RX630

Renesas Starter Kit Sample Code for e^{2}studio

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Introduction

Renesas Starter Kits (RSK) are supplied as complete development systems for the selected microcontroller. The kit includes an evaluation board, portable On-Chip Debugger and a set of peripheral sample code.

Target Device

RX630

Development environment

IDE: e^{2}studio

Compiler: Renesas RX Compiler

Hardware: Renesas Starter Kit for RX630

Contents

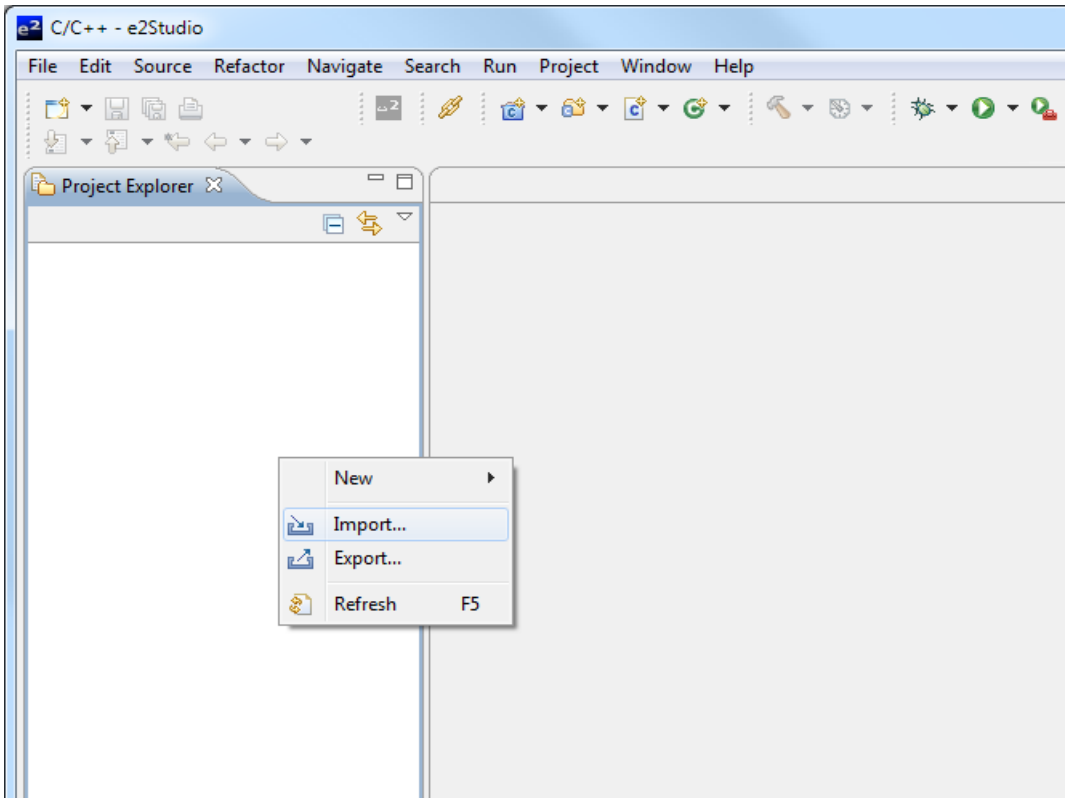
1. Opening the sample code workspace

The e2studio IDE should already be installed on the user's personal computer (PC). The RSK sample code is supplied as an e2studio sample RSK project. This workspace should be copied to a suitable folder on your PC.

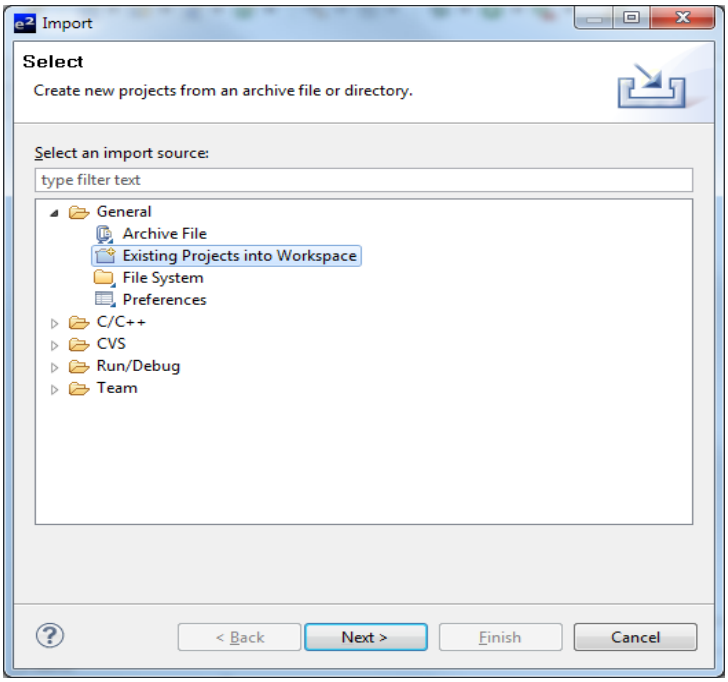
Note: Use an Zip/Unzip utility to unzip to a location on the users hard drive. E.g. C:\Workspace\RSK\RSKRX630.

