Note on the resource tree in the FIT component GUI configuration                           | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 3  | Note on address pin when using external bus                                                | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |

## 5.2 Details of Limitation

### 5.2.1 Note on the general I/O port direction issue on MCU package view when using Port Component

When adding two configurations for Port component and set different direction for the same port pin in these two configurations, e.g. set P14 as output in 1st configuration while P14 as input in the 2nd configuration, after that remove the 2nd configuration, but now the P14 direction is marked as 'I' on the MCU package view for 1st configuration.

### 5.2.2 Note on the resource tree in the FIT component GUI configuration

When configuring the FIT component, the resource tree is still visible even there is no pins under it, for such case it will be hidden from next release.

| Property                                 | Value |
|------------------------------------------|-------|
| # RX FIFO threshold for channel 9        | 8     |
| # RX FIFO threshold for channel 10       | 8     |
| # RX FIFO threshold for channel 11       | 8     |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| # Received data match function for chann | Not   |
| Resources                                |       |
| SCI                                      |       |

Figure 5-1 Resource tree without any pin in FIT component GUI

5.2.3 Note on address bus when using external bus

When using Address/Data multiplexed bus in external bus, disable all unnecessary address output pin settings.

Address output pin setting

☐ A7-A0, BC0#, DQM2, DQM3

☐ A8☐ A9☐ A10☐ A11

☐ A12☐ A13☐ A14☐ A15

☐ A16☐ A17☐ A18☐ A19

☐ A20☐ A21☐ A22☐ A23

Settings for External Address Buses A0 to A7 :  
Set PA0 to PA7.

Settings for External Address Buses A16 to A23 :  
(Option 1)Set PC0 to PC7.  
(Option 2)Set PC0, PC1, P71, P72, P74, and PC5 to PC7.  
(Option 3)Set P90 to P97.

Figure 5-2 “Address output pin setting” value should be disabled

## 6. Points for Caution

This section describes points for caution regarding the Smart Configurator for RX V2.15.0. Regarding to FIT component driver caution, please refer to its document generated out after code generation.

### 6.1 List of Caution

Table 6-1 List of Caution (RX100, RX200 Family)

✓: Applicable, -: Not Applicable

| No | Description                                                                            | RX110 | RX111 | RX113 | RX130 | RX13T | RX140 | RX230, RX231 | RX23E-A | RX23T | RX23W | RX24T, RX24U | Remarks |
|----|----------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|--------------|---------|-------|-------|--------------|---------|
| 1  | Note on configuring GPT interrupt                                                      | -     | -     | -     | -     | -     | -     | -            | -       | -     | -     | ✓            |         |
| 2  | Note on using only reception in SCI Clock Synchronous Mode                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 3  | Notes on using high transfer speed in SCIF Synchronous Mode                            | -     | -     | -     | -     | -     | -     | -            | -       | -     | -     | -            |         |
| 4  | Note on device change functionality                                                    | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 5  | Note on using Smart Configurator for GCC project in e <sup>2</sup> studio 7.4.0        | ✓     | ✓     | ✓     | ✓     | ✓     | -     | ✓            | ✓       | ✓     | -     | ✓            |         |
| 6  | Note on using Data Transfer Controller                                                 | -     | -     | -     | -     | ✓     | ✓     | -            | ✓       | -     | -     | -            |         |
| 7  | Note on Ports setting when using S12AD components                                      | ✓     | -     | ✓     | ✓     | -     | ✓     | -            | -       | -     | ✓     | -            |         |
| 8  | Note on section build warning when using FIT components                                | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 9  | Note on C++ project support in CS+ and IAR                                             | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 10 | Note on Installation directory                                                         | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 11 | Note on the build error of RTOS C++ project                                            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 12 | Note on the output of high impedance issue for TXDn pin                                | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |
| 13 | Note on the include path update issue when renaming the component's configuration name | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓            | ✓       | ✓     | ✓     | ✓            |         |

Table 6-2 List of Caution (RX600, RX700 Family)

