Smart Configurator for RX V2.10.0

Release Note

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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) *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

Note 1: 32 bits Window OS will not be supported from 2022-01 onwards

2. Support List

2.1 Support Devices List

Below is a list of devices supported by the Smart Configurator for RX V2.10.0.

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
RX671 Group (R01UH0899EJ0100)	48pin	R5F5671EHxNE, R5F5671EDxNE, R5F5671CHxNE, R5F5671CDxNE, R5F56719HxNE, R5F56719DxNE
	64pin	R5F5671EHxFM, R5F5671EDxFM, R5F5671CHxFM, R5F5671CDxFM, R5F56719HxFM, R5F56719DxFM, R5F5671EHxBP, R5F5671EDxBP, R5F5671CHxBP, R5F5671CDxBP, R5F56719HxBP, R5F56719DxBP
	100pin	R5F5671EHxFP, R5F5671EDxFP, R5F5671CHxFP, R5F5671CDxFP, R5F56719HxFP, R5F56719DxFP, R5F5671EHxLJ, R5F5671EDxLJ, R5F5671CHxLJ, R5F5671CDxLJ, R5F56719HxLJ, R5F56719DxLJ
	144pin	R5F5671EHxFB, R5F5671EDxFB, R5F5671CHxFB, R5F5671CDxFB, R5F56719HxFB, R5F56719DxFB
	145pin	R5F5671EHxLE, R5F5671EDxLE, R5F5671CHxLE, R5F5671CDxLE, R5F56719HxLE, R5F56719DxLE, R5F5671EHxLK, R5F5671EDxLK, R5F5671CHxLK, R5F5671CDxLK, R5F56719HxLK, R5F56719DxLK

2.2 Support Components List

Below is a list of Components supported by the Smart Configurator for RX V2.10.0.

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	RX671	RX71M	RX72M	RX72N	RX72T	Remarks
1	8-Bit Timer	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	CRC Calculator	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3	D/A Converter	-	✓	✓	✓	✓	–	✓	✓	✓	✓	
4	DMA Controller	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5	I2C Slave Mode	I2C mode	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		SMBus mode	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6	I2C Master Mode	I2C mode	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		SMBus mode	✓	✓	✓	✓	✓	✓	✓	✓	✓	
7	LCD Controller	-	-	-	-	-	-	-	-	-	-	
8	PWM Mode Timer	PWM mode 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		PWM mode 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	
9	SCI/SCIF Clock Synchronous Mode	Transmission	✓	✓	✓	✓	✓	✓	✓	✓	✓	Note 1, 2
		Reception	✓	✓	✓	✓	✓	✓	✓	✓	✓	Note 1, 2
		Transmission/Reception	✓	✓	✓	✓	✓	✓	✓	✓	✓	Note 1, 2
10	SCI/SCIF Asynchronous Mode	Transmission	✓	✓	✓	✓	✓	✓	✓	✓	✓	Note 1
		Reception	✓	✓	✓	✓	✓	✓	✓	✓	✓	Note 1
		Transmission/Reception	✓	✓	✓	✓	✓	✓	✓	✓	✓	Note 1
		Multi-processor Transmission	✓	✓	✓	✓	✓	✓	✓	✓	✓	Note 1
		Multi-processor Reception	✓	✓	✓	✓	✓	✓	✓	✓	✓	Note 1
		Multi-processor Transmission/Reception	✓	✓	✓	✓	✓	✓	✓	✓	✓	Note 1
11	SPI Clock Synchronous Mode	Slave transmit/receive	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Slave transmit only	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Master transmit/receive	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Master transmit only	✓	✓	✓	✓	✓	✓	✓	✓	✓	
12	SPI Operation Mode	Slave transmit/receive	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Slave transmit only	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Slave receive only	–	–	–	–	✓	–	–	–	–	
		Master transmit/receive	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Master transmit only	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Multi-master transmit/receive	✓	✓	✓	✓	✓	✓	✓	✓	✓	
		Multi-master transmit only	✓	✓	✓	✓	✓	✓	✓	✓	✓	
13	Event Link Controller	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	
14	Watchdog Timer	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	
15	Clock Frequency Accuracy Measurement Circuit	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	

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

Note 3. Refer to No 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	RX671	RX71M	RX72M	RX72N	RX72T	Remarks
38	Voltage Detection Circuit	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	
39	Delta-Sigma Modulator Interface	Master	-	-	-	-	-	-	✓	-	-	
		Slave	-	-	-	-	-	-	✓	-	-	
40	Single Scan Mode DSAD	-	-	-	-	-	-	-	-	-	-	
41	Continuous Scan Mode DSAD	-	-	-	-	-	-	-	-	-	-	
42	Analog Front End	-	-	-	-	-	-	-	-	-	-	
43	Motor	3-Phase Brushless DC Motor	-	-	-	✓	-	-	✓	-	✓	
		2-Phase Stepping Motor (Fast Decay)	-	-	-	✓	-	-	✓	-	✓	
		2-Phase Stepping Motor (Slow Decay)	-	-	-	✓	-	-	✓	-	✓	

2.3 New support

2.3.1 BSP (Board Support Package) revision update

From Smart Configurator for RX V2.10.0, BSP rev6.11 is supported and will be added as default BSP when creating Smart Configurator project.

2.3.2 Missing FIT module is downloadable from “Component” page

From Smart Configurator for RX V2.10.0, download functionality is available for downloading any missing FIT modules that cannot be found in the specified FIT module folder (e.g. /FITModules/ folder as default), this may occur when projects with FIT module configurations are imported, and the related FIT modules are unavailable in current specified FIT module folder.

