

Smart Configurator V.1.3

R20UT4238EJ0100

Rev.1.00

Board Support Package for RX GCC

Dec 22, 2017

Introduction

This document covers conventions in importing the Board Support Package module of Firmware Integration Technology to e2studio project created for RX GCC toolchain. For general information about Board Support Package module for CC-RX, refer to another application note “RX Family Board Support Package Module Using Firmware Integration Technology” (r01an1685ej0360-rx.pdf). This document covers special notes in Smart Configurator and RX GCC environment.

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1. Adding Board Support Package to the Project

If the Smart Configurator project for RX GCC is created in e²studio (*1-1), the Board Support Package module (r_bsp) will be registered as component in Smart Configurator view by default. By generating source code in Smart Configurator, r_bsp will be added to the project. (*1-2) (*1-3)

*1-1 To create the Smart Configurator project in e²studio 6.2, check “Use Smart Configurator” checkbox in “Select Coding Assistant Settings” page of the new project wizard.

*1-2 If Smart Configurator is used for importing r_bsp, you do not need to follow the steps described in the section “6. Project Setup” and “7. Adding r_bsp manually” in another application note “RX Family Board Support Package Module Using Firmware Integration Technology” (r01an1685ej0360-rx.pdf). Please note that adding r_bsp to user project described in the section “8. Adding FIT Modules to the User Project” is not supported by Smart Configurator.

*1-3 If Smart Configurator is used for importing r_bsp, initialization code for specific board will not be imported.

2. Functionalities of Board Support Package

For the functionalities of the Board Support Package, refer to the section “2. Features” in “RX Family Board Support Package Module Using Firmware Integration Technology” (r01an1685ej0360-rx.pdf).(*2-1)

*2-1 If Smart Configurator is used for importing r_bsp, the option to disable the startup described in the section “2.23 Startup Disable” in “RX Family Board Support Package Module Using Firmware Integration Technology” (r01an1685ej0360-rx.pdf) is not supported. Also the stacks re-configuration is not supported in r_bsp_config.h described in “2.8 stacks & Heap” is not supported.

3. Configuring Board Support Package

For how to configure the Board Support Package, refer to the section “3. Features” in “RX Family Board Support Package Module Using Firmware Integration Technology” (r01an1685ej0360-rx.pdf).(*3-1)

*3-1 If Smart Configurator is used for importing r_bsp, the settings related to system clocks made on Smart Configurator will be generated as source code. You do not need follow the steps described in the section “3.2.6 Clock Setup” to change the configurations manually.

4. API Specifications

For the APIs supported by Board Support Package, refer to the section “4. API Information” in “RX Family Board Support Package Module Using Firmware Integration Technology” (r01an1685ej0360-rx.pdf).(*4-1)

*4-1 The toolchain supported by the Board Support Package for RX GCC is different from that for CC-RX described in the section “4.5 Supported Toolchains” in “RX Family Board Support Package Module Using Firmware Integration Technology” (r01an1685ej0360-rx.pdf). The toolchain supported by Board Support Package for RX GCC used with Smart Configurator V.1.3 is as follows.

Item	Details
IDE	e ² studio V.6.2
C compiler	GCC for Renesas RX Operation Confirmation Version : V.4.8.4.201703

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Revision History <revision history,rh>

Rev.	Date	Description	
		Page	Summary
1.00	Dec 22, 2018	-	First Release.

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. 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 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. Unused pins should be handled as described under Handling of Unused Pins in the manual.

2. Processing at Power-on

The state of the product is undefined at the moment 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 moment 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 moment 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 moment when power is supplied until the power reaches the level at which resetting has been specified.

3. Prohibition of Access to Reserved Addresses

Access to reserved addresses is prohibited.

- The reserved addresses are provided for the possible future expansion of functions. Do not access these addresses; the correct operation of LSI is not guaranteed if they are accessed.

4. Clock Signals

After applying a reset, only release the reset line after the operating clock signal has become stable. When switching the clock signal during program execution, wait until the target clock signal has 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. Moreover, 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.

5. Differences between Products

Before changing from one product to another, i.e. to a product with a different part number, confirm that the change will not lead to problems.

- The characteristics of Microprocessing unit or Microcontroller unit products in the same group but having a different part number may differ in terms of the 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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