

Smart Configurator for RX V2.9.1

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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.

1.1 System requirements

The operating environment is as follows.

1.1.1 PC

- IBM PC/AT compatibles (Windows® 10, Windows® 8.1)
- Processor: 1 GHz or higher (must support hyper-threading, multi-core CPUs)
- Memory capacity: 4 GB or more recommended. Minimum requirement is 2 GB or more (64-bit Windows requires 4 GB or more)
- Hard disk capacity: 200 MB or more spare capacity
- Display: 1024 x 768 or higher resolution, 65,536 or more colors
- All other necessary software environments in addition to Windows OS: Java Runtime Environment

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 V2.9.1.

Table 2-1 Support Devices

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

Table 2-2 Support Devices

| Group (HW Manual number) | PIN | Device name |
|------------------------------------|------------|---|
| RX231 Group (R01UH0496EJ0110) | 48pin | R5F52315AxNE, R5F52316AxNE, R5F52317AxNE, R5F52318AxNE, R5F52315CxNE, R5F52316CxNE, R5F52317BxNE, R5F52318BxNE, R5F52315AxFL, R5F52316AxFL, R5F52317AxFL, R5F52318AxFL, R5F52315CxFL, R5F52316CxFL, R5F52317BxFL, R5F52318BxFL |
| | 64pin | R5F52315AxND, R5F52316AxND, R5F52317AxND, R5F52318AxND, R5F52315CxND, R5F52316CxND, R5F52317BxND, R5F52318BxND, R5F52315AxFM, R5F52316AxFM, R5F52317AxFM, R5F52318AxFM, R5F52315CxFM, R5F52316CxFM, R5F52317BxFM, R5F52318BxFM, R5F52315CxLF, R5F52316CxLF |
| | 100pin | R5F52315AxLA, R5F52316AxLA, R5F52317AxLA, R5F52318AxLA, R5F52315CxLA, R5F52316CxLA, R5F52317BxLA, R5F52318BxLA, R5F52315AxFP, R5F52316AxFP, R5F52317AxFP, R5F52318AxFP, R5F52315CxFP, R5F52316CxFP, R5F52317BxFP, R5F52318BxFP |
| RX23E-A Group (R01UH0801EJ0100) | 40pin | R5F523E5AxNF, R5F523E6AxNF, R5F523E5SxNF, R5F523E6SxNF |
| | 48pin | R5F523E5AxFL, R5F523E6AxFL, R5F523E5SxFL, R5F523E6SxFL |
| RX23T Group (R01UH0520EJ0110) | 48pin | R5F523T3AxFL, R5F523T5AxFL |
| | 52pin | R5F523T5AxFD, R5F523T3AxFD |
| | 64pin | R5F523T5AxFM, R5F523T3AxFM |
| RX23W Group (R01UH0823EJ0100) | 56pin | R5F523W8BxNG, R5F523W8AxNG, R5F523W7BxNG, R5F523W7AxNG |
| | 83pin | R5F523W8CxLN, R5F523W8DxLN |
| | 85pin | R5F523W7AxBL, R5F523W8AxBL, R5F523W8BxBL, R5F523W7BxBL |
| RX24T Group (R01UH0576EJ0200) | 64pin | R5F524TAAxFM, R5F524T8AxFM, R5F524TAAxFK, R5F524T8AxFK |
| | 80pin | R5F524TAAxFF, R5F524T8AxFF, R5F524TAAxFN, R5F524T8AxFN |
| | 100pin | R5F524TCAxFP, R5F524T8AxFP, R5F524TBAxFP, R5F524TEAxFP, R5F524TAAxFP |
| RX24U Group (R01UH0658EJ0100) | 100pin | R5F524UEAxFP, R5F524UCAxFP, R5F524UBAxFP |
| | 144pin | R5F524UEAxFB, R5F524UBAxFB, R5F524UCAxFB |
| RX64M Group (R01UH0377EJ0110) | 100pin | R5F564MFCxFP, R5F564MFCxLJ, R5F564MFDxFP, R5F564MFDxLJ, R5F564MGCxFP, R5F564MGCxLJ, R5F564MGDxFP, R5F564MGDxLJ, R5F564MJCxFP, R5F564MJCxLJ, R5F564MJDxFP, R5F564MJDxLJ, R5F564MLCxFP, R5F564MLCxLJ, R5F564MLDxFP, R5F564MLDxLJ |
| | 144/145pin | R5F564MFCxFB, R5F564MFCxLK, R5F564MFDxFB, R5F564MFDxLK, R5F564MGCxFB, R5F564MGCxLK, R5F564MGDxFB, R5F564MGDxLK, R5F564MJCxFB, R5F564MJCxLK, R5F564MJDxFB, R5F564MJDxLK, R5F564MLCxFB, R5F564MLCxLK, R5F564MLDxFB, R5F564MLDxLK |
| | 176/177pin | R5F564MFDxFC, R5F564MFDxBG, R5F564MFDxLC, R5F564MFCxFC, R5F564MFCxBG, R5F564MFCxLC, R5F564MGDxFC, R5F564MGDxBG, R5F564MGDxLC, R5F564MGCxFC, R5F564MGCxBG, R5F564MGCxLC, R5F564MJDxFC, R5F564MJDxBG, R5F564MJDxLC, R5F564MJCxFC, R5F564MJCxBG, R5F564MJCxLC, R5F564MLDxFC, R5F564MLDxBG, R5F564MLDxLC, R5F564MLCxFC, R5F564MLCxBG, R5F564MLCxLC |

