RX62N

Renesas Starter Kit Sample Code for CubeSuite+

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Introduction

The Renesas Starter Kit is a low-cost kit of development tools. The kit provides a user-friendly development environment for evaluating microcomputers from Renesas and enables coding and debugging by users with the aid of an accompanying emulator and an integrated development environment.

This document covers the sample code for use with the CubeSuite+ in Renesas Starter Kits for the RX62N. Using the sample code requires separately installing CubeSuite+.

Target Device

RX62N

Contents

1. Installing CubeSuite+

If you have not installed CubeSuite+, download the latest version of CubeSuite+ for installation from the link below.

http://www.renesas.com/cubesuite+_download

2. Starting the CubeSuite+ Project

Select the file below by double-clicking on its name (shown below) or clicking on the [GO] button in the [Open Existing Project] area in the start panel of CubeSuite+.

<Folder where the sample code was unzipped>\ an_r20an0279je0100_rx62n_rsk \62nrsk\62NRSK\62NRSK.mtpj

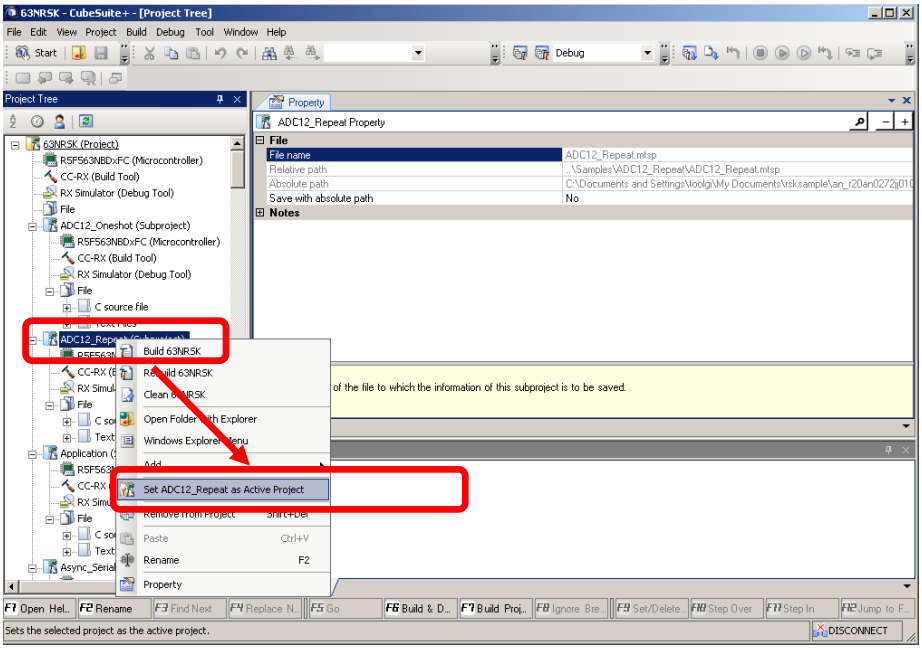
3. Selecting a Sub-Project (When Using the Sample Code)

The sample code is provided in sub-projects for individual tutorials and peripheral functions.

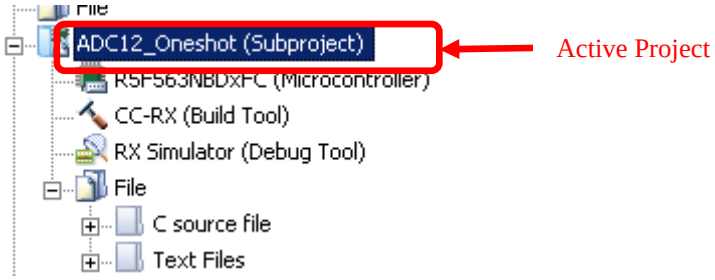
After starting the project, the next step is to make the sub-project for the tutorial or peripheral function you would like to use active in accord with the steps shown below.

3.1 How to Make a Sub-Project Active

Select the sub-project for a tutorial or peripheral function you would like to use from the Project Tree and right-click on it to open the context menu. Then, select [Set sub as Active Project].



The name of the active sub-project is underlined in the Project Tree.