✓: Applicable, -: Not Applicable

| No | Description                                                                            | RX64M | RX65N, RX651 | RX66N | RX66T | RX660 | RX671 | RX71M | RX72M | RX72N | RX72T | Remarks |
|----|----------------------------------------------------------------------------------------|-------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1  | Note on configuring GPT interrupt                                                      | ✓     | -            | ✓     | ✓     | -     | -     | ✓     | ✓     | ✓     | ✓     |         |
| 2  | Note on using only reception in SCI Clock Synchronous Mode                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 3  | Notes on using high transfer speed in SCIF Synchronous Mode                            | ✓     | -            | -     | -     | -     | -     | ✓     | -     | -     | -     |         |
| 4  | Note on device change functionality                                                    | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 5  | Note on using Smart Configurator for GCC project in e <sup>2</sup> studio 7.4.0        | ✓     | ✓            | ✓     | ✓     | -     | -     | ✓     | -     | ✓     | ✓     |         |
| 6  | Note on using Data Transfer Controller                                                 | -     | ✓            | ✓     | -     | ✓     | ✓     | -     | ✓     | ✓     | -     |         |
| 7  | Note on Ports setting when using S12AD components                                      | ✓     | ✓            | ✓     | -     | -     | ✓     | ✓     | ✓     | ✓     | -     |         |
| 8  | Note on section build warning when using FIT components                                | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 9  | Note on C++ project support in CS+ and IAR                                             | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 10 | Note on Installation directory                                                         | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 11 | Note on the build error of existing RTOS C++ project                                   | ✓     | ✓            | ✓     | ✓     | -     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 12 | Note on the output of high impedance issue for TXDn pin                                | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |
| 13 | Note on the include path update issue when renaming the component's configuration name | ✓     | ✓            | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     | ✓     |         |

## 6.2 Details of Caution

### 6.2.1 Note on configuring GPT interrupts

The GPT interrupts are not specified as the Software Configurable Interrupt in the initial state even after the GPT interrupts are configured by GPT component. To specify GPT interrupts as Software Configurable Interrupt source, release unused Software Configurable interrupt source on the Interrupt sheet and allocate GPT interrupts instead.