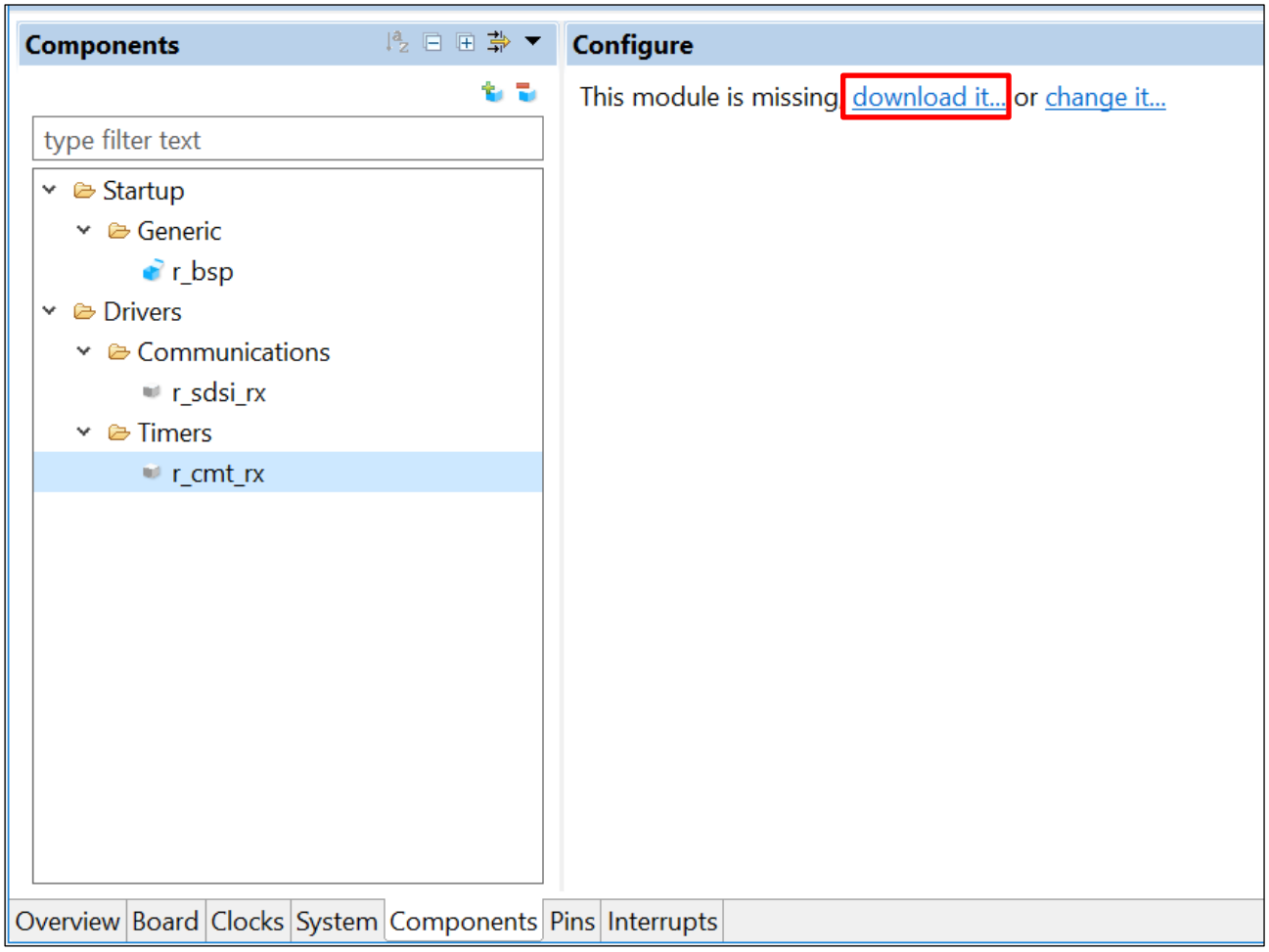

Figure 2-1: Download feature for missing FIT modules

2.3.3 Code Generator components have supported RTOS projects

From Smart Configurator for RX V2.10.0, Code Generator components have supported the following three types of RTOS projects under e2 studio both for CCRX and GCC compilers: FreeRTOS kernel project, FreeRTOS IoT project and Azure RTOS project. Code Generator components can be added from 'New Component' dialog after creating RTOS project with Smart Configurator.

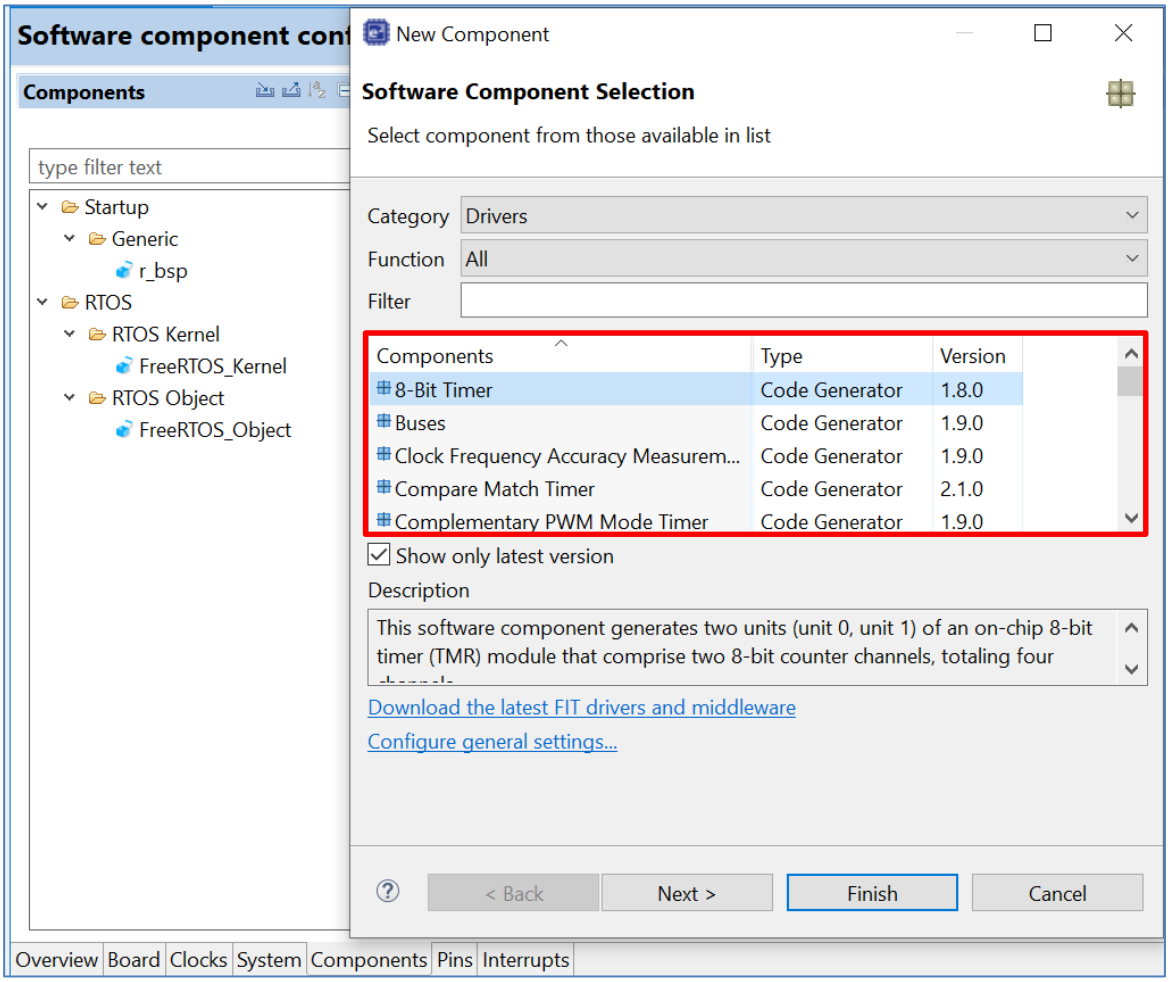

Figure 2-2: CG Components are available from “New Component” dialog (e.g. FreeRTOS kernel project)

2.3.4 A new column labelled as “Short Name” is added into “New Component” dialog

From Smart Configurator for RX V2.10.0, the "New Component" dialog has added additional column labelled as "Short name" to separate the full descriptive string of the FIT component from the shorter component name as used in the generated source.

