Smart Configurator for RX V2.8.1

Release Note

R20UT4487ES0281
Rev.2.81
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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.

Contents

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 V2.8.1.

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, R5F566TAExDFM, R5F566TEAxFM, R5F566TEExFM
	80pin	R5F566TAAxFF, R5F566TAExFF, R5F566TEAxFF, R5F566TEExFF, R5F566TAAxFN, R5F566TAExFN, R5F566TEAxFN, R5F566TEExFN
	100pin	R5F566TKCxFP, R5F566TAExFP, R5F566TFFxFP, R5F566TFCxFP, R5F566TFExFP, R5F566TFBxFP, R5F566TFAxFP, R5F566TABxFP, R5F566TAFxFP, R5F566TEFxFP, R5F566TKFxFP, R5F566TKGxFP, R5F566TKAxFP, R5F566TKExFP, R5F566TKBxFP, R5F566TEBxFP, R5F566TEExFP, R5F566TEAxFP, R5F566TAAxFP, R5F566TFGxFP
	112pin	R5F566TAAxFH, R5F566TAExFH, 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, R5F571MLCxFB, R5F571MLDxFB, R5F571MLGxFB, R5F571MLHxFB, R5F571MJCxFB, R5F571MJDxFB, R5F571MJGxFB, R5F571MJHxFB, R5F571MGCxFB, R5F571MGDxFB, R5F571MGGxFB, R5F571MGHxFB, R5F571MFCxFB, R5F571MFDxFB, R5F571MFGxFB, R5F571MFHxFB
	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 V2.8.1.

Table 2-6 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
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 Addition of supported devices

From Smart Configurator for RX V2.8.1, the following RX72M group devices are supported by Smart Configurator Code Generator, and UM version support for RX72M is updated from V1.0 to V1.1.

- R5F572MNDxFB
- R5F572MNHxFB
- R5F572MDDxFB
- R5F572MDHxFB
- R5F572MNDxFP
- R5F572MNHxFP
- R5F572MDDxFP
- R5F572MDHxFP

2.3.2 Smart Configurator help update

From Smart Configurator for RX V2.8.1, new URL has been applied for the following documents that you can view from Help.

- Release notes
- Tool news
- API manual

3. Changes

This chapter describes changes to the Smart Configurator for RX V2.8.1

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 RTCMCLK frequency input range issue when using RTC 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 RTCMCLK frequency input range issue when using RTC component	-	-	-	✓	-	-	-	-	

3.1.1 Fixed the RTCMCLK frequency input range issue when using RTC component Correction of issues/limitations

When using RTC component and set main clock as its clock source, the required input range for main clock frequency is wrong, original range is 8MHz~16MHz, now it has been corrected to 1.024KHz ~ 16.777216MHz from SC for RX V2.8.1

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
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

Issue date	Document No.	Description	Applicable MCUs	Fixed version
Aug.01, 2019	R20TS0466	1. When using the NACK reception transfer suspension function on the I²C 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	1. When using the TGIC7 and TGID7 interrupts in Normal Mode Timer or PWM Mode Timer 2. When creating a project with RX24T 64-pin FK packages 3. When using compare level of AN109 in Single Scan Mode S12AD https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-9	RX24T, RX24U, RX71M	V2.5.0
Apr.03, 2020	TN−RX*-A0222	Errata to RX72N Group User's Manual: Hardware Rev.1.00 https://www.renesas.com/document/tcu/errata-rx72n-group-users-manual-hardware-rev100	RX72N	V2.5.0
May.16, 2020	R20TS0579	1. When using Stop API in Continuous Scan Mode DSAD and Single Scan Mode DSAD components https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-10	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 2. When using SCI/SCIF Asynchronous Mode component and making configuration for its bit-rate 3. When using AN007 or AN107 as analog input pins in S12AD components https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-11	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 https://www.renesas.com/document/tcu/errata-rx113-group-users-manual-hardware	RX113	V2.8.0
Sep. 01, 2020	R20TS0611	When using PWM Mode component and making configuration with MTU channel 1 and 2 https://www.renesas.com/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-13	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