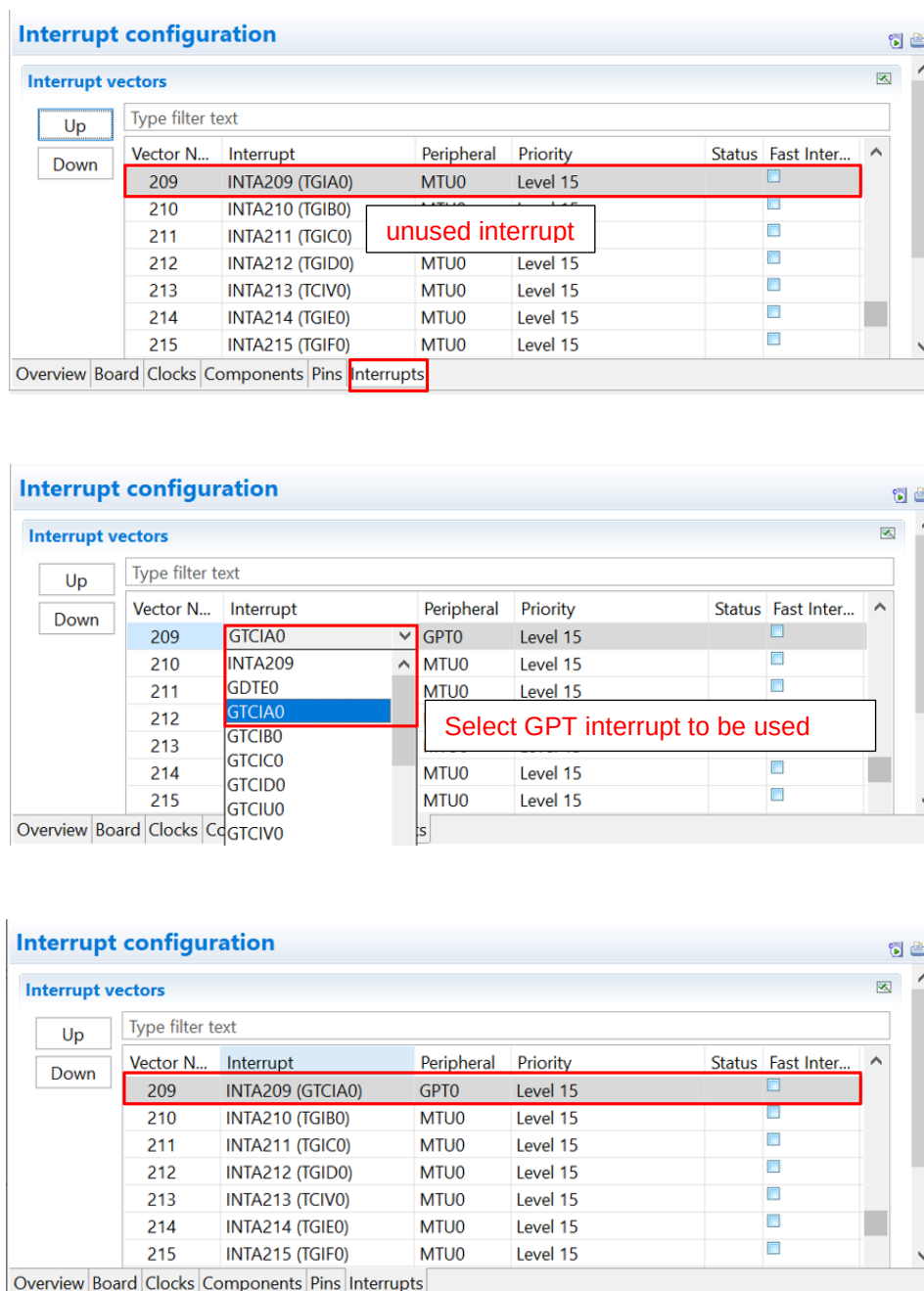


Figure 6-1 GPT interrupt vector number assignment



### 6.2.2 Note on using only reception in SCI Clock Synchronous Mode

In SCI Clock Synchronous Mode using internal clock, if only reception is enabled in high communication speed, extra clocks are generated even though reception has been completed.

This is due to the delay in disabling RE to stop the clock after the desired number of data is received.

To prevent this issue, select Transmission/Reception work mode when using Smart Configurator. Use "R\_<Configuration Name>\_Serial\_Send\_Receive" function instead of "R\_<Configuration Name>\_Serial\_Receive". The same number of data for tx\_num and rx\_num should be specified.

Disable TXDn pin in Smart Configurator Pins page and send dummy data if transmission is not required.

There will be warnings when TXDn pin is disabled. These warnings can be ignored as TXDn pin is not intended to be used originally.

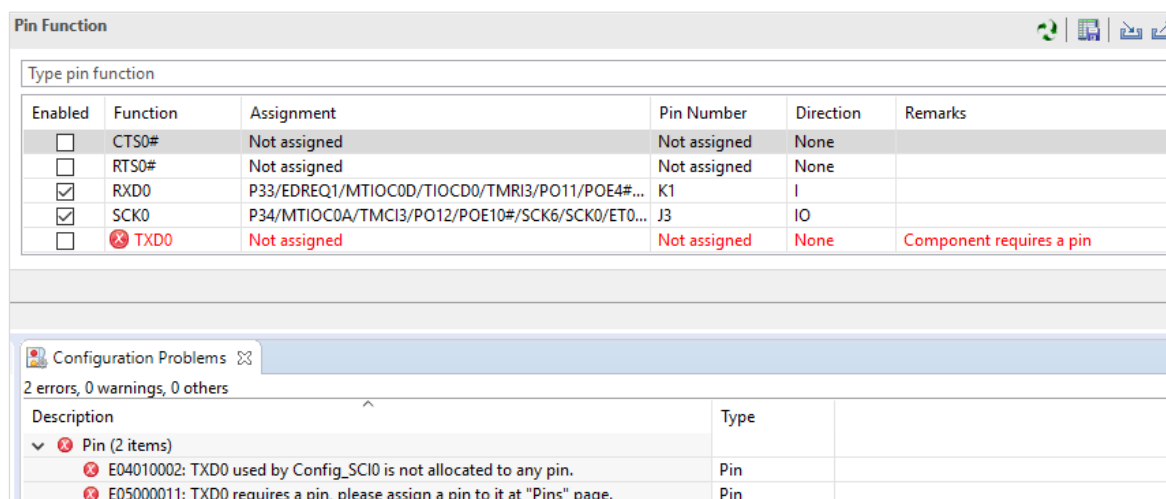


Figure 2-2 Ignore warnings when TXDn pin is disabled (Example with TXD0)

### 6.2.3 Note on using high transfer speed in SCIF Synchronous Mode

If the number of reception data specified for the API ( R\_<Configuration Name>\_Serial\_Receive or R\_<Configuration Name>\_Serial\_Send\_Receive ) and reception FIFO threshold specified on GUI do not satisfy the formula below:

$$(\text{Reception Data Size}) = n * (\text{Reception FIFO threshold}) \quad (n=1,2,3,\dots)$$

extra clock generation may occur after the desired number of data is received in high communication speed when using internal clock.

To prevent this issue, specify the reception data size and reception FIFO threshold that satisfy the formula.

#### 6.2.4 Note on device change functionality

Save project settings before performing change device operation. After change device, perform these operations:

1. Visual check on Components window and Configuration Problems window. Resolve error and conflicts if there is any.
2. Check each component and converted settings.
3. Re-generate codes.

#### 6.2.5 Note on using Smart Configurator for GCC project in e2 studio 7.4.0

When using default options to create new "GCC for Renesas RX Executable Project" with Smart Configurator in e2 studio 7.4.0, build error occurs.

```
C:\example\src\smc_gen\r_bsp\mcu/all/r_bsp_common.h:55:24:
fatal error: stdbool.h: No such file or directory
```

As workaround, use e2 studio 7.5.0 to create new "GCC for Renesas RX Executable Project" with Smart Configurator.