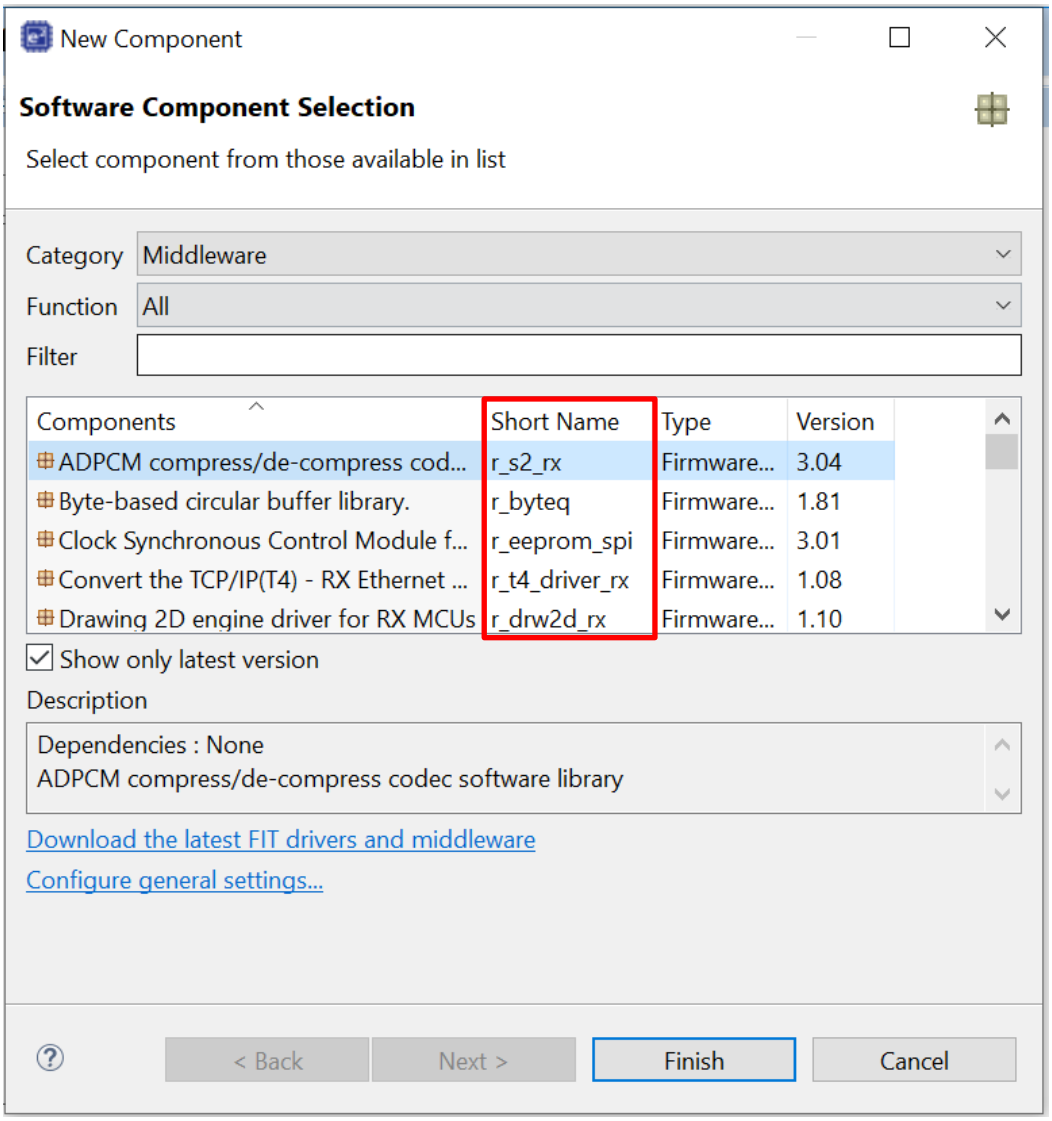

Figure 2-3: New “Short Name” column for FIT component

2.3.5 Generated file encode type is editable from “Preferences” dialog

From Smart Configurator for RX V2.10.0, the encode type is editable through the "Preference" dialog on the Standalone RCP version, user can input the preferred encode type for the generated files if it is not listed out in the combo box.

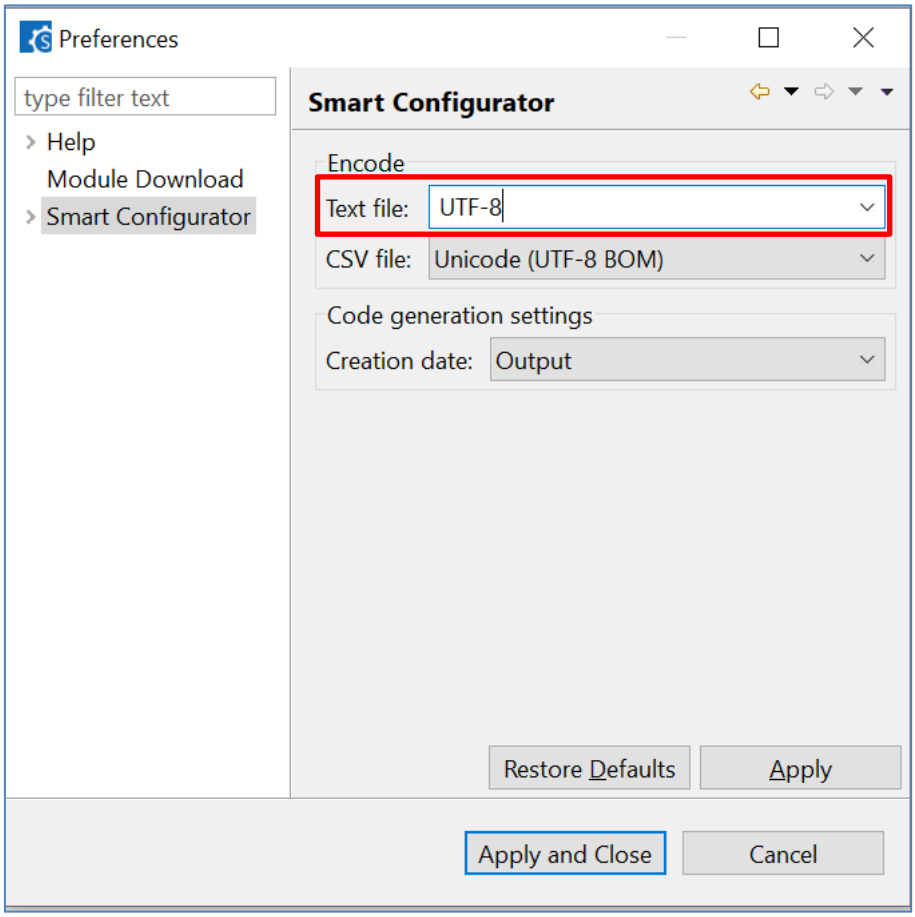

Figure 2-4: Generated file encode type is editable from “Preferences” dialog

2.3.6 A warning dialog is added for reminding user to save the project before code generation

From Smart Configurator for RX V2.10.0, if project settings are not saved before code generation, a warning dialog will pop up to remind user to save the project, user can disable it to pop up by checking “Always save and generate without asking” checkbox.