Table 2-3 Support Devices

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

Table 2-4 Support Devices

| Group (HW Manual number) | PIN | Device name |
|----------------------------------|------------|---|
| RX66T Group (R01UH0749EJ0100) | 64pin | R5F566TAAxFM, R5F566TAEExDFM, R5F566TEAxFM, R5F566TEExFM |
| | 80pin | R5F566TAAxFF, R5F566TAEExFF, R5F566TEAxFF, R5F566TEExFF, R5F566TAAxFN, R5F566TAEExFN, R5F566TEAxFN, R5F566TEExFN |
| | 100pin | R5F566TKCxFP, R5F566TAEExFP, R5F566TFFxFP, R5F566TFCxFP, R5F566TFExFP, R5F566TFBxFP, R5F566TFAxFP, R5F566TABxFP, R5F566TAFxFP, R5F566TEFxFP, R5F566TKFxFP, R5F566TKGxFP, R5F566TKAxFP, R5F566TKEExFP, R5F566TKBxFP, R5F566TEBxFP, R5F566TEExFP, R5F566TEAxFP, R5F566TAAxFP, R5F566TFGxFP |
| | 112pin | R5F566TAAxFH, R5F566TAEExFH, R5F566TEExFH, R5F566TEAxFH |
| | 144pin | R5F566TKCxFB, R5F566TFGxFB, R5F566TFCxFB, R5F566TKGxFB |
| RX71M Group (R01UH0493EJ0110) | 100pin | R5F571MLCxFP, R5F571MLDxFP, R5F571MLGxFP, R5F571MLHxFP, R5F571MJCxFP, R5F571MJDxFP, R5F571MJGxFP, R5F571MJHxFP, R5F571MGCxFP, R5F571MGDxFP, R5F571MGGxFP, R5F571MGHxFP, R5F571MFCxFP, R5F571MFDxFP, R5F571MFGxFP, R5F571MFHxFP, R5F571MLCxLJ, R5F571MLDxLJ, R5F571MLGxLJ, R5F571MLHxLJ, R5F571MJCxLJ, R5F571MJDxLJ, R5F571MJGxLJ, R5F571MJHxLJ, R5F571MGCxLJ, R5F571MGDxLJ, R5F571MGGxLJ, R5F571MGHxLJ, R5F571MFCxLJ, R5F571MFDxLJ, R5F571MFGxLJ, R5F571MFHxLJ |
| | 144/145pin | R5F571MLCxLK, R5F571MLDxLK, R5F571MLGxLK, R5F571MLHxLK, R5F571MJCxLK, R5F571MJDxLK, R5F571MJGxLK, R5F571MJHxLK, R5F571MGCxLK, R5F571MGDxLK, R5F571MGGxLK, R5F571MGHxLK, R5F571MFCxLK, R5F571MFDxLK, R5F571MFGxLK, R5F571MFHxLK, R5F571MLCxLB, R5F571MLDxLB, R5F571MLGxLB, R5F571MLHxLB, R5F571MJCxLB, R5F571MJDxLB, R5F571MJGxLB, R5F571MJHxLB, R5F571MGCxLB, R5F571MGDxLB, R5F571MGGxLB, R5F571MGHxLB, R5F571MFCxLB, R5F571MFDxLB, R5F571MFGxLB, R5F571MFHxLB |
| | 176/177pin | R5F571MLCxFC, R5F571MLDxFC, R5F571MLGxFC, R5F571MLHxFC, R5F571MJCxFC, R5F571MJDxFC, R5F571MJGxFC, R5F571MJHxFC, R5F571MGCxFC, R5F571MGDxFC, R5F571MGGxFC, R5F571MGHxFC, R5F571MFCxFC, R5F571MFDxFC, R5F571MFGxFC, R5F571MFHxFC, R5F571MLCxLC, R5F571MLDxLC, R5F571MLGxLC, R5F571MLHxLC, R5F571MJCxLC, R5F571MJDxLC, R5F571MJGxLC, R5F571MJHxLC, R5F571MGCxLC, R5F571MGDxLC, R5F571MGGxLC, R5F571MGHxLC, R5F571MFCxLC, R5F571MFDxLC, R5F571MFGxLC, R5F571MFHxLC, R5F571MLCxBG, R5F571MLDxBG, R5F571MLGxBG, R5F571MLHxBG, R5F571MJCxBG, R5F571MJDxBG, R5F571MJGxBG, R5F571MJHxBG, R5F571MGCxBG, R5F571MGDxBG, R5F571MGGxBG, R5F571MGHxBG, R5F571MFCxBG, R5F571MFDxBG, R5F571MFGxBG, R5F571MFHxBG |
| RX72M Group (R01UH0804EJ0110) | 100pin | R5F572MDDxFP, R5F572MDHxFP, R5F572MNDxFP, R5F572MNHxFP |
| | 144pin | R5F572MDDxFB, R5F572MDHxFB, R5F572MNDxFB, R5F572MNHxFB |
| | 176pin | R5F572MNHxFC, R5F572MDDxBG, R5F572MNDxFC, R5F572MDHxBG, R5F572MDDxFC, R5F572MNHxBG, R5F572MNDxBG, R5F572MDHxFC |
| | 224pin | R5F572MDDxBD, R5F572MDHxBD, R5F572MNHxBD, R5F572MNDxBD |

Table 2-5 Support Devices

| Group (HW Manual number) | PIN | Device name |
|----------------------------------|--------|--|
| RX72N Group (R01UH0824EJ0100) | 100pin | R5F572NNDxFP, R5F572NNHxFP, R5F572NDDxFP, R5F572NDHxFP |
| | 144pin | R5F572NNDxFB, R5F572NNHxFB, R5F572NDDxFB, R5F572NDHxFB |
| | 145pin | R5F572NNDxLK, R5F572NNHxLK, R5F572NDDxLK, R5F572NDHxLK |
| | 176pin | R5F572NNDxFC, R5F572NNHxFC, R5F572NDDxFC, R5F572NDHxFC, R5F572NNDxBG, R5F572NNHxBG, R5F572NDDxBG, R5F572NDHxBG |
| | 224pin | R5F572NNDxBD, R5F572NNHxBD, R5F572NDDxBD, R5F572NDHxBD |
| RX72T Group (R01UH0803EJ0100) | 100pin | R5F572TKExFP, R5F572TFFxFP, R5F572TKFxFP, R5F572TFGxFP, R5F572TKCxFP, R5F572TFBxFP, R5F572TFExFP, R5F572TFCxFP, R5F572TFAxFP, R5F572TKAxFP, R5F572TKBxFP, R5F572TKGxFP |
| | 144pin | R5F572TKGxFB, R5F572TKCxFB, R5F572TFGxFB, R5F572TFCxFB |

2.2 Support Components List

Below is a list of Components supported by the Smart Configurator for RX V2.9.1.

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

✓ : Support, - : Non-support

| No | Components | Mode | RX110 | RX111 | RX113 | RX130 | RX13T | 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, 3 in Table 6-2

Note 2. Refer to No 4 in Table 6-2

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

✓: Support, -: Non-support

| No | Components | Mode | RX110 | RX111 | RX113 | RX130 | RX13T | 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 8 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 | 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 | 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 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | | 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, 3 in Table 6-2

Note 2. Refer to No 4 in Table 6-2

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

✓: Support, -: Non-support

| No | Components | Mode | RX64M | RX65N, RX651 | RX66N | RX66T | 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 8 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 | 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 BSP (Board Support Package) revision update

From Smart Configurator for RX V2.9.1, BSP rev5.64 is supported and will be added as default BSP when creating Smart Configurator project.