Once copied to a suitable location the sample RSK project can be opened by Importing the "RSKRX630" workspace in e2studio IDE.

1.Once the e2studio environment has initialised, right click in the project explorer window and click "Import…"

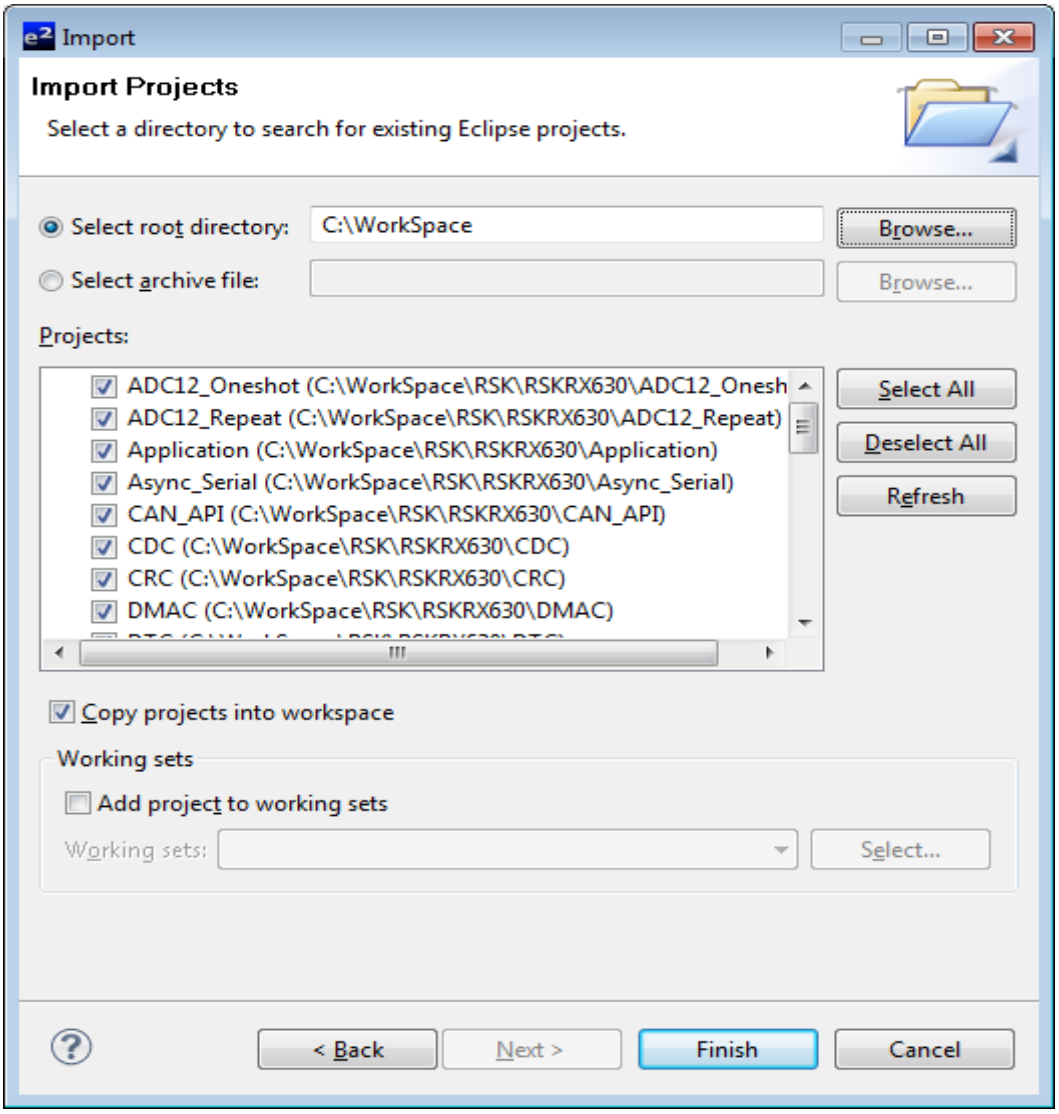


2. The Import dialog will now appear. Expand the “General” folder icon, and select “Existing Projects into Workspace”, then click ‘Next’.