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 the interrupt migration status issue after changing device without opening Smart Configurator GUI	-	-	-	-	-	✓	-	-	-	-	
4	Note on CLKOUT pin settings on the clock page	✓	✓	✓	✓	-	✓	-	-	-	-	
5	Note on the resource tree in the FIT component GUI configuration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6	Note on address pin when using external bus	-	-	-	-	-	✓	-	-	✓	-	
7	Note on the FIT component pin configuration issue when changing version	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
8	Note on the device change operation when using BSP 5.63	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
9	Note on the generated codes' folder issue for FreeRTOS (with IoT libraries) project	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Table 5-2 List of Limitation (RX600, RX700 family) **✓: Applicable, -: Not Applicable**

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 the interrupt migration status issue after changing device without opening Smart Configurator GUI	✓	✓	✓	✓	✓	✓	✓	✓	
4	Note on CLKOUT pin settings issue on the clock page	-	-	-	-	-	-	-	-	
5	Note on the resource tree in the FIT component GUI configuration	✓	✓	✓	✓	✓	✓	✓	✓	
6	Note on address pin when using external bus	✓	✓	✓	✓	✓	✓	✓	✓	
7	Note on the FIT component pin configuration issue when changing version	✓	✓	✓	✓	✓	✓	✓	✓	
8	Note on the device change operation when using BSP 5.63	✓	✓	✓	✓	✓	✓	✓	✓	
9	Note on the generated codes' folder issue for FreeRTOS (with IoT libraries) project	✓	✓	✓	✓	✓	✓	✓	✓	

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 on impact on customer application and it will be fixed from next milestone

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 the interrupt migration status issue after changing device 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 and not available on the destination device, this issue will be fixed from next release