2.3.2 Toolbar icons update

From Smart Configurator for RX V2.9.1, bigger toolbar icons for "Generate Code" and "Generate Report" functions are applied as below.

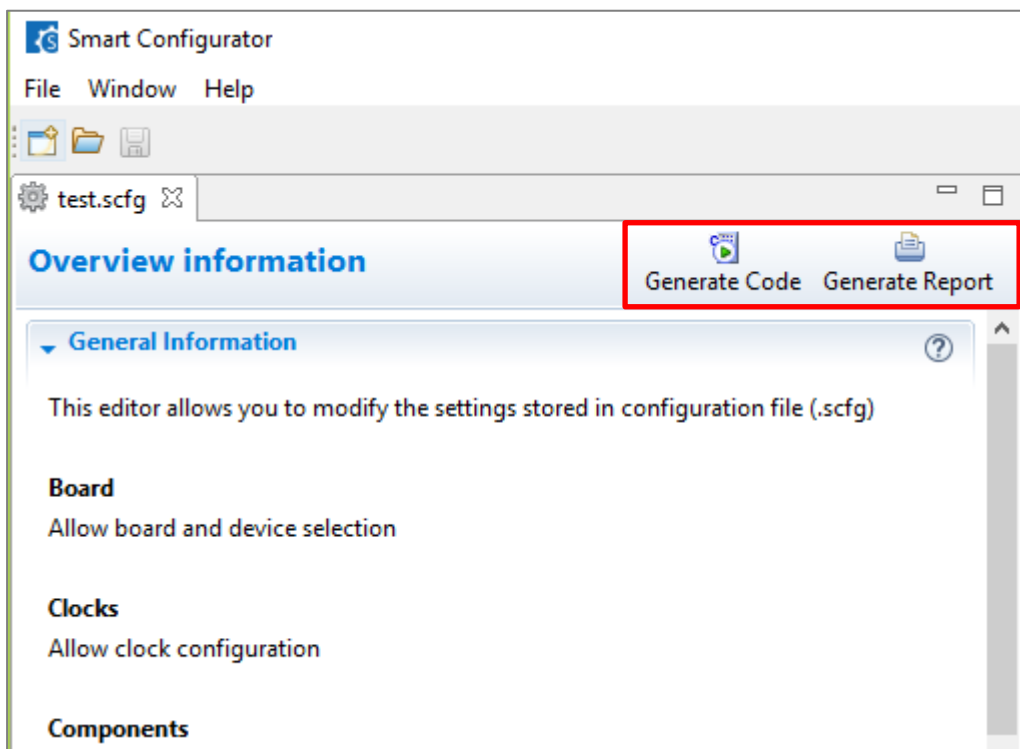


Figure 2-1: New icons for “Generate Code” and “Generate Report” functions

2.3.3 Software component version number has been added into report

From Smart Configurator for RX V2.9.1, software component version number has been added into the generated report, e.g. BSP (Board Support Package) component version number as below:



Figure 2-2: BSP software component version number in generated report

2.3.4 Generated source files' folder can be accessed from console window

From Smart Configurator for RX V2.9.1, the root folder path for the generated source files has been outputted to console window after code generation, and user can open this folder directly by just clicking its hyperlink.

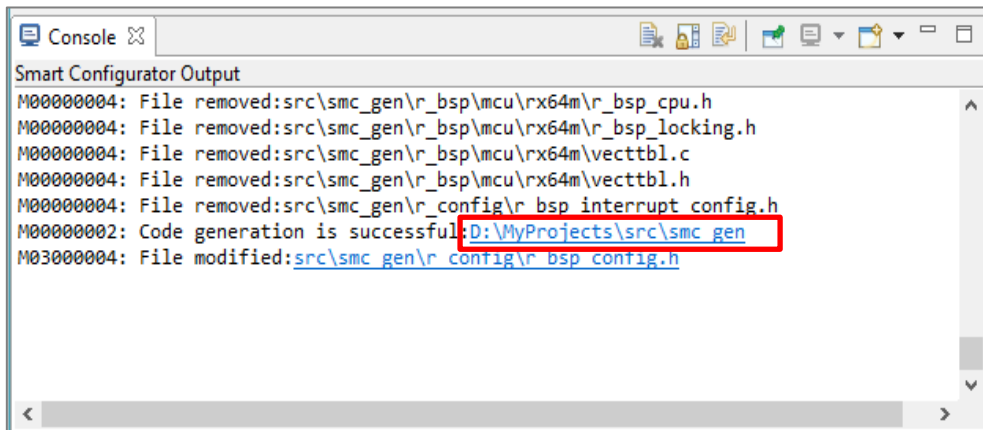


Figure 2-3: Root folder path for the generated source files

3. Changes

This chapter describes changes to the Smart Configurator for RX V2.9.1.

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 | RX230, RX231 | RX23E-A | RX23T | RX23W | RX24T, RX24U | Remarks |
|----|--|-------|-------|-------|-------|-------|--------------|---------|-------|-------|--------------|---------|
| 1 | Fixed the pin codes missing issue when using MTU components | - | - | - | - | ✓ | - | - | ✓ | - | ✓ | |
| 2 | Fixed the resource change issue when using MTU Normal Mode Timer Component | - | - | - | - | - | - | - | - | - | - | |
| 3 | Fixed the device change issue when using BSP rev5.63 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 4 | Fixed the generated codes' folder issue for FreeRTOS (with IoT libraries) project | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 5 | Fixed the interrupt migration report status issue when performing the device change without opening Smart Configurator GUI | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 6 | Fixed the configurable issue for PH7 when using PORT component | ✓ | ✓ | ✓ | - | - | - | - | - | - | - | |

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

| No | Description | RX64M | RX65N, RX651 | RX66N | RX66T | RX71M | RX72M | RX72N | RX72T | Remarks |
|----|--|-------|--------------|-------|-------|-------|-------|-------|-------|---------|
| 1 | Fixed the pin codes missing issue when using MTU components | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 2 | Fixed the resource change issue when using MTU Normal Mode Timer Component | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | - | |
| 3 | Fixed the device change issue when using BSP rev5.63 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 4 | Fixed the generated codes' folder issue for FreeRTOS (with IoT libraries) project | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 5 | Fixed the interrupt migration report status issue when performing the device change without opening Smart Configurator GUI | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 6 | Fixed the configurable issue for PH7 when using PORT component | - | - | - | - | - | - | - | - | |

