Smart Configurator V.1.4

Board Support Package for RX GCC

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Introduction

This document covers conventions in importing the Board Support Package FIT module to e2studio project created for RX GCC toolchain. The functionality of Board Support Package FIT module for RX GCC is same as Board Support Package FIT module for CC-RX. For the functionality of Board Support Package module for CC-RX, refer to another application note “RX Family Board Support Package Module Using Firmware Integration Technology” (r01an1685ej0380-rx.pdf). This document covers special notes in Smart Configurator and RX GCC environment.

Contents

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)

*1-1 To create the Smart Configurator project in e2studio, 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” (r01an1685ej0380-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.

2. Functionalities of Board Support Package

The functionality of Board Support Package FIT module for RX GCC is same as Board Support Package FIT module for CC-RX. For the functionality of Board Support Package module for CC-RX, refer to the section “2. Features” in the application note “RX Family Board Support Package Module Using Firmware Integration Technology” (r01an1685ej0380-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 the application note “RX Family Board Support Package Module Using Firmware Integration Technology” (r01an1685ej0380-rx.pdf) is not supported.

3. Configuring Board Support Package

For how to configure the Board Support Package, refer to the section “2. Features” in the application note “RX Family Board Support Package Module Using Firmware Integration Technology” (r01an1685ej0380-rx.pdf).(*3-1)

*3-1 If Smart Configurator is used for importing r_bsp, the settings related to system clocks made on “Clocks” sheet in Smart Configurator will be generated as source code. Other settings in Board Support Package Module can also be configured on “Components” sheet in Smart Configurator.

4. API Specifications of Board Support Package

For the APIs supported by Board Support Package, refer to the section “4. API Information” in the application note “RX Family Board Support Package Module Using Firmware Integration Technology” (r01an1685ej0380-rx.pdf).

5. Supported Toolchain

The Board Support Package FIT module for RX GCC imported by this version of Smart Configurator was evaluated using the following tools.

Item	Details
IDE	e^{2}studio V.7.0
C compiler	GCC for Renesas RX Operation Confirmation Version：V.4.8.4.201801

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Revision History

		Description	
Rev.	**Date**	**Page**	**Summary**
1.0	Jul 1, 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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