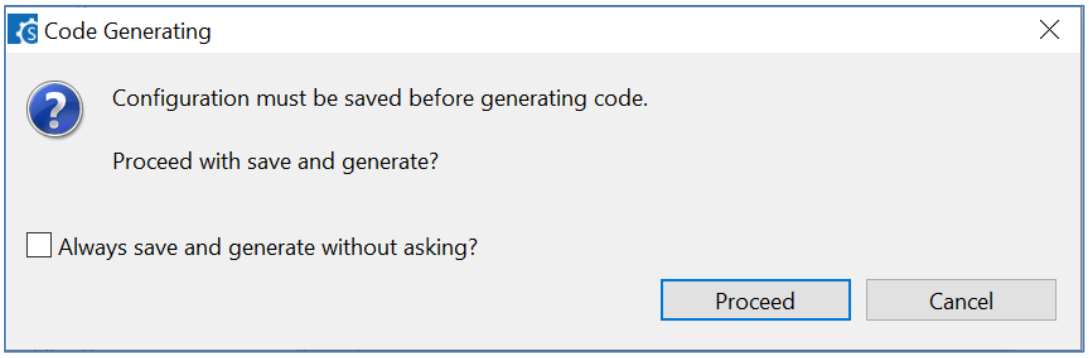

Figure 2-5: Warning dialog for reminding user to save the project before code generation

3. Changes

This chapter describes changes to the Smart Configurator for RX V2.10.0.

3.1 Correction of issues/limitations

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

No	Description	RX110	RX111	RX113	RX130	RX13T	RX230, RX231	RX23E-A	RX23T	RX23W	RX24T, RX24U	Remarks
1	Fixed the FIT components' section settings adding issue for GNURX project under e² studio	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	Fixed the FIT component pin configuration issue when changing version	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3	Fixed the generated code issue for PDR register when configuring multiplexed GPIO pins by PORT component	✓	✓	-	✓	-	✓	-	-	-	-	
4	Fixed the error icon display issue on the hardware resource tree when performing pin assignment with selected board	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5	Fixed the build settings update issue when using r_emWin_rx FIT component	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6	Fixed the GUI exception issue when using LPT component under Germany Window OS	-	-	-	✓	-	-	-	-	-	-	

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

No	Description	RX64M	RX65N, RX651	RX66N	RX66T	RX671	RX71M	RX72M	RX72N	RX72T	Remarks
1	Fixed the FIT components' section settings adding issue for GNURX project under e² studio	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	Fixed the FIT component pin configuration issue when changing version	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3	Fixed the generated code issue for PDR register when configuring multiplexed GPIO pins by PORT component	-	-	-	-	-	-	-	-	-	
4	Fixed the error icon display issue on the hardware resource tree when performing pin assignment with selected board	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5	Fixed the build settings update issue when using r_emWin_rx FIT component	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6	Fixed the GUI exception issue when using LPT component under Germany Window OS	-	-	-	-	-	-	-	-	-	

3.1.1 Fixed the FIT components' section settings adding issue for GNURX project under e² studio

When using FIT modules, section settings defined in the FIT xml will not automatically added into builder section after code generation for GNURX project under e² studio, this issue has been fixed from SC for RX V2.10.0

3.1.2 Fixed the FIT component pin configuration issue when changing version

When the "Change Version..." option is selected, the assigned pins for a FIT component may be changed to another port, this issue has been fixed from SC for RX V2.10.0

3.1.3 Fixed 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 should be set to value 0 instead of value 1, this issue has been fixed from SC for RX V2.10.0

- PC0
- PC1
- PC2
- PC3

3.1.4 Fixed 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 has been fixed from SC for RX V2.10.0

3.1.5 Fixed the build settings update issue when using r_emWin_rx FIT component

When using r_emWin_rx FIT component, although the build settings in the wizard page are set for "-nostuff=C", but these settings do not take effective on the actual built binaries, this issue has been fixed from SC RX V2.10.0

3.1.6 Fixed the GUI exception issue when using LPT component under Germany Window OS

When using LPT component under Germany Window OS, a GUI exception will occur immediately after adding LPT component, this issue has been fixed from SC for RX V2.10.0

3.2 Specification changes

Table 3-3 List of Specification changes (RX100, RX200 family) ○: Applicable, /: Not Applicable

No	Description	RX110	RX111	RX113	RX130	RX13T	RX230, RX231	RX23E-A	RX23T	RX23W	RX24T, RX24U	Remarks
1	PM bit value is masked off when using RTC component generated API to get the value of hour value	✓	✓	✓	✓	–	✓	–	–	✓	–	
2	The tooltip on the “Component” page has been improved for the case an "i" overlay is displayed.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3	Clock codes are removed from R_CGC_Create () API	–	–	–	–	–	–	–	–	–	–	
4	A new GUI restriction for interrupt priority level setting is applied to EEI and TXI interrupts when using I2C master mode component	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5	The software component download link text has been renamed	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6	The MTU pins used for the U, V and W phases can be enabled/disabled when using Complimentary PWM Mode component	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	
7	Improvement on the generated codes for Remote Control Signal Receiver component	–	–	–	✓	–	–	–	–	–	–	

Table 3-4 List of Specification changes (RX600, RX700 family) ○: Applicable, /: Not Applicable

No	Description	RX64M	RX65N, RX651	RX66N	RX66T	RX671	RX71M	RX72M	RX72N	RX72T	Remarks
1	PM bit value is masked off when using RTC component generated API to get the value of hour	✓	✓	✓	–	✓	✓	✓	✓	–	
2	The tooltip on the “Component” page has been improved for the case an "i" overlay is displayed.	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3	Clock codes are removed from R_CGC_Create () API	–	–	–	–	✓	–	–	–	–	
4	A new GUI restriction for interrupt priority level setting is applied to EEI and TXI interrupts when using I2C master mode component	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5	The software component download link text has been renamed	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6	The MTU pins used for the U, V and W phases can be enabled/disabled when using Complimentary PWM Mode component	✓	✓	✓	✓	✓	✓	✓	✓	✓	
7	Improvement on the generated codes for Remote Control Signal Receiver component	–	–	–	–	✓	–	–	–	–	

3.2.1 PM bit value is masked off when using RTC component generated API to get the value of hour

From Smart Configurator RX V2.10.0, when using RTC component with calendar mode, PM bit value is masked off for the generated API which is used for getting the calendar counter value under 24-hour mode, this PM bit is redundant for calculating the value of hour under 24-hour mode.

```
void R_Config_RTC_Get_CalendarCounterValue(rtc_calendarcounter_value_t * const counter_read_val)
{

    /* Enable RTC CUP interrupt */
    RTC.RCR1.BYTE |= _02_RTC_CARRY_INT_ENABLE;
    do
    {
        ICU.PIBR6.BYTE = 0x02U;
        /* Read counter registers */
        counter_read_val->rseccnt = RTC.RSECCNT.BYTE;
        counter_read_val->rmincnt = RTC.RMINCNT.BYTE;
        counter_read_val->rhrcnt = RTC.RHRCNT.BYTE & 0x3FU;
        counter_read_val->rwkcnt = RTC.RWKCNT.BYTE;
        counter_read_val->rdaycnt = RTC.RDAYCNT.BYTE;
        counter_read_val->rmoncnt = RTC.RMONCNT.BYTE;
        counter_read_val->ryrcnt = RTC.RYRCNT.WORD;
    } while ((ICU.PIBR6.BYTE & 0x02U) != 0U);

    /* Disable RTC CUP interrupt */
    RTC.RCR1.BYTE &= (~_02_RTC_CARRY_INT_ENABLE);

}
```

Figure 3-1: PM bit value is marked off for getting calendar counter value API

3.2.2 The tooltip on the “Component” page has been improved for the case an "i" overlay is displayed.

From Smart Configurator RX V2.10.0, the tooltip will show the functionality available for the selected component. (i.e. whether a component version up is available, or whether sample projects are available for download).