3.1.1 Fixed the pin codes missing issue when using MTU components

When using MTU components as below, if set MTIOC1A pin as external clock source input for MTU0/MTU5 counter, MTIOC1A pin codes will not be generated out as expected in the MTU0/MTU5 initialization codes, this issue has been fixed from SC for RX V2.9.1

- Normal Mode Timer component
- PWM Mode Timer component
- Dead-time Compensation Counter component
- Phase Counting Mode Timer component

3.1.2 Fixed the resource change issue when using MTU Normal Mode Timer Component

When using MTU Normal Mode Timer Component, If a resource change is performed from any channel with synchronous mode setting to MTU8, synchronous mode setting will be ported over to MTU8 and corresponding codes will be generated out, this is unexpected because MTU8 doesn't support synchronous mode setting, this issue has been fixed from SC for RX V2.9.1

3.1.3 Fixed the device change issue when using BSP rev5.63

When using BSP rev5.63 and perform device change operation, the configuration nodes for all existing components will be removed from software component tree after device change if the source device's SCI channels are more than the destination device's SCI channels, this issue has been fixed from SC for RX V2.9.1

3.1.4 Fixed the generated codes' folder issue for FreeRTOS (with IoT libraries) project

When using Smart Configurator for FreeRTOS (with IoT libraries) project, if user changes the source codes generated location to another new path on the Overview page and clicks "Generate code" button, the previous generated codes' folder (e.g. 'smc_gen') is not removed automatically, user needs to delete it manually to avoid build errors, this issue has been fixed from SC for RX V2.9.1

3.1.5 Fixed the interrupt migration report status issue when performing the device change without opening Smart Configurator GUI

When performing the device change without opening Smart Configurator GUI, interrupt migration status is incorrect in the migration report for interrupts that are available on source device but not available on the destination device, this issue has been fixed from SC for RX V2.9.1

3.1.6 Fixed the configurable issue for PH7 when using PORT component

When using PORT component, the PH7 is still configurable for input usage on the PORT GUI, but it is not allowed according to technical update TN-RX*-A180A/E (please find more details from Chapter 4 table list), this issue has been fixed from SC for RX V2.9.1

3.2 Specification changes

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

o: Applicable, /: Not Applicable

| No | Description | RX110 | RX111 | RX113 | RX130 | RX13T | RX230, RX231 | RX23E-A | RX23T | RX23W | RX24T, RX24U | Remarks |
|----|---|-------|-------|-------|-------|-------|--------------|---------|-------|-------|--------------|---------|
| 1 | Improved the Import and Export function layouts for the Board and Pins pages | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 2 | Drop-down list items of the “Function” selection combo box for the New Component dialog are tidied up | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |

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

o: Applicable, /: Not Applicable

| No | Description | RX64M | RX65N, RX651 | RX66N | RX66T | RX71M | RX72M | RX72N | RX72T | Remarks |
|----|---|-------|--------------|-------|-------|-------|-------|-------|-------|---------|
| 1 | Improved the Import and Export function layouts for the Board and Pins pages | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 2 | Drop-down list items of the “Function” selection combo box for the New Component dialog are tidied up | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |

3.2.1 Improved the Import and Export function layouts for the Board and Pins pages

From Smart Configurator RX V2.9.1, layouts have been improved for the Import and Export function on the Board and Pins pages.

- An Import Board settings dialog box has been added after clicking the “Import” button on Board page

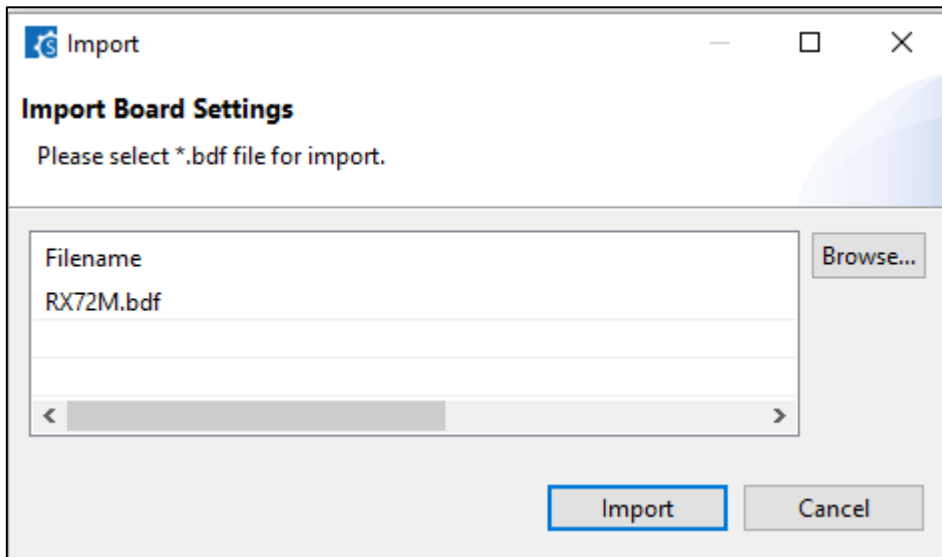


Figure 3-1: New Import Board Settings dialog for Board page

- An Import Pin assignments dialog box has been added after clicking the “Import” button on Pins page

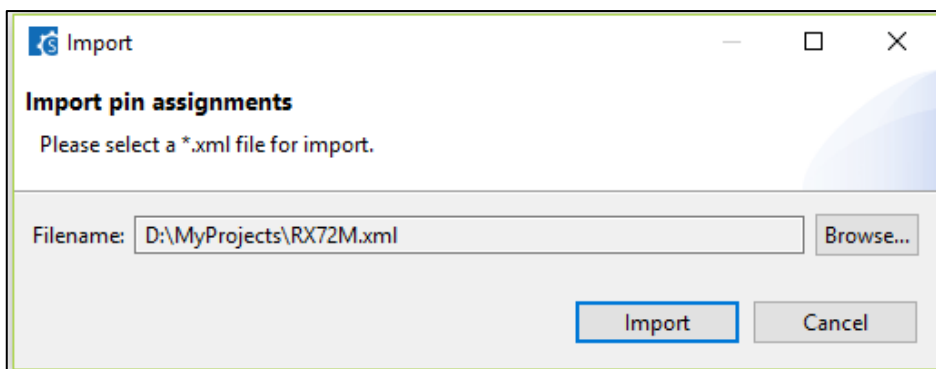


Figure 3-2: New Import Pin Assignments dialog for Pins page

- An Export Pin assignments dialog box has been added after clicking the “Export” button on Pins page