#### 6.2.6 Note on using Data Transfer Controller

Smart Configurator does not support sequence transfer, write-back skip, write-skip disable and displacement addition features.

#### 6.2.7 Note on Ports setting when using S12AD components

Some pins cannot be configured as output pin when S12AD components (Single Scan Mode, Continuous Scan Mode and Group Scan Mode) are used. For more information, refer to User's Manual: Hardware of the affected groups, "12-Bit A/D Converter" chapter, "Pin Setting When Using the 12-bit A/D Converter" usage note. From SC for RX 2.4.0, this note has been highlighted on the top GUI of S12AD components.

| Device groups                                      | Port pins                                                                         |
|----------------------------------------------------|-----------------------------------------------------------------------------------|
| RX110, RX113                                       | P40 to P44, P46                                                                   |
| RX113                                              | P40 to P44, P46<br>P90 to P92                                                     |
| RX130, RX140, RX23W                                | P40 to P47                                                                        |
| RX64M, RX651, RX65N, RX66N,<br>RX71M, RX72M, RX72N | P00 to P02, P03, P05, P07<br>P40 to P47<br>P90 to P93<br>PD0 to PD7<br>PE0 to PE7 |
| RX671                                              | P00 to P02, P03, P05, P07<br>P40 to P47<br>P90<br>PD0 to PD7<br>PE0, PE1          |

#### 6.2.8 Note on section build warning when using FIT components

When using FIT components (e.g. r\_ether\_rx) with section settings, these section settings will be added automatically into IDE C/C++ builder setting, but these section settings will not automatically removed from the C/C++ builder setting when these FIT components are deleted from SC, thus there are build warnings for not finding section declaration when execute build operation after these FIT components are removed, please ignore these build warnings.

### 6.2.9 Note on C++ project support in CS+ and IAR

When using Smart Configurator for C++ project application in CS+ and IAR Embedded Workbench for RX, please be noted to manually prepare the following content in the main.cpp generated out by these IDEs to make it work properly with Smart Configurator source codes.

- CS+: please manually add the following highlighted one line of code into main.cpp

```
#ifdef __cplusplus
// #include <ios> // Remove the comment when you use ios
// _SINT ios_base::Init::init_cnt; // Remove the comment when you use ios
#endif

void main(void);
#ifdef __cplusplus
extern "C" {
#include "r_smc_entry.h"
void abort(void);
}
#endif

void main(void)
{
}

#ifdef __cplusplus
void abort(void)
{
}
#endif
```

- IAR Embedded Workbench for RX: please add the following highlighted 5 lines of codes into main.cpp

```
#ifdef __cplusplus
extern "C" {
#include "r_smc_entry.h"
}
#endif

int main(void)
{
    return ();
}
```

### 6.2.10 Note on Installation directory

When installing Smart Configurator, you may get an error message "The specified path is too long" if the installation file path is longer than the maximum length permitted by Windows. The suggested way is to re-install the CS+ into its default path (C:\Program Files (x86)\Renesas Electronics\ or a folder whose paths' length is less than 65 characters, then install Smart Configurator again.

### 6.2.11 Note on the build error of existing RTOS C++ project

When building existing RTOS C++ CCRX project (FreeRTOS & Azure RTOS) in e<sup>2</sup> studio, there will be a build error saying "E0562310: Undefined external symbol "\_abort" referenced in "error"" in the output console, these existing projects were created by Smart Configurator for RX V2.12.0 and before version while BSP version was updated to V7.00. To resolve this build error, please add the "abort" function manually into main program file.

e.g. Add the "abort" function for FreeRTOS C++ CCRX project

```
#include "FreeRTOS.h"
#include "task.h"

void main_task(void *pvParameters)
{
    /* Create all other application tasks here */

    while(1);

    vTaskDelete(NULL);
}

void abort (void)
{
}
```

### 6.2.12 Note on the output of high impedance issue for TXDn pin

When using the serial components, the SCR.TE bit is set to 1 after changing the pin function to TXDn which will cause the output of TXDn pin becomes high impedance. To fix this issue, SCI/SCIF Asynchronous Mode component has followed the UM suggestion (set the TE bit to 1 before changing the pin function to "TXDn". Change the pin function to "general-purpose I/O port, output" before setting the TE bit to 0) and updated the generated codes from Smart Configurator for RX V2.14.0. For the other serial components as below, the generated codes are not updated to follow the UM suggestion because the high impedance time is quite short, there is no impact to these modes' communications.