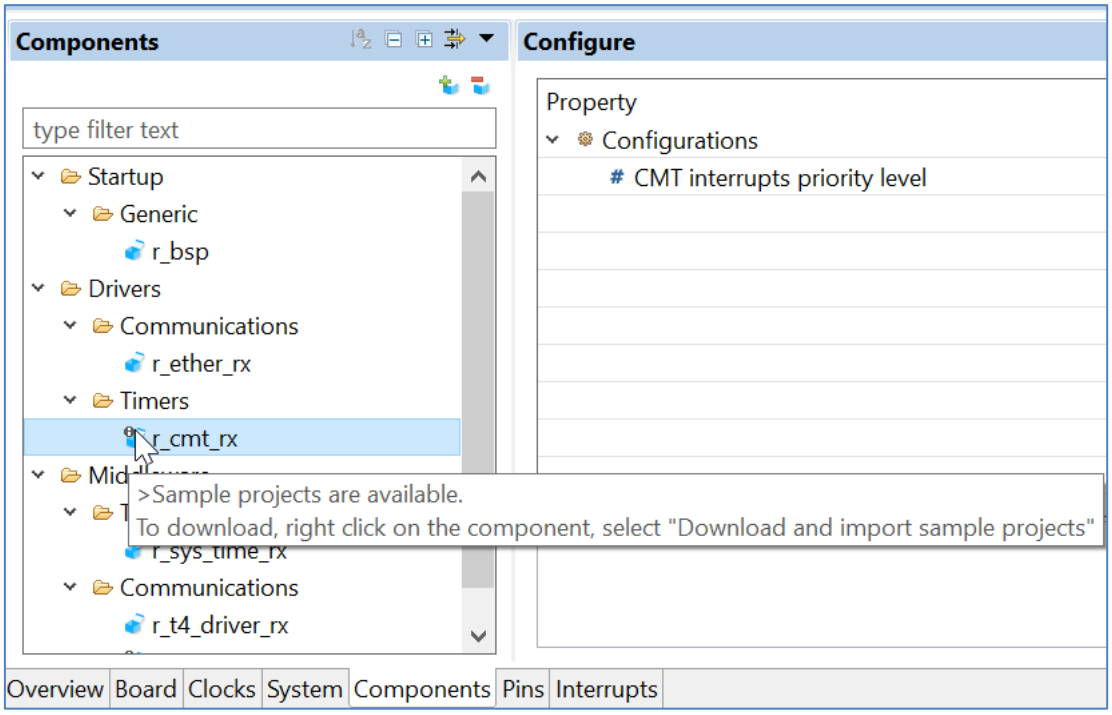

Figure 3-2: Tooltip of ‘i’ overlay icon for component that can download sample project

3.2.3 The clock codes are removed from R_CGC_Create () API.

From Smart Configurator RX V2.10.0, BSP has defined new macro functions (See below) to support clocks when they are enabled but not selected as system clock input, thus no more clock related codes are generated in the R_CGC_Create () API.

- BSP_CFG_MAIN_CLOCK_OSCILLATE_ENABLE
- BSP_CFG_SUB_CLOCK_OSCILLATE_ENABLE
- BSP_CFG_HOCO_OSCILLATE_ENABLE
- BSP_CFG_LOCO_OSCILLATE_ENABLE
- BSP_CFG_IWDT_CLOCK_OSCILLATE_ENABLE

3.2.4 A new GUI restriction for interrupt priority level setting is applied to EEI and TXI interrupts when using I2C master mode component.

From Smart Configurator RX V2.10.0, when using I2C master mode component, interrupt priority level setting for EEI should be higher than the TXI interrupt, otherwise an error mark with tooltip will be displayed.

3.2.5 The software component download link text has been renamed.

From Smart Configurator RX V2.10.0, the software component download link text has been renamed to make it more obvious that download functionality is only for FIT driver and middleware, previously the name is “Download more software component”, and now it is renamed to “Download the latest FIT drivers and middleware” as below.

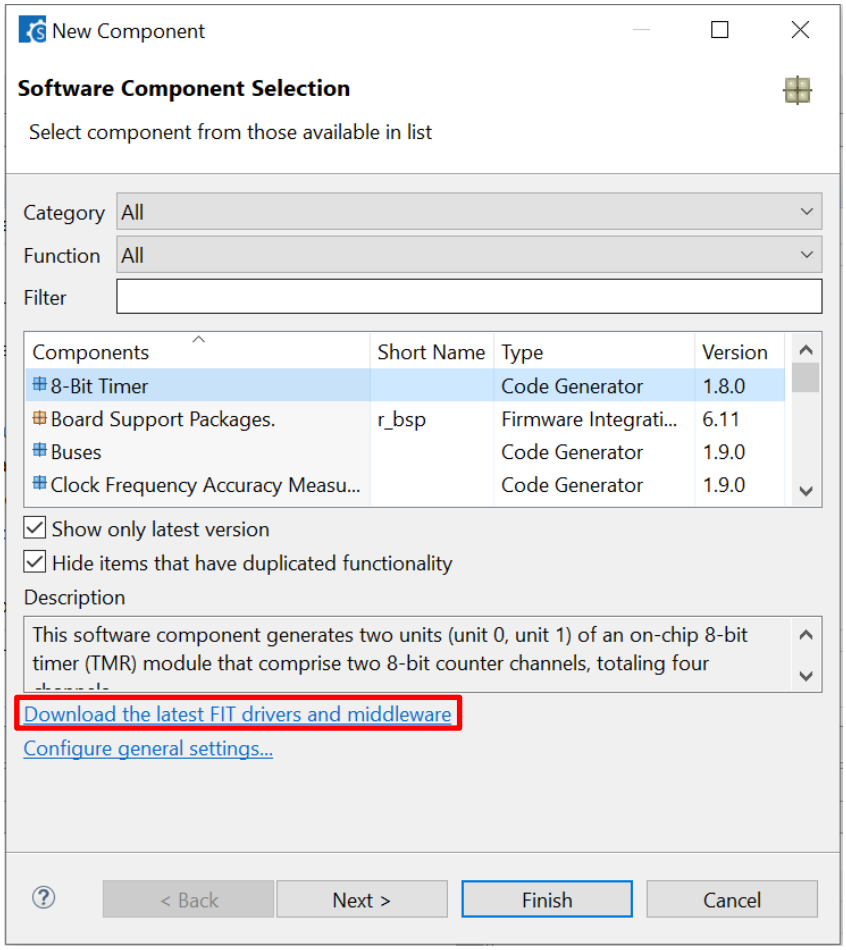

Figure 3-3: New name for software component download link

3.2.6 The MTU pins used for the U, V and W phases can be enabled/disabled when using Complimentary PWM Mode component.

From Smart Configurator RX V2.10.0, new check boxes are added to control the enable/disable status of the U, V and W phases MTU pins for Complimentary PWM Mode component.