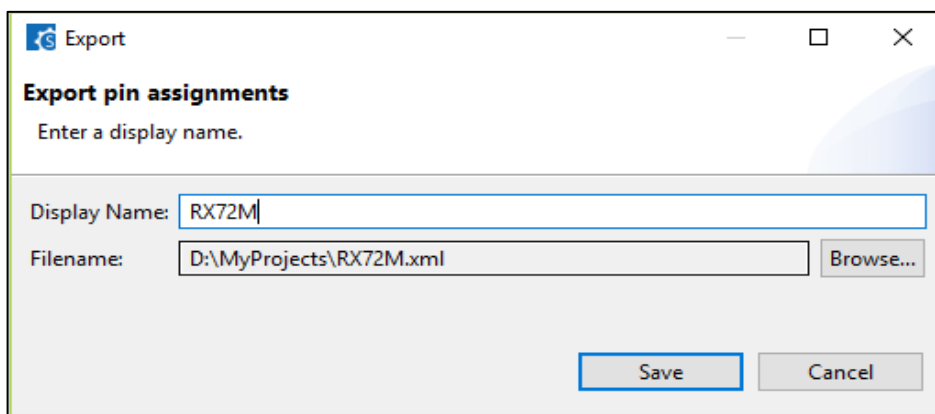


Figure 3-3: New Export Pin Assignments dialog for Pins page

3.2.2 Drop-down list items of the “Function” selection combo box for the New Component dialog are tidied up

From Smart Configurator RX V2.9.1, drop-down list items of the “Function” selection combo box for the New Component dialog are tidied up, some unused categories (e.g. “Generic” and “Graphic” categories) and unnecessary category information have been removed.

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 https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx | RX130, RX64M, RX651, RX65N | V1.3.0 |
| Apr. 1, 2018 | R20TS0294 | 1. When using the bus for peripheral functions https://www.renesas.com/document/tnn/notes-cs-smart-configurator-rx-e-studio-smart-configurator-plug | RX230, RX231 | V1.4.0 |
| Oct. 01, 2018 | R20TS0351 | 1. Setting TPU0 channel of PWM Mode Timer https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-0 | RX65N, RX651, 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 https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-1 | RX66T | V2.1.0 |
| Apr.16, 2019 | R20TS0425 | 1. When using the I2C bus interface in master mode https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-2 | RX110, RX111, RX113, RX130, RX230, RX231, RX23T, RX24T, RX24U, RX64M, RX651, RX65N, RX71M | V2.2.0 |
| Jun.01, 2019 | R20TS0434 | 1. When using self-diagnosis function of 12-bit A/D converter in Single Scan Mode 2. When using Serial Peripheral Interface clock synchronous mode in slave transmit 3. When using I2C Bus Interface with Fast-mode Plus enabled https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-3 | RX230, RX231, RX66T, RX72T, RX64M, RX651, RX65N, RX71M | V2.2.0 |

| Issue date | Document No. | Description | Applicable MCUs | Fixed version |
|---------------|--------------|---|---|---------------|
| Jun.16, 2019 | R20TS0436 | 1. When using general PWM timer https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-4 | RX66T, RX72T | V2.2.0 |
| Aug.01, 2019 | R20TS0466 | 1. When using the NACK reception transfer suspension function on the I ² C bus interface https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-5 | 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 https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-6 | 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) 2. When using calendar mode API to set counter value on RTC component 3. When using window B for comparison function on S12AD Continuous Scan Mode component 4. When using double trigger mode on S12AD Single Scan Mode component https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-7 | RX64M, RX651, RX65N, RX66T, RX71M, RX72M, RX72T | V2.4.0 |
| Feb. 01, 2020 | R20TS0546 | 1. When using the PLL frequency synthesizer of the clock https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-8 | RX64M, RX651, RX65N, RX66T, RX71M, RX72T | V2.5.0 |

| Issue date | Document No. | Description | Applicable MCUs | Fixed version |
|---------------|-----------------|--|---|---------------|
| Mar. 16, 2020 | R20TS0555 | <p>1. When using the TGIC7 and TGID7 interrupts in Normal Mode Timer or PWM Mode Timer</p> <p>2. When creating a project with RX24T 64-pin FK packages</p> <p>3. When using compare level of AN109 in Single Scan Mode S12AD</p> <p>https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-9</p> | RX24T, RX24U, RX71M | V2.5.0 |
| Apr.03, 2020 | TN-RX*-A0222 | <p>Errata to RX72N Group User's Manual: Hardware Rev.1.00</p> <p>https://www.renesas.com/document/tcu/errata-rx72n-group-users-manual-hardware-rev100</p> | RX72N | V2.5.0 |
| May.16, 2020 | R20TS0579 | <p>1. When using Stop API in Continuous Scan Mode DSAD and Single Scan Mode DSAD components</p> <p>https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-10</p> | RX23E-A | V2.6.0 |
| Jun.16, 2020 | R20TS0591 | <p>1. When using Data Transfer Controller (DTC) component and making configuration for its vector base address</p> <p>2. When using SCI/SCIF Asynchronous Mode component and making configuration for its bit-rate</p> <p>3. When using AN007 or AN107 as analog input pins in S12AD components</p> <p>https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-11</p> | RX230, RX231, RX651, RX65N, RX66T, RX72T | V2.6.0 |
| Aug. 21, 2020 | TN-RX*-A0234A/E | <p>Errata to the RX113 Group User's Manual: Hardware Rev.1.10</p> <p>https://www.renesas.com/document/tcu/errata-rx113-group-users-manual-hardware</p> | RX113 | V2.8.0 |
| Sep. 01, 2020 | R20TS0611 | <p>When using PWM Mode component and making configuration with MTU channel 1 and 2</p> <p>https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-13</p> | 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) https://www.renesas.com/document/tcu/notes-transmit-data-empty-interrupt-when-fifo-use-serial-communications-interface-sci | RX651, RX65N, RX66N, RX66T, RX72M, RX72N, RX72T | V2.7.0 |
| Oct. 01, 2020 | R20TS0623 | 1. When using “r_sci_rx” component and making pin configurations for RXD and TXD 2. When using “r_sci_rx” component, duplicate SCI11 channels are displayed in the Components configuration panel https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-12 | RX651, RX65N, RX66N, RX72M, RX72N | V2.7.0 |
| Dec. 01, 2020 | R20TS0638 | 1. Note on setting timer operation period in Motor component. 2. When loading project with port configuration created in V2.5.0 or version before into V2.6.0 version onwards https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-14 | RX13T, RX23T, RX24T, RX24U, RX651, RX65N, RX66T, RX72T, RX72M | V2.8.0 |
| Aug. 29, 2017 | TN-RX*-A180A/E | Restriction for the PH7/XCIN Pin https://www.renesas.com/document/tcu/restriction-ph7xcin-pin | RX110, RX111, RX113 | V2.9.1 |