- SCI/SCIF Clock Synchronous Mode
- Smart Card Interface Mode
- SPI Clock Synchronous Mode (SCI channels)

### 6.2.13 Note on the include path update issue when renaming the component's configuration name

When renaming the added component's configuration in e<sup>2</sup> studio Smart Configurator project that has self-defined include path setting for any folder or file, include path setting for that folder or file will keep the old name setting after code generation. This will cause build error when compiling the newly generated codes so please manually update the include path.

The folder or file which has self-defined include path setting can be recognized by checking the overlay icon (📁) on that folder or file. Below is an example on how to handle the include path update after renaming Compare Match Timer component configuration.

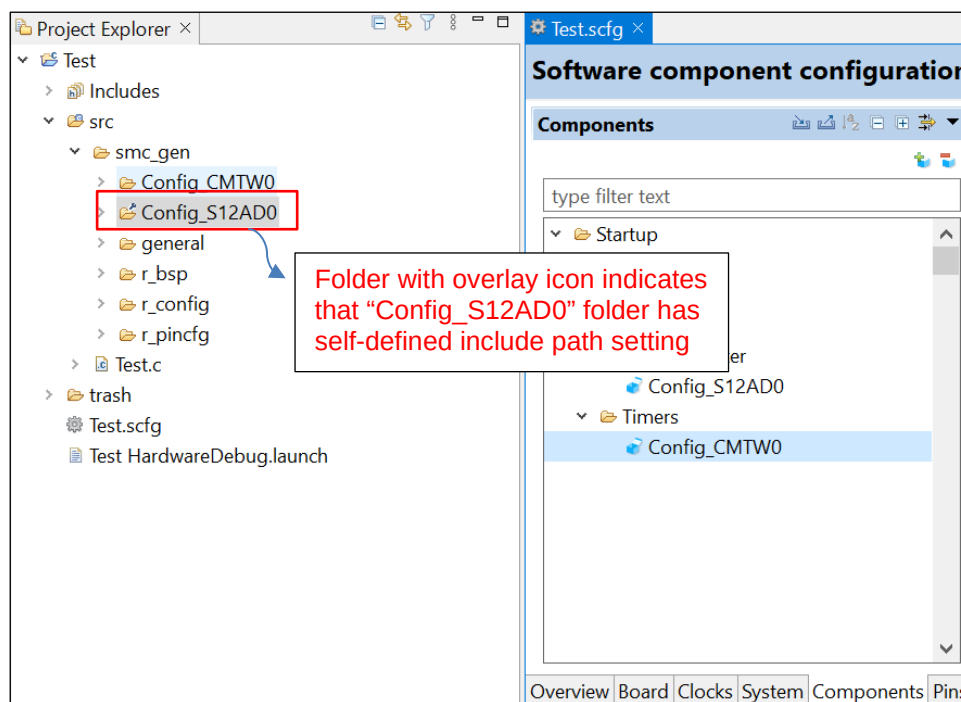


Figure 6-3 Compare Match Timer component configuration before renaming

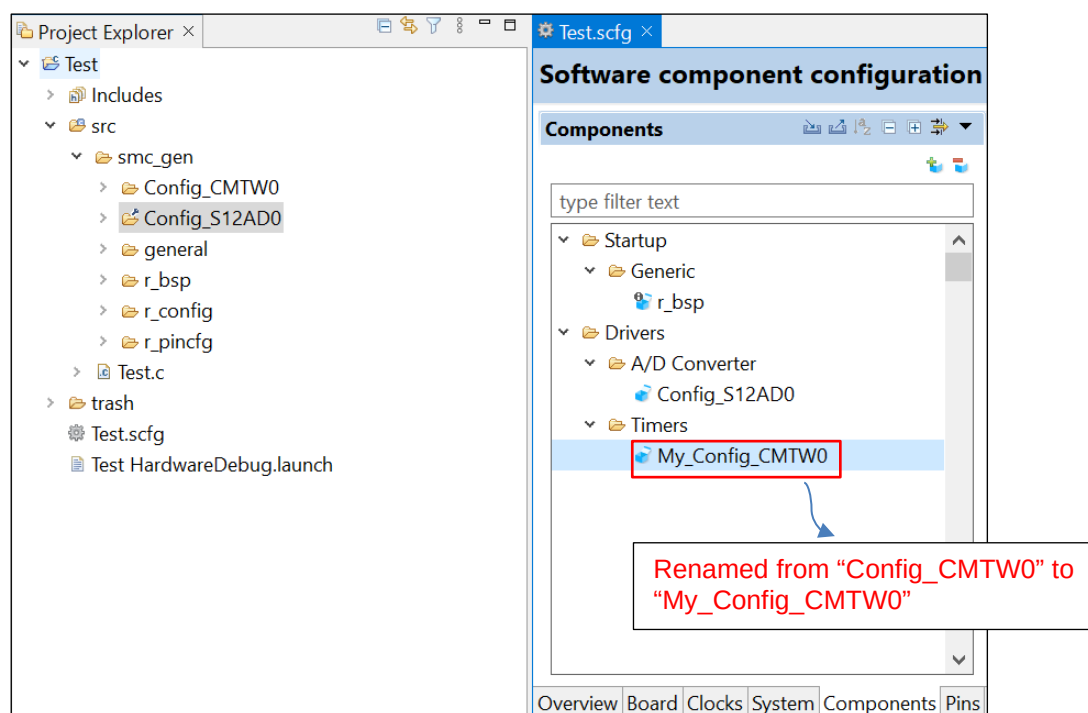


Figure 6-4 The Compare Match Timer component configuration after renaming

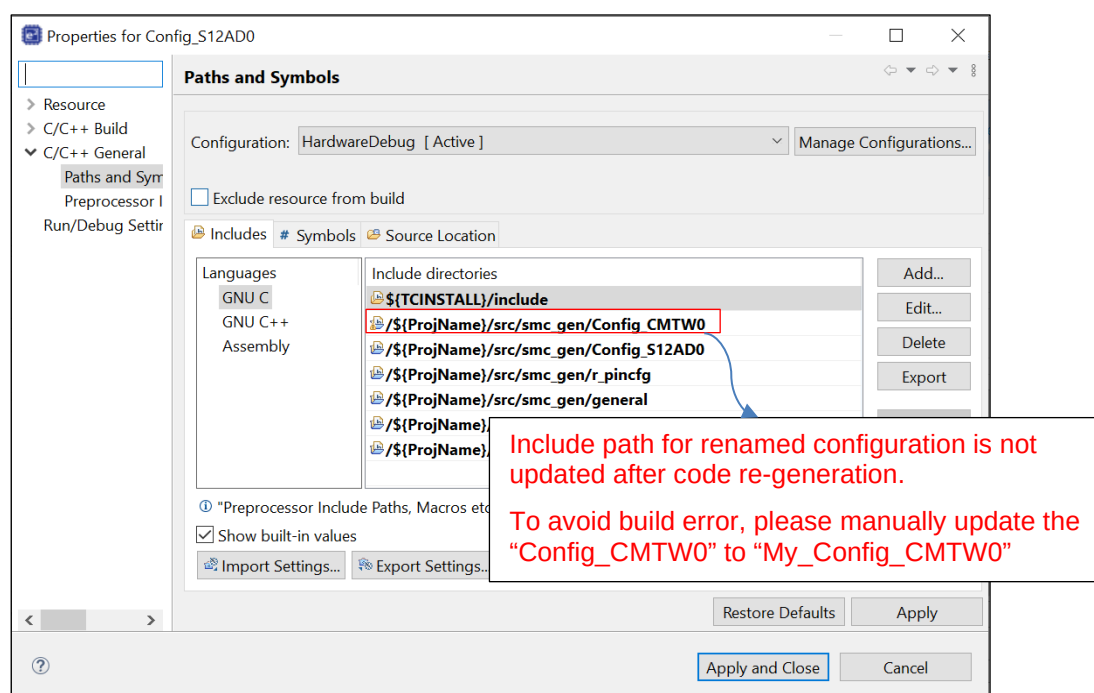


Figure 6-5 Include path setting for the "Config\_S12AD0" configuration

## Revision History

| Rev. | Date       | Description |                                                                                                                                                                                                                                                                                                                                                                                         |
|------|------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |            | Page        | Summary                                                                                                                                                                                                                                                                                                                                                                                 |
| 2.20 | Jul.22.19  | -           | Create new                                                                                                                                                                                                                                                                                                                                                                              |
| 2.21 | Oct.08.19  | -           | Update to Rev.2.2.1                                                                                                                                                                                                                                                                                                                                                                     |
| 2.30 | Nov.05.19  | -           | Update to Rev.2.3.0                                                                                                                                                                                                                                                                                                                                                                     |
| 2.40 | Jan.20.20  | -           | Update to Rev.2.4.0                                                                                                                                                                                                                                                                                                                                                                     |
| 2.50 | Apr.20.20  | -           | Update to Rev.2.5.0                                                                                                                                                                                                                                                                                                                                                                     |
| 2.60 | Jul.20.20  | -           | Update to Rev.2.6.0                                                                                                                                                                                                                                                                                                                                                                     |
| 2.70 | Oct.20.20  | -           | Update to Rev.2.7.0                                                                                                                                                                                                                                                                                                                                                                     |
| 2.71 | Oct.20.20  | 32-33       | Add 3 limitations. <ul style="list-style-type: none"> <li>Note on generated codes issue when using Motor component</li> <li>Note on write protection issue for pin function control registers when using Motor component</li> <li>Note on pin conflict error issue when using r_sci_rx FIT component</li> </ul>                                                                         |