5.2.4 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

5.2.5 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

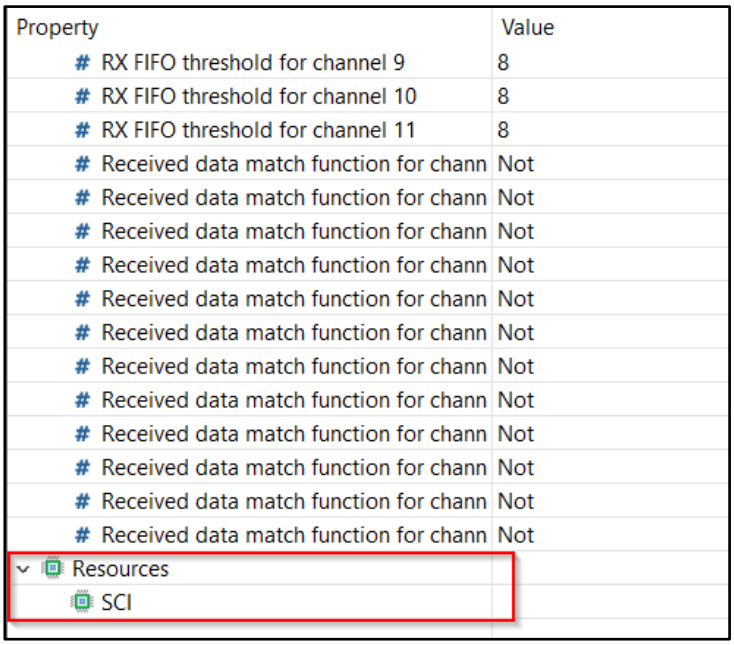

Figure 5-1: Resource tree without any pin in FIT component GUI

5.2.6 Note on address bus when using external bus

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

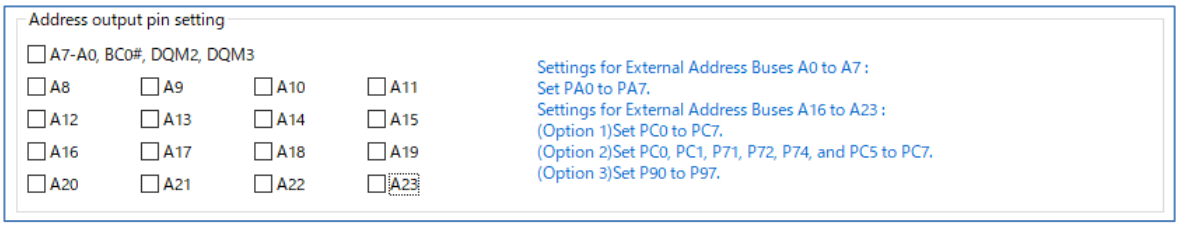

Figure 5-2 "Address output pin setting" value should be disable

5.2.7 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.

5.2.8 Note on the device change operation when using BSP 5.63

When using BSP 5.63 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, e.g. device change from RX64M to RX111. Below are the workarounds and this issue will be fixed from next release.

- Non-RTOS project, please use the BSP 5.62 instead of BSP 5.63 if device change is required.
- RTOS project, please don't perform device change operation.

Device	Channels	Channel Counts
RX23T	1, 5	2
RX24T	1, 5, 6	3
RX13T	1, 5, 12	3
RX110/1	1, 5, 12	3
RX23W	1, 5, 8, 12	4
RX23EA	1, 5, 6, 12	4
RX230/1	0, 1, 5, 6, 12	5
RX130	0, 1, 5, 6, 12	5
RX24U	1, 5, 6, 8, 9, 11	6
RX66T/RX72T	1, 5, 6, 8, 9, 11, 12	7
RX113	0, 1, 2, 5, 6, 8, 9, 12	8
RX64M/RX71M	0, 1, 2, 3, 4, 5, 6, 7, 12	9
RX65N/1	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	13
RX66N/RX72N	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	13
RX72M	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	13

Table 5-3 **SCI channel numbers on each RX devices**

5.2.9 Note on 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.

6. Points for Caution

This section describes points for caution regarding the Smart Configurator for RX V2.8.1. 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.