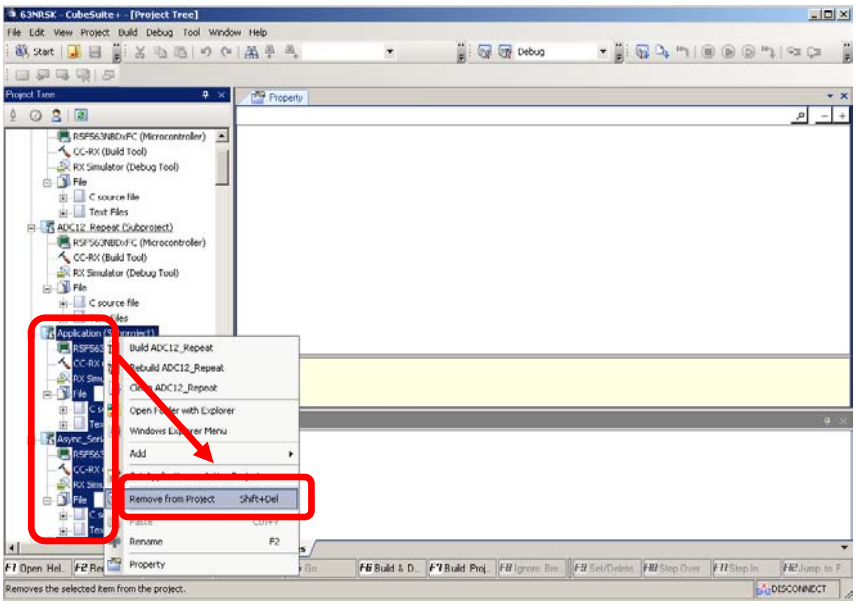
4. Deleting Sub-Projects that are not to be Used (When Using the Sample Code)

The building process builds all projects in the Project Tree, including non-active sub-projects.

Sub-projects that you don't intend to use can be deleted from the Project Tree by the method shown below.

4.1 How to delete sub-projects

Select and right-click on sub-projects for peripheral functions that are not to be used from the Project Tree (selecting multiple sub-projects is possible by also using the [Ctrl] key or [Shift] key). This opens the context menu. Select [Remove from Project].



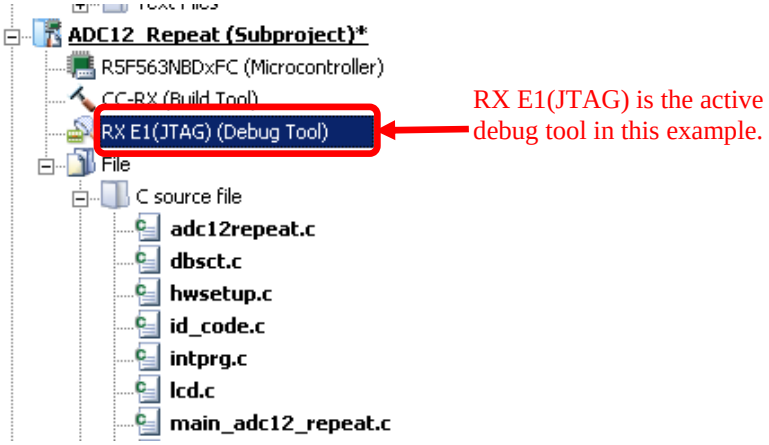
5. Changing the Debug Tool

When the active debug tool is not the E1 emulator [RX E1(JTAG)], you will need to change the debug tool.

Confirm the active debug tool by referring to "debug tool" in the Project Tree.

When the debug tool is not [RX E1(JTAG)], select [Debug] -> [Using Debug Tool] -> [RX E1(JTAG)] from the menu.

When the debug tool is [RX E1(JTAG)], changing the debug tool is not necessary.