| 2.80 | Jan.20.21  | -           | Update to Rev.2.8.0                                                                                                                                                                                                                                                                                                                                                                     |
| 2.81 | Mar.22.21  | -           | Update to Rev.2.8.1                                                                                                                                                                                                                                                                                                                                                                     |
| 2.91 | Apr.13.21  | -           | Update to Rev.2.9.1                                                                                                                                                                                                                                                                                                                                                                     |
| 2.92 | Jul. 21.21 | -           | Update to Rev.2.10.0                                                                                                                                                                                                                                                                                                                                                                    |
| 2.93 | Sep.29.21  | -           | Update to Rev.2.11.0                                                                                                                                                                                                                                                                                                                                                                    |
| 2.94 | Jan.20.22  | -           | Update to Rev.2.12.0                                                                                                                                                                                                                                                                                                                                                                    |
| 2.95 | Apr.20.22  | -           | Update to Rev.2.13.0                                                                                                                                                                                                                                                                                                                                                                    |
|      |            | 7-8         | Update chapter 2.1 to add new supported packages                                                                                                                                                                                                                                                                                                                                        |
|      |            | 15-16       | Create chapter 2.3 with new supported features <ul style="list-style-type: none"> <li>Default BSP revision is updated to 7.10</li> <li>RX140 ROM 256K packages and RX66T 48 packages are supported</li> <li>Code generation software components have supported for RI600V4 project</li> <li>Turn off function is supported for automated code generation feature after build</li> </ul> |
|      |            | 17-18       | Create chapter 3.1 with correction of issues and limitations                                                                                                                                                                                                                                                                                                                            |
|      |            | 19-21       | Create chapter 3.2 with specification changes                                                                                                                                                                                                                                                                                                                                           |
|      |            | 26          | Add tool news R20TS0820 into chapter 4 table list                                                                                                                                                                                                                                                                                                                                       |
|      |            | 29          | Add 2 more limitation with 5.2.5 and 5.2.6 <ul style="list-style-type: none"> <li>Note on section address issue when configuring bank mode to dual mode</li> <li>Note on the function pin SS12# when using RX140 32 pin packages</li> </ul>                                                                                                                                             |