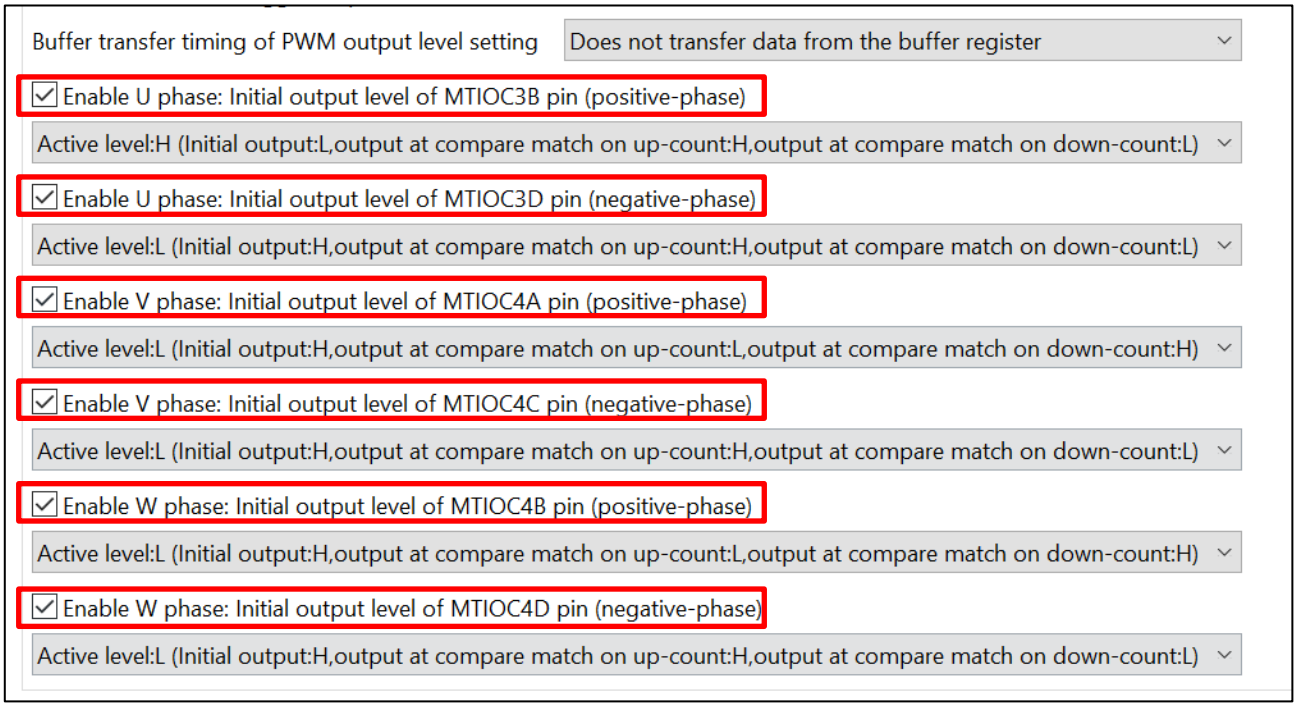

Figure 3-4: New check boxes for enabling/disabling the usage of U, V and W phase MTU pins

3.2.7 Improvements have been made on the generated codes for Remote Control Signal Receiver component.

From Smart Configurator RX V2.10.0, few improvements as below are applied to generated codes for Remote Control Signal Receiver component.

(1) Redundant D0FLG and D1FLG condition checking codes are removed

```
static void r_Config_REMC0_remci0_interrupt(void)
{
    ...

    if((1U == REMC0.REMSTS.BIT.REFLG) && (0U == REMC0.REMSTS.BIT.DRFLG))
    {
        if((0U == REMC0.REMSTS.BIT.D0FLG) && (0U == REMC0.REMSTS.BIT.D1FLG))
        {
            for(count = 0U; count < g_remc0_rx_length; count++)
            {
                *gp_remc0_rx_address++ = *p_data++;
            }

            REMC0.REMDAT0.BIT.DAT0 &= 0xFEU;
            r_Config_REMC0_callback_receiveerror();
        }
    }

    ...

    /* Start user code for r_Config_REMC0_remci0_interrupt. Do not edit comment generated here */
    /* End user code. Do not edit comment generated here */
}
```

Figure 3-5: The 3 lines of codes are redundant and have been removed

(2) The "R_Config_REMC_Read(...)" API generation is controlled by checking status of "Enable data reception completion interrupt" check box on the GUI, it will be generated when the check box is checked, otherwise it will not be generated.

(3) Add the DINT (Completion of Data reception interrupt) enable/disable codes in the "R_Config_REMC_Read (...)" API and REMC interrupt service routine respectively, remove the DINT enable codes in the “R_Config_REMC_Create ()” API.

```
MD_STATUS R_Config_REMC0_Read(uint8_t * const rx_buf, uint8_t rx_num)
{
    MD_STATUS status = MD_OK;
    if(0x08 < rx_num)
    {
        /* Exceed maximum receive number */
        status = MD_ERROR1;
    }
    else
    {
        g_remc0_rx_length = rx_num;
        gp_remc0_rx_address = rx_buf;
        REMC0.REMINT.BIT.DRINT = 1U;
    }
    return (status);
}
static void r_Config_REMC0_remci0_interrupt(void)
{
    uint8_t *p_data = (uint8_t *) &REMC0.REMDAT0;
    uint8_t count;

    if((0U == REMC0.REMSTS.BIT.DRFLG) && (0U == REMC0.REMSTS.BIT.REFLG))
    {
        REMC0.REMINT.BIT.DRINT = 0U;

        for(count = 0U; count < g_remc0_rx_length; count++)
        {
            *gp_remc0_rx_address++ = *p_data++;
        }

        REMC0.REMDAT0.BIT.DAT0 &= 0xFEU;
        r_Config_REMC0_callback_receiveend();
    }
    ...
}
```

Figure 3-6: DINT enable/disable codes are added into corresponding API functions respectively

(4) Improve the "R_Config_REMC_Read(...)" API description to make its functionality clearer.