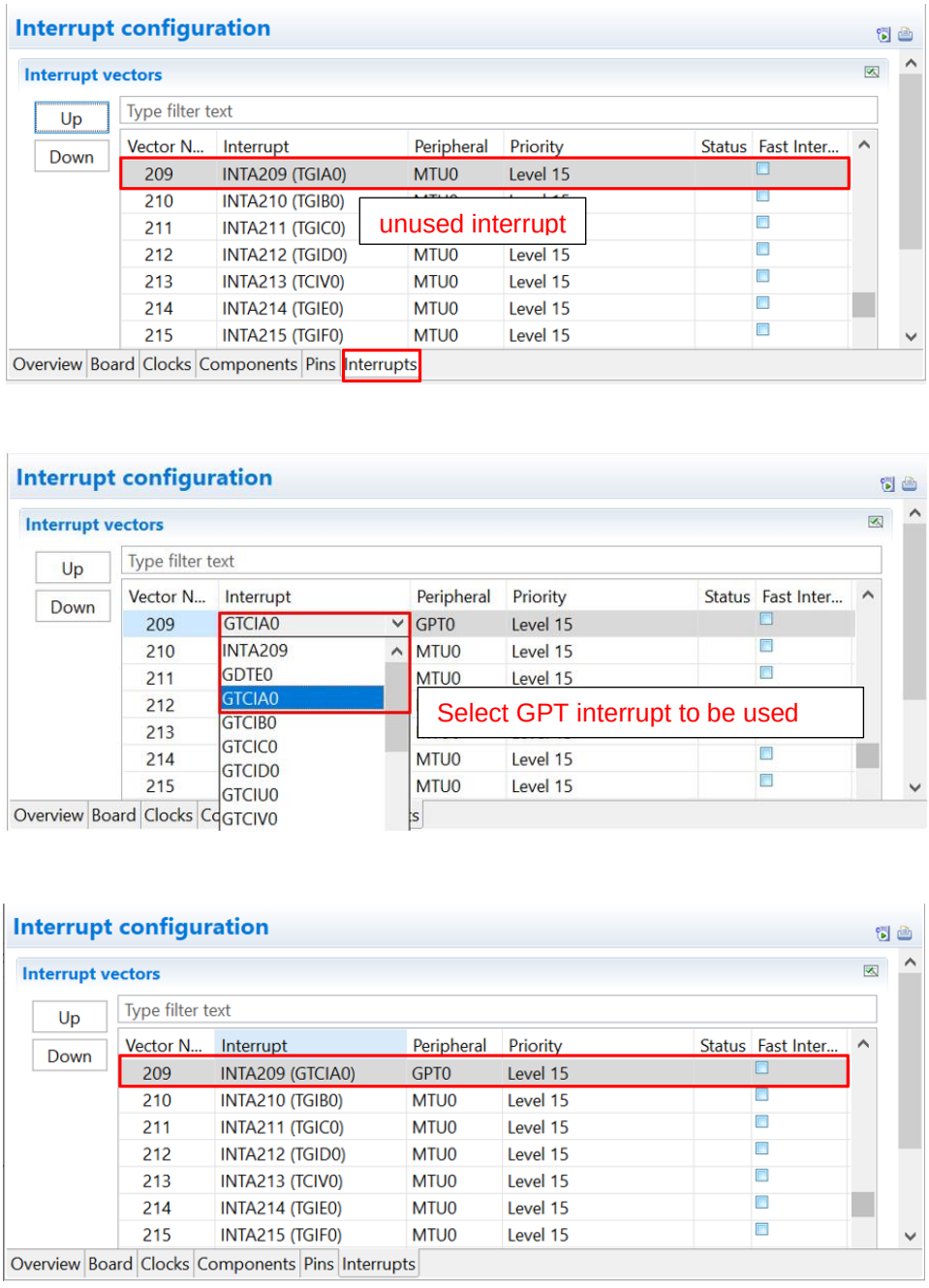

Figure 6-1 “Address output pin setting” value should be disable

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.

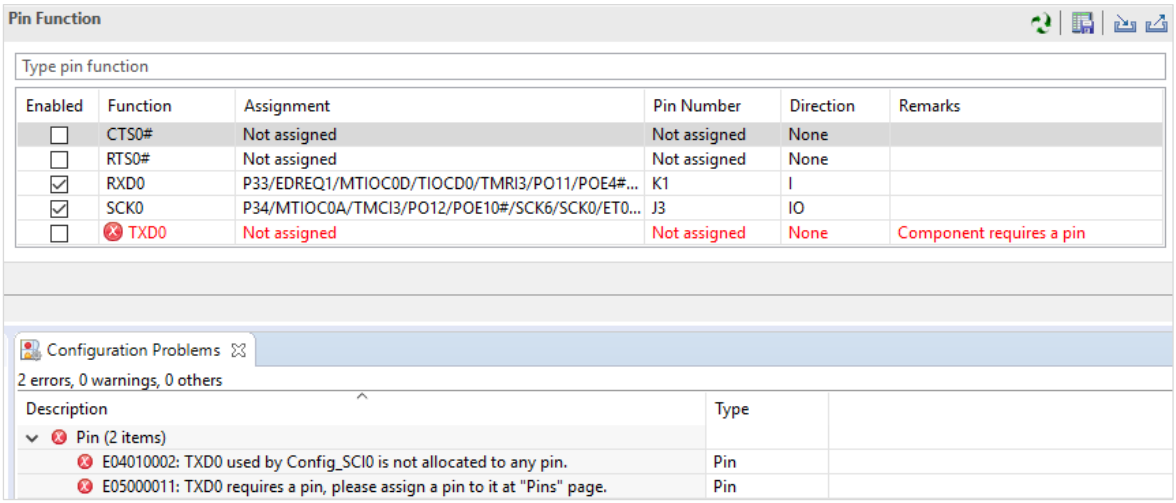

Figure 6-2 Ignore warnings when TXDn pin is disabled (Example with TXD0)

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) (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. ● 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

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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