6. Setting Properties of the Debug Tool

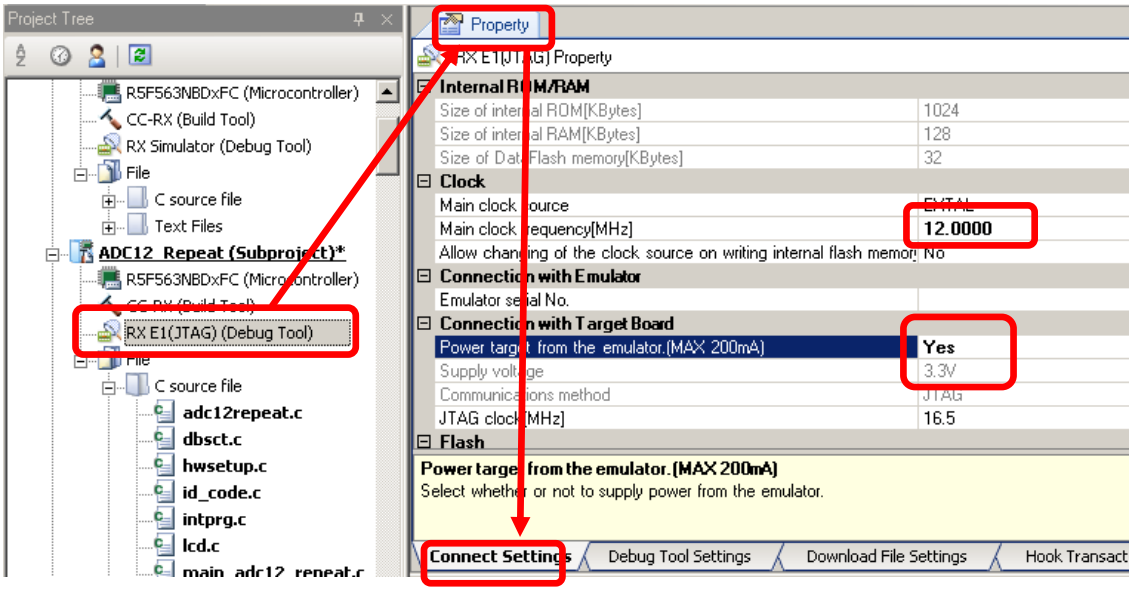
Before connecting the E1 emulator, open the Property panel by double-clicking on RX E1(JTAG) (debug tool) in the Project Tree then set [Main clock frequency] and [Supply voltage] on the [Connect Settings] tabbed page.

In this project, the settings below have already made.

Select [No] for [Power target from the emulator] if an external power supply is to be provided to the target board.

Table Properties Settings of the CubeSuite+ Project for RX62N [RX E1(JTAG)]

Tab	Category	Item	Setting
Connect Settings	Clock	Main clock frequency [MHz]	12
	Connection with Target Board	Power target from the emulator (MAX 200 mA)	Yes
		Supply voltage	3.3V



7. Building a Program

Selecting [Build] -> [Build Project] makes CubeSuite+ build the project. The results obtained by building the project are displayed in the Output panel.

8. Starting the E1 Emulator

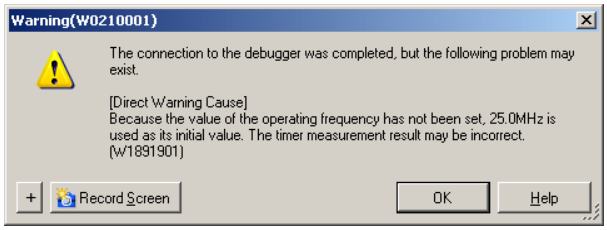
Connect the E1 emulator to the Renesas Starter Kit.

Refer to the documentation accompanying the Renesas Starter Kit for the settings of switches on the board for the kit and connection with the E1 emulator.

Select [Debug] -> [Download] from the menu.

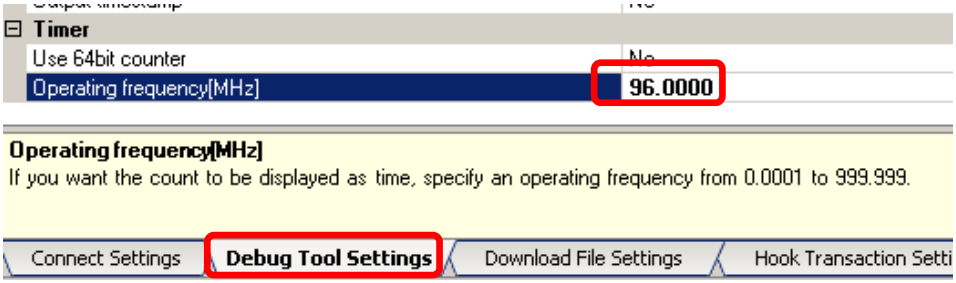
The E1 emulator is started and downloads the program.

There are cases where the warning message shown below is output when the E1 emulator is started.



Ignore the message unless you will be using the timer measurement function.

If you will be using the timer measurement function, double-click on RX E1(JTAG) (debug tool) to open the property panel, select the [Debug Tool Settings] tab, then input 96 against [Operation Frequency [MHz]].



9. Executing Programs

After downloading is complete, selecting [Debug] -> [Go] executes the program.

Website and Support

Renesas Electronics Website
http://www.renesas.com/

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General Precautions in the Handling of MPU/MCU Products

The following usage notes are applicable to all MPU/MCU 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.
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   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.
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