5. Points for Limitation

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

5.1 List of Limitation

Table 5-1 List of Correction of issues/limitations (RX100, RX200 Family) ✓ : Applicable, -: Not Applicable

| No | Description | RX110 | RX111 | RX113 | RX130 | RX13T | RX230, RX231 | RX23E-A | RX23T | RX23W | RX24T, RX24U | Remarks |
|----|---|-------|-------|-------|-------|-------|--------------|---------|-------|-------|--------------|---------|
| 1 | Note on the inconsistent code generation behavior issue when loading existing project with Port configuration | ✓ | ✓ | ✓ | ✓ | - | ✓ | - | - | - | - | |
| 2 | Note on general I/O port direction issue on MCU package view when using Port Component | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 3 | Note on CLKOUT pin settings on the clock page | ✓ | ✓ | ✓ | ✓ | - | ✓ | - | - | - | - | |
| 4 | Note on the resource tree in the FIT component GUI configuration | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 5 | Note on address pin when using external bus | - | - | - | - | - | ✓ | - | - | ✓ | - | |
| 6 | Note on the FIT component pin configuration issue when changing version | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 7 | Note on the error icon display issue on the hardware resource tree when performing pin assignment with selected board | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 8 | Note on the generated code issue for PDR register when configuring multiplexed GPIO pins by PORT component | ✓ | ✓ | - | ✓ | - | ✓ | - | - | - | - | |

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

✓ : Applicable, -: Not

| No | Description | RX64M | RX65N, RX651 | RX66N | RX66T | RX71M | RX72M | RX72N | RX72T | Remarks |
|----|---|-------|--------------|-------|-------|-------|-------|-------|-------|---------|
| 1 | Note on the inconsistent code generation behavior issue when loading existing project with Port configuration | ✓ | ✓ | - | ✓ | ✓ | - | - | ✓ | |
| 2 | Note on the general I/O port direction issue on MCU package view when using Port Component | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 3 | Note on CLKOUT pin settings issue on the clock page | - | - | - | - | - | - | - | - | |
| 4 | Note on the resource tree in the FIT component GUI configuration | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 5 | Note on address pin when using external bus | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 6 | Note on the FIT component pin configuration issue when changing version | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 7 | Note on the error icon display issue on the hardware resource tree when performing pin assignment with selected board | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 8 | Note on the generated code issue for PDR register when configuring multiplexed GPIO pins by PORT component | - | - | - | - | - | - | - | - | |

5.2 Details of Limitation

5.2.1 Note on 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 an impact on customer application and it will be fixed from next release

5.2.2 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

5.2.3 Note on CLKOUT pin settings issue on the clock page

The CLKOUT pin settings are not supported on the clock page although they are configurable according to Hardware User Manual

5.2.4 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 |
| # Received data match function for chann | Not |
| Resources | |
| SCI | |

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

5.2.5 Note on address bus when using external bus

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

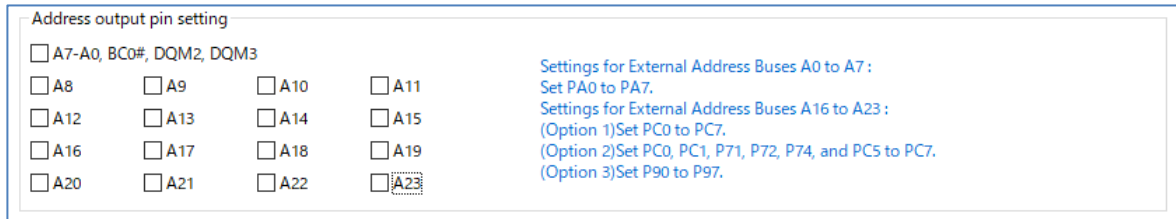


Figure 5-2 “Address output pin setting” value should be disabled

5.2.6 Note on the FIT component pin configuration issue when changing version

When using FIT component "Change Version..." function, the assigned pins for FIT component may be changed to another port, please take note to re-check pin assignment of FIT component after version change, this issue will be fixed from next release

5.2.7 Note on the error icon display issue on the hardware resource tree when performing pin assignment with selected board

When performing pin assignment with selected board, if the pin assignment is not supported by selected board, by default a warning icon should be displayed besides the pin assignment and also on the corresponding hardware resource tree note, but an error icon is shown on the hardware resource tree node instead which is unexpected, this issue will be fixed from next release