|      |            | 36          | Add one more caution note with 6.2.12 <ul style="list-style-type: none"> <li>Note on the build error of existing RTOS C++ project</li> </ul>                                                                                                                                                                                                                                            |
| 2.96 | Jul.20.22  | 8           | Update chapter 2.1 to add new device support RX660                                                                                                                                                                                                                                                                                                                                      |
|      |            | 15-17       | Create chapter 2.3 with new supported features <ul style="list-style-type: none"> <li>Default BSP revision is updated to 7.20</li> <li>New device RX660 has been supported</li> <li>Board feature update</li> <li>Output only initialization API feature has been improved to support individual configuration</li> </ul>                                                               |

| Rev. | Date      | Description |                                                                                                                                                                                                                                                                                                   |
|------|-----------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |           | Page        | Summary                                                                                                                                                                                                                                                                                           |
| 2.96 | Jul.20.22 |             | <ul style="list-style-type: none"> <li>More boards are supported with software component recommend feature</li> <li>Board download feature has been supported by Standalone Smart Configurator</li> </ul>                                                                                         |
|      |           | 18-19       | Create chapter 3.1 with correction of issues and limitations                                                                                                                                                                                                                                      |
|      |           | 20-23       | Create chapter 3.2 with specification changes                                                                                                                                                                                                                                                     |
|      |           | 31          | Remove limitation 5.2.5 and 5.2.6 as they are fixed <ul style="list-style-type: none"> <li>Note on section address issue when configuring bank mode to dual mode</li> <li>Note on the function pin SS12# when using RX140 32 pin packages</li> </ul>                                              |
|      |           | 32          | Add a new limitation as 5.2.5 <ul style="list-style-type: none"> <li>Note on the board download feature for Standalone Smart Configurator</li> </ul>                                                                                                                                              |
|      |           | 35          | Remove caution note below as it has been supported by updating generated codes <ul style="list-style-type: none"> <li>Note on SCR.TE bit setting sequence in SCI Clock Synchronous Mode and SCI Asynchronous Mode</li> </ul>                                                                      |
| 2.97 | Oct.20.22 | 15-17       | Create chapter 2.3 with new supported features <ul style="list-style-type: none"> <li>Raw value codes generation for Code Generator components</li> <li>Developer Assistance feature support</li> <li>RX board feature update</li> <li>IAR workbench files output feature support</li> </ul>      |
|      |           | 18-19       | Create chapter 3.1 with correction of issues and limitations                                                                                                                                                                                                                                      |
|      |           | 20-21       | Create chapter 3.2 with specification changes                                                                                                                                                                                                                                                     |
|      |           | 27-29       | Remove limitation 5.2.1 and 5.2.5 as they are fixed <ul style="list-style-type: none"> <li>Note on the inconsistent code generation behavior issue when loading existing project with Port configuration</li> <li>Note on the board download feature for Standalone Smart Configurator</li> </ul> |
|      |           | 36-38       | Add two more caution notes as 6.2.12 and 6.2.13 <ul style="list-style-type: none"> <li>Note on the output of high impedance issue for TXDn pin</li> <li>Note on the include path update issue when renaming the component's configuration name</li> </ul>                                         |