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 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
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
May. 16, 2021	R20TS0696	When using PORT component and configuring PORTC multiplexed pins as input https://www.renesas.com/us/en/document/tnn/notes-e-studio-smart-configurator-plug-smart-configurator-rx-15	RX130, RX230, RX231	V2.10.0

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 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 bus strobe signal pins usage when using external bus	-	-	-	-	-	✓	-	-	✓	-	
7	Note on the MTU pins when using POE component on some device packages	-	-	-	-	-	-	-	-	–	✓	Excludes RX24U
8	Note on the section build issue when using DTC component under FreeRTOS with IoT libraries GCC project	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

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

No	Description	RX64M	RX65N, RX651	RX66N	RX66T	RX671	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 bus strobe signal pins usage when using external bus	✓	✓	✓	✓	✓	✓	✓	✓	✓	
7	Note on the MTU pins when using POE component on some device packages	✓	✓	-	-	-	✓	✓	-	-	Excludes RX65N
8	Note on the section build issue when using DTC component under FreeRTOS with IoT libraries GCC 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 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

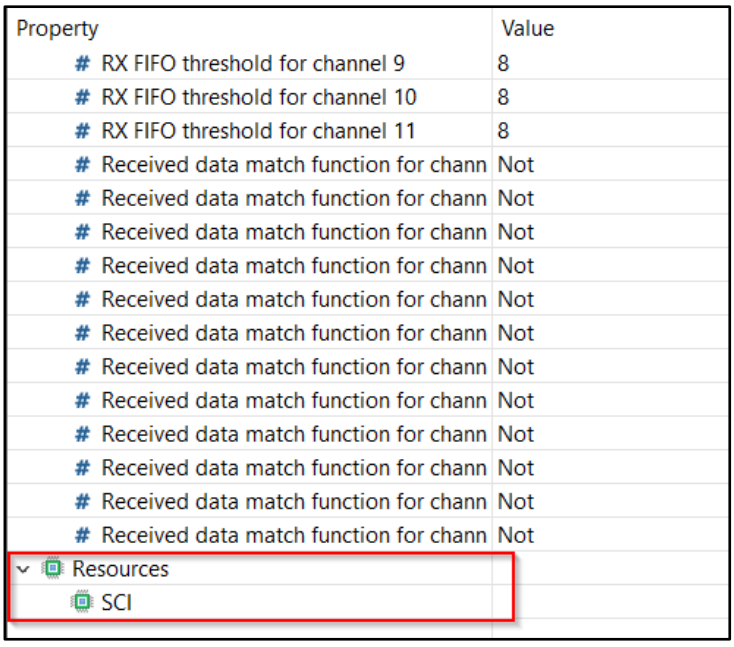

Figure 5-1: Resource tree without any pin in FIT component GUI

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

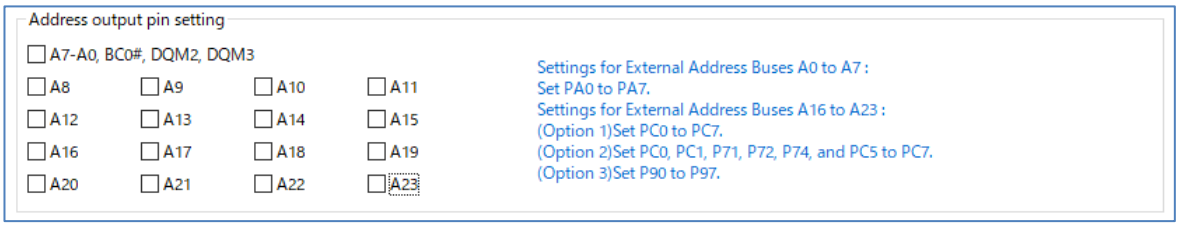

Figure 5-2: "Address output pin setting" value should be disabled

5.2.6 Note on bus strobe signal pins usage when using external bus

When using external bus (Buses component), BC1#/WR1# must be used and then 16/32 bits bus width can be selectable from each CS configuration GUI, this restriction is unnecessary, this issue will be fixed from next release

5.2.7 Note on the MTU pins when using POE component on some device packages

When using POE component to configure MTU pins for high impedance, some MTU pins do not exist on some device packages as below, although they are still configurable on the POE component GUI, please don't use them, this issue will be fixed from next release.

Device	Pin packages	Non-existing pins but still configurable on POE GUI
RX23W	56 pins	MTIOC1A
RX24T	64 pins	MTIOC0D and MTIOC9B
RX64M	100 pins	MTIOC7C and MTIOC7D
RX71M	100 pins	MTIOC7C and MTIOC7D
RX651	64 pins	MTIOC0C, MTIOC0D, MTIOC6B and MTIOC6D
RX72M	100 pins	MTIOC6B

5.2.8 Note on the section build issue when using DTC component under FreeRTOS with IoT libraries GCC project

When using DTC (Data Transfer Control) component under FreeRTOS with IoT libraries GCC project, there will be a build issue related to DTC section in the linker_script.ld, please open the linker_script.ld GUI and delete the "RAM" text in the "Load Memory Region" textbox for the DTC section as a workaround to resolve this build issue, this issue will be fixed from next release.

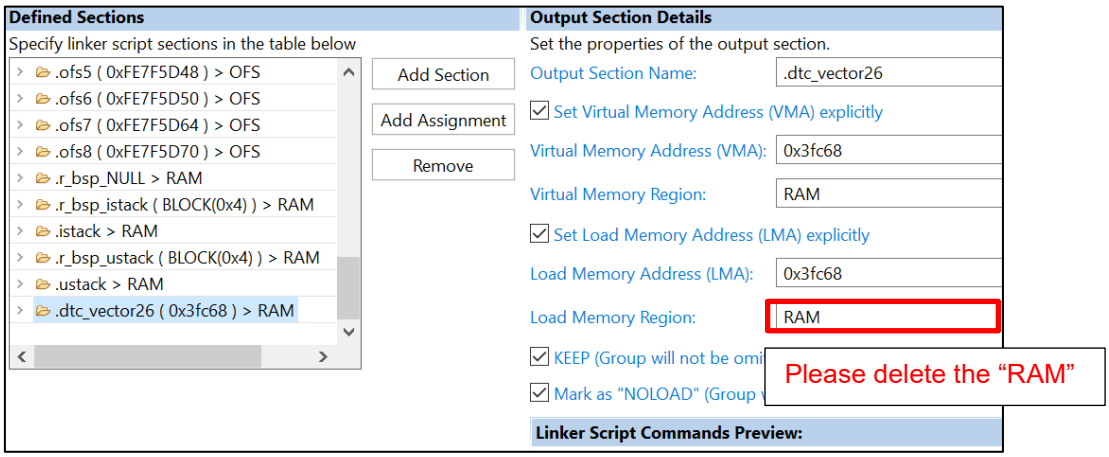

Figure 5-3: The workaround to resolve the section build issue

6. Points for Caution

This section describes points for caution regarding the Smart Configurator for RX V2.10.0. 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 GCC project in e^2 studio 7.4.0	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	
7	Note on using Data Transfer Controller	-	-	-	-	✓	-	✓	-	–	-	
8	Note on Ports setting when using S12AD components	✓	-	✓	✓	-	-	-	-	✓	-	
9	Note on section build warning when using FIT components	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
10	Note on clock frequency usage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
11	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	RX671	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 GCC project in e^2 studio 7.4.0	✓	✓	✓	✓	–	✓	-	✓	✓	
7	Note on using Data Transfer Controller	-	✓	✓	-	✓	-	✓	✓	-	
8	Note on Ports setting when using S12AD components	✓	✓	✓	-	✓	✓	✓	✓	-	
9	Note on section build warning when using FIT components	✓	✓	✓	✓	✓	✓	✓	✓	✓	
10	Note on clock frequency usage	✓	✓	✓	✓	✓	✓	✓	✓	✓	
11	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.