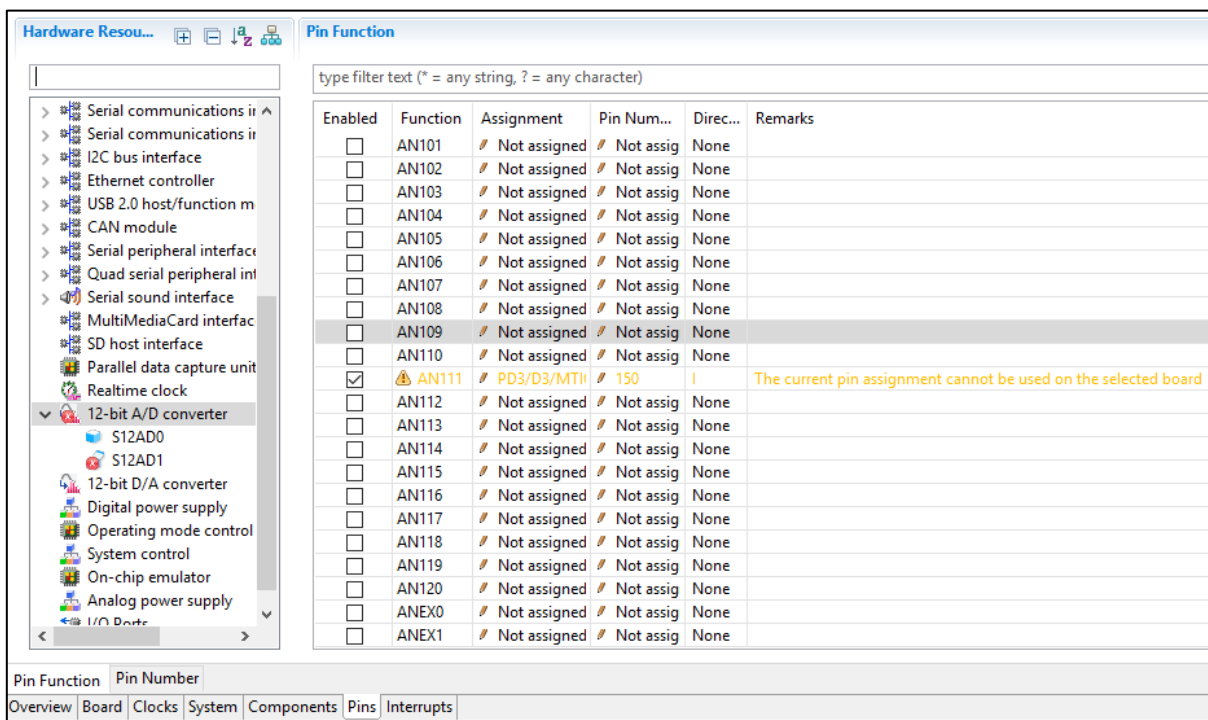


Figure 5-3 Error is displayed on the hardware resource tree for pin assignment

5.2.8 Note on the generated code issue for PDR register when configuring multiplexed GPIO pins by PORT component

When using PORT component and configuring the below GPIO pins as input, the generated code for PDR register is wrong, the bit 0 value should be set to 0 instead of 1, this issue will be fixed from next release

- PC0
- PC1
- PC2
- PC3

6. Points for Caution

This section describes points for caution regarding the Smart Configurator for RX V2.9.1. Please refer to a document of each module about a caution of a FIT module.

6.1 List of Caution

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

✓ : Applicable, - : Not Applicable

| No | Description | RX110 | RX111 | RX113 | RX130 | RX13T | RX230, RX231 | RX23E-A | RX23T | RX23W | RX24T, RX24U | Remarks |
|----|---|-------|-------|-------|-------|-------|--------------|---------|-------|-------|--------------|----------------------------|
| 1 | Note on configuring GPT interrupt | - | - | - | - | - | - | - | - | - | ✓ | |
| 2 | Note on SCR.TE bit setting sequence in SCI Clock Synchronous Mode and SCI Clock Asynchronous Mode | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 3 | Note on using only reception in SCI Clock Synchronous Mode | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 4 | Notes on using high transfer speed in SCIF Synchronous Mode | - | - | - | - | - | - | - | - | - | - | |
| 5 | Note on device change functionality | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 6 | Note on using Smart Configurator for RTOS project | - | - | - | ✓ | - | ✓ | - | - | - | - | Refer to FreeRTOS packages |
| 7 | Note on using Smart Configurator for GCC project in e ² studio 7.4.0 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | ✓ | |
| 8 | Note on using Data Transfer Controller | - | - | - | - | ✓ | - | ✓ | - | - | - | |
| 9 | Note on Ports setting when using S12AD components | ✓ | - | ✓ | ✓ | - | - | - | - | ✓ | - | |
| 10 | Note on section build warning when using FIT components | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 11 | Note on clock frequency usage | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 12 | Note on C++ project support in CS+ and IAR | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |

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

✓ : Applicable, -: Not Applicable

| No | Description | RX64M | RX65N, RX651 | RX66N | RX66T | RX71M | RX72M | RX72N | RX72T | Remarks |
|----|---|-------|--------------|-------|-------|-------|-------|-------|-------|----------------------------|
| 1 | Note on configuring GPT interrupt | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 2 | Note on SCR.TE bit setting sequence in SCI Clock Synchronous Mode and SCI Clock Asynchronous Mode | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 3 | Note on using only reception in SCI Clock Synchronous Mode | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 4 | Notes on using high transfer speed in SCIF Synchronous Mode | ✓ | - | - | - | ✓ | - | - | - | |
| 5 | Note on device change functionality | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 6 | Note on using Smart Configurator for RTOS project | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Refer to FreeRTOS packages |
| 7 | Note on using Smart Configurator for GCC project in e ² studio 7.4.0 | ✓ | ✓ | ✓ | ✓ | ✓ | - | ✓ | ✓ | |
| 8 | Note on using Data Transfer Controller | - | ✓ | ✓ | - | - | ✓ | ✓ | - | |
| 9 | Note on Ports setting when using S12AD components | ✓ | ✓ | ✓ | - | ✓ | ✓ | ✓ | - | |
| 10 | Note on section build warning when using FIT components | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 11 | Note on clock frequency usage | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 12 | Note on C++ project support in CS+ and IAR | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |

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.

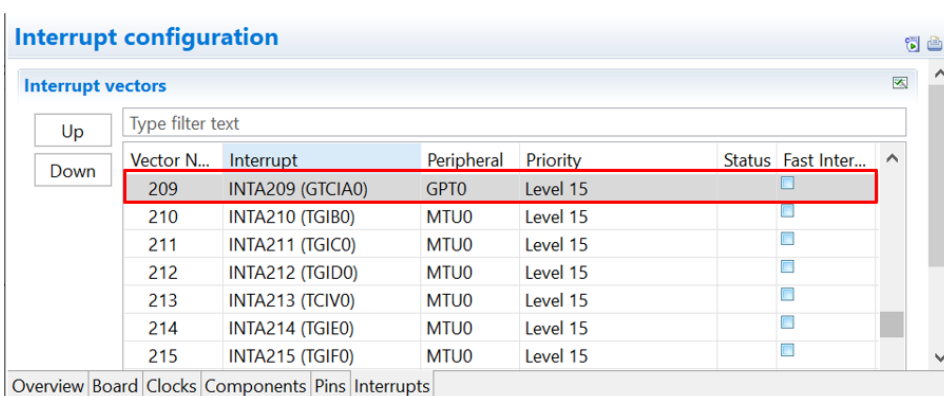
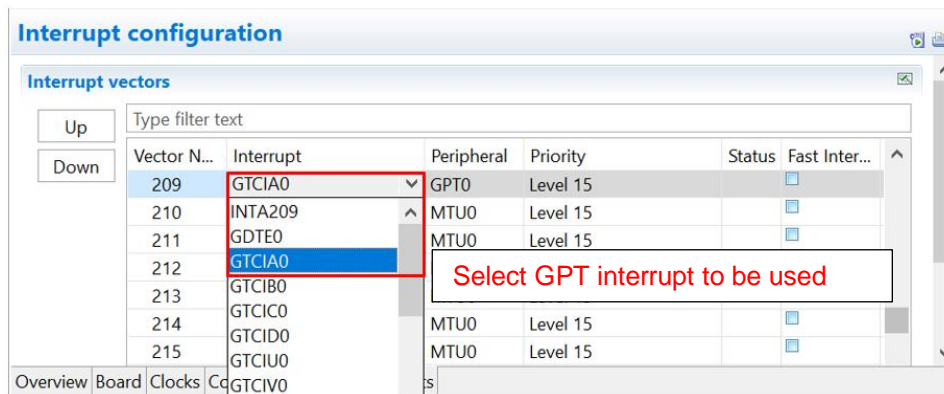
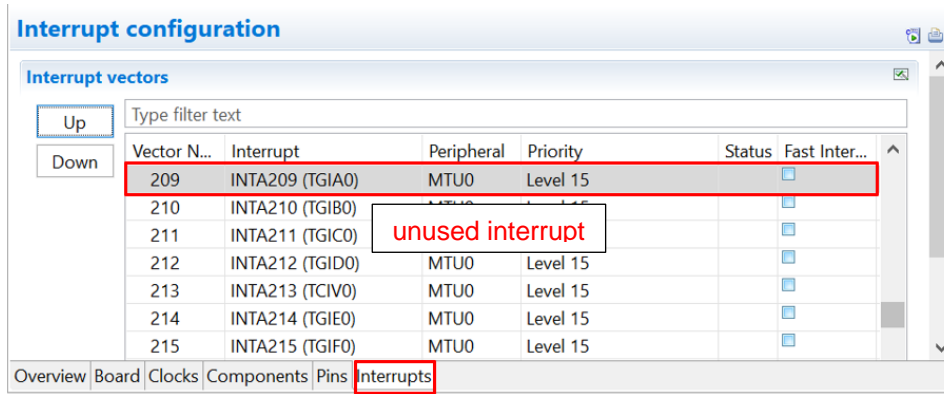