# General Precautions in the Handling of Microprocessing Unit and Microcontroller Unit Products

The following usage notes are applicable to all Microprocessing unit and Microcontroller unit products from Renesas. For detailed usage notes on the products covered by this document, refer to the relevant sections of the document as well as any technical updates that have been issued for the products.

## 1. Precaution against Electrostatic Discharge (ESD)

A strong electrical field, when exposed to a CMOS device, can cause destruction of the gate oxide and ultimately degrade the device operation. Steps must be taken to stop the generation of static electricity as much as possible, and quickly dissipate it when it occurs. Environmental control must be adequate. When it is dry, a humidifier should be used. This is recommended to avoid using insulators that can easily build up static electricity. Semiconductor devices must be stored and transported in an anti-static container, static shielding bag or conductive material. All test and measurement tools including work benches and floors must be grounded. The operator must also be grounded using a wrist strap. Semiconductor devices must not be touched with bare hands. Similar precautions must be taken for printed circuit boards with mounted semiconductor devices.

## 2. Processing at power-on

The state of the product is undefined at the time when power is supplied. The states of internal circuits in the LSI are indeterminate and the states of register settings and pins are undefined at the time when power is supplied. In a finished product where the reset signal is applied to the external reset pin, the states of pins are not guaranteed from the time when power is supplied until the reset process is completed. In a similar way, the states of pins in a product that is reset by an on-chip power-on reset function are not guaranteed from the time when power is supplied until the power reaches the level at which resetting is specified.

## 3. Input of signal during power-off state

Do not input signals or an I/O pull-up power supply while the device is powered off. The current injection that results from input of such a signal or I/O pull-up power supply may cause malfunction and the abnormal current that passes in the device at this time may cause degradation of internal elements. Follow the guideline for input signal during power-off state as described in your product documentation.

## 4. Handling of unused pins

Handle unused pins in accordance with the directions given under handling of unused pins in the manual. The input pins of CMOS products are generally in the high-impedance state. In operation with an unused pin in the open-circuit state, extra electromagnetic noise is induced in the vicinity of the LSI, an associated shoot-through current flows internally, and malfunctions occur due to the false recognition of the pin state as an input signal become possible.

## 5. Clock signals

After applying a reset, only release the reset line after the operating clock signal becomes stable. When switching the clock signal during program execution, wait until the target clock signal is stabilized. When the clock signal is generated with an external resonator or from an external oscillator during a reset, ensure that the reset line is only released after full stabilization of the clock signal. Additionally, when switching to a clock signal produced with an external resonator or by an external oscillator while program execution is in progress, wait until the target clock signal is stable.

## 6. Voltage application waveform at input pin

Waveform distortion due to input noise or a reflected wave may cause malfunction. If the input of the CMOS device stays in the area between  $V_{IL}$  (Max.) and  $V_{IH}$  (Min.) due to noise, for example, the device may malfunction. Take care to prevent chattering noise from entering the device when the input level is fixed, and also in the transition period when the input level passes through the area between  $V_{IL}$  (Max.) and  $V_{IH}$  (Min.).

## 7. Prohibition of access to reserved addresses

Access to reserved addresses is prohibited. The reserved addresses are provided for possible future expansion of functions. Do not access these addresses as the correct operation of the LSI is not guaranteed.

## 8. Differences between products

Before changing from one product to another, for example to a product with a different part number, confirm that the change will not lead to problems. The characteristics of a microprocessing unit or microcontroller unit products in the same group but having a different part number might differ in terms of internal memory capacity, layout pattern, and other factors, which can affect the ranges of electrical characteristics, such as characteristic values, operating margins, immunity to noise, and amount of radiated noise. When changing to a product with a different part number, implement a system-evaluation test for the given product.

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