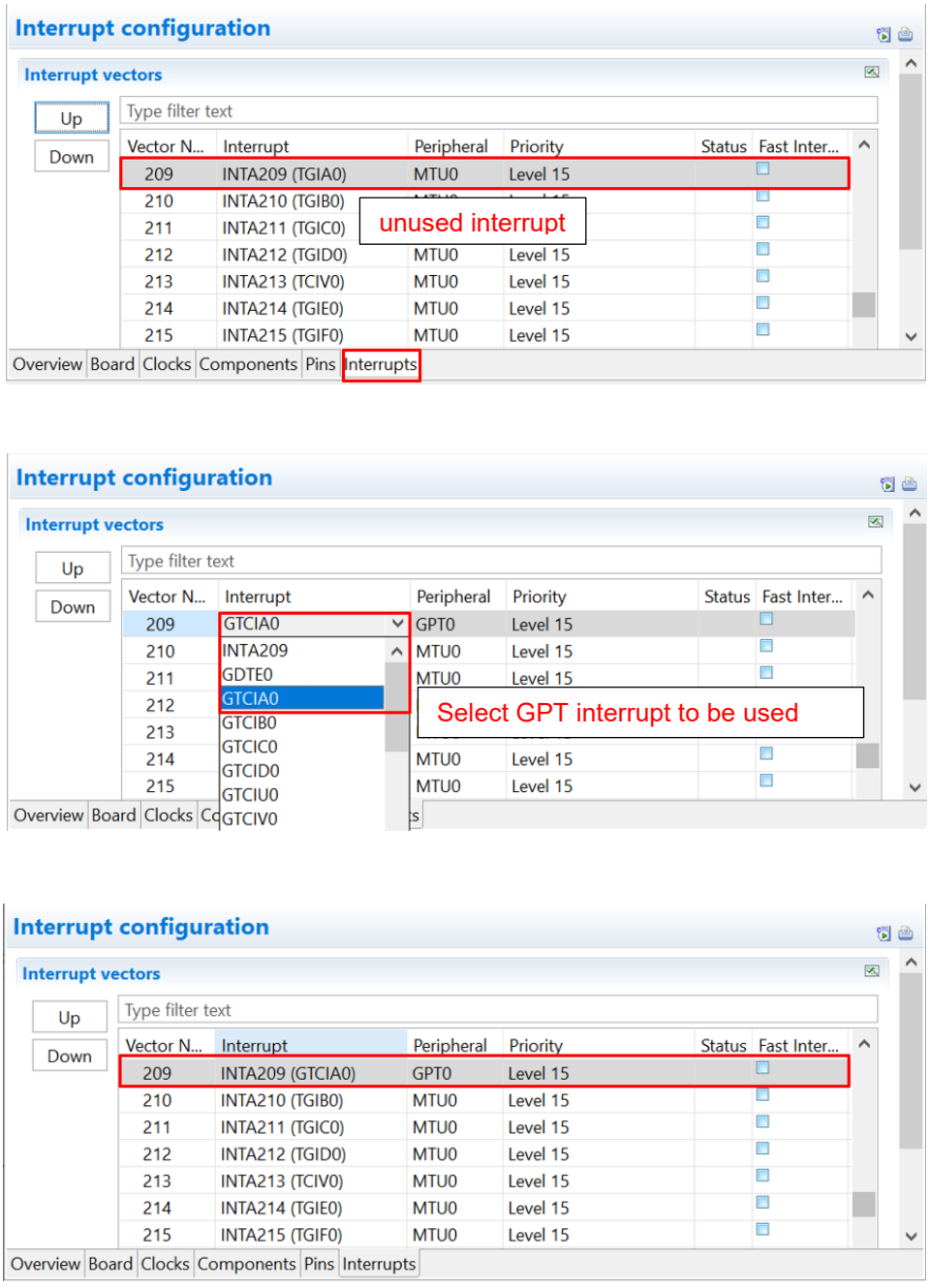

Figure 6-1: “Address output pin setting” value should be disable

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.

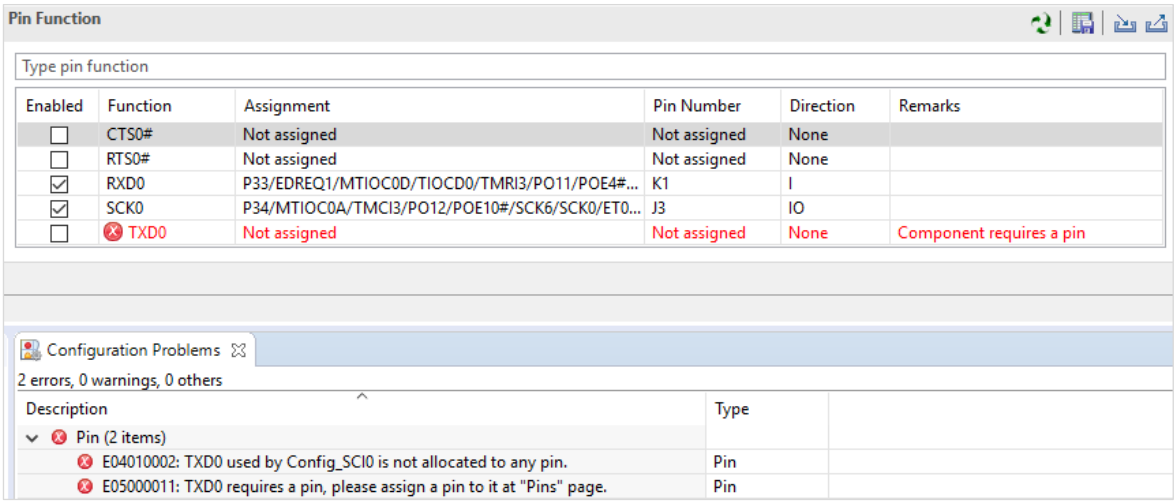

Figure 6-2: Ignore warnings when TXDn pin is disabled (Example with TXD0)

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 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.

6.2.7 Note on using Data Transfer Controller

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

6.2.8 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
RX671	P00 to P02, P03, P05, P07 P40 to P47 P90 PD0 to PD7 PE0, PE1

6.2.9 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.

6.2.10 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.

6.2.11 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
2.91	Apr.13.21	38	Update to Rev.2.9.1
2.92	Jul. 21.21	39	Update to Rev.2.10.0

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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