Figure 6-1 “Address output pin setting” value should be disable

6.2.2 Note on SCR.TE bit setting sequence in SCI Clock Synchronous Mode and SCI Clock Asynchronous Mode

Sequence of setting SCR.TE bit does not follow the usage note in User’s Manual: Hardware. Instead, SCR.TE bit is set to 1 after changing the pin function to TXDn. Output of TXDn pin becomes high impedance. Please connect a pull-up resistor to the TXDn line, prevent the TXDn line from becoming high impedance.

6.2.3 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.

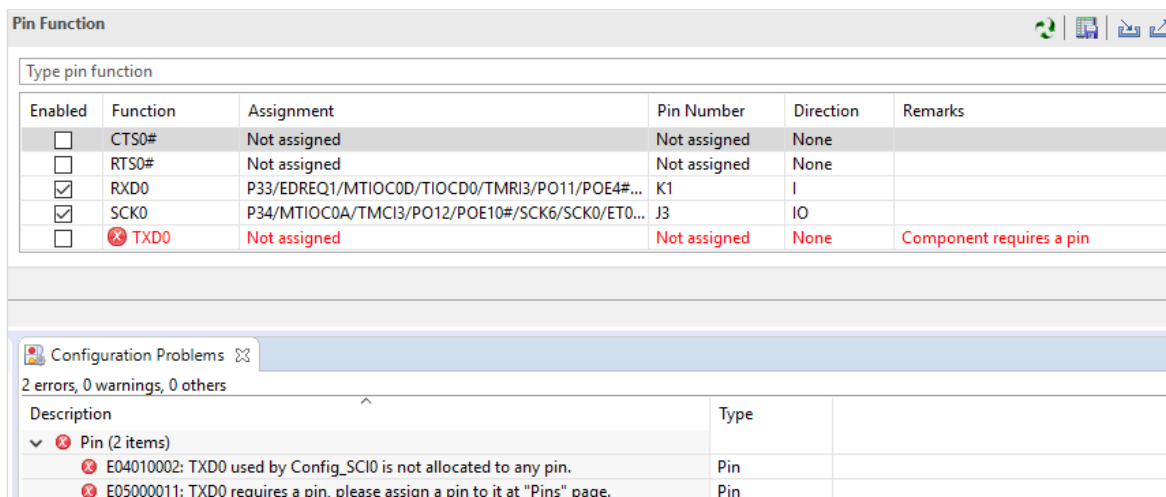


Figure 6-2 Ignore warnings when TXDn pin is disabled (Example with TXD0)

6.2.4 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:

$$(Reception\ Data\ Size) = n * (Reception\ FIFO\ threshold) \quad (n=1,2,3,...)$$

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.

6.2.5 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.

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

When using Smart Configurator for RTOS project, only FIT modules are supported. From Smart Configurator for RX V2.2.0, all FIT modules are displayed in "Add component" dialog by default.

6.2.7 Note on configuring GPT interrupts

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.

6.2.8 Note on using Data Transfer Controller

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

6.2.9 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 P90 to P92 |
| RX130, RX23W | P40 to P47 |
| RX64M, RX651, RX65N, RX66N, RX71M, RX72M, RX72N | P00 to P02, P03, P05, P07 P40 to P47 P90 to P93 PD0 to PD7 PE0 to PE7 |

6.2.10 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.

6.2.11 Note on clock frequency usage

In the generated code for Smart Configurator, it is not suggested to change the clock settings codes after initialization. If clock settings/frequencies are needed to change, please change them through clock page GUI and re-generate codes after that, should not modify the generated codes related to CGC directly.

6.2.12 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 ();
}
```

Revision History

| Rev. | Date | Description | |
|------|-----------|-------------|---|
| | | Page | Summary |
| 2.20 | Jul.22.19 | 33 | Create new |
| 2.21 | Oct.08.19 | 44 | Update to Rev.2.2.1 |
| 2.30 | Nov.05.19 | 27 | Update to Rev.2.3.0 |
| 2.40 | Jan.20.20 | 35 | Update to Rev.2.4.0 |
| 2.50 | Apr.20.20 | 42 | Update to Rev.2.5.0 |
| 2.60 | Jul.20.20 | 48 | Update to Rev.2.6.0 |
| 2.70 | Oct.20.20 | 39 | Update to Rev.2.7.0 |
| 2.71 | Oct.20.20 | 32-33 | Add 3 limitations. <ul style="list-style-type: none"> ● Note on generated codes issue when using Motor component ● Note on write protection issue for pin function control registers when using Motor component ● Note on pin conflict error issue when using r_sci_rx FIT component |
| 2.80 | Jan.20.21 | 42 | Update to Rev.2.8.0 |
| 2.81 | Mar.22.21 | 31 | Update to Rev.2.8.1 |
| 2.91 | Apr.13.21 | 38 | Update to Rev.2.9.1 |

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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