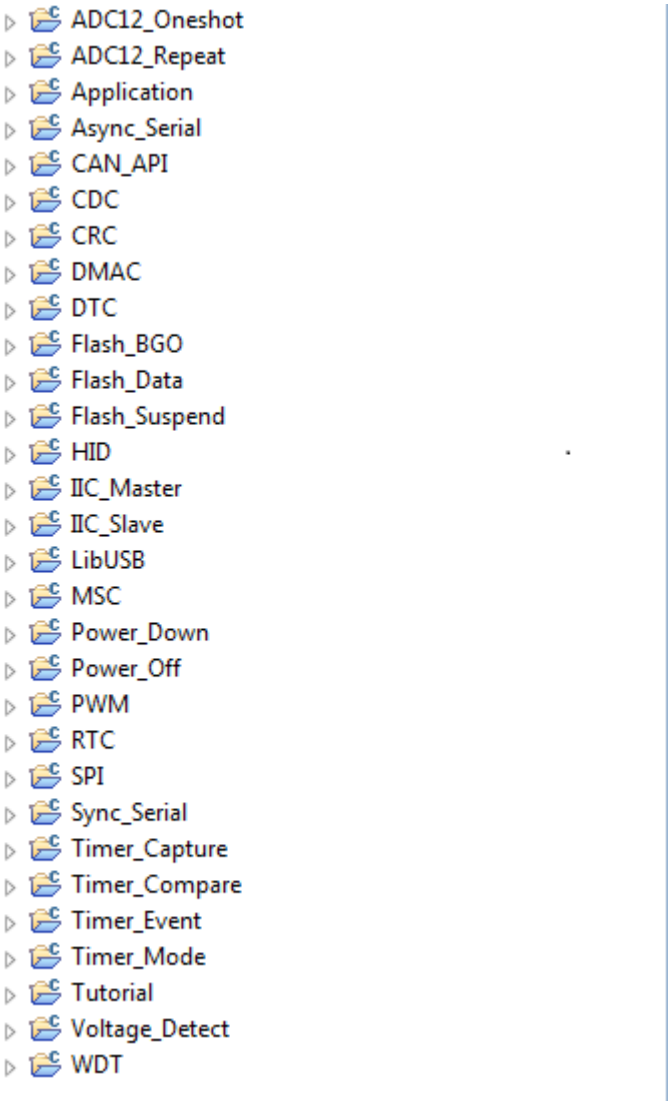
3. The Import Dialog will now appear,specify the project to import. Click the “Browse” button and locate the directory where the files were unzipped:
E.g. C:\Workspace\RSK\RSKRX630

And also ensure that the ‘Copy projects into workspace’ option is ticked, and then click ‘Finish’.



2. Loading the selected sample code project and Opening sample code source files

Once the workspace is loaded into e2studio IDE
From the List of the projects in the “Project Explorer” on the left hand side, select the “Required” project and click the arrow next to it to expand the folder contents, and click the arrow next to the ‘src’ folder to show the source files.



3. Source code functionality

Each source code project is specifically written to run on the appropriate RSK. However this source code can be useful as an example of peripheral initialization even without the RSK.

Each sample project will contain a C source file that includes “main” in the name, for example “main_adc12_repeat.c”. This source file will include the C function main() as well as a comment block that describes the function of the sample code.

4. Appendix

Example of comment block with code functionality

```
/***********************************************************************
* File Name             : main_adc12_oneshot.c
* Version               : 1.00
* Device                : R5F5630E
* Tool Chain            : Renesas RX Toolchain 1.2.0.0
* H/W Platform          : RSKRX630
* Description           : Demonstration of the S12AD ADC module, in single shot mode.
*                         The program configures the ADC to perform oneshot AD conversions
*                         and display the results on the LCD.
* Operation             :               1. Compile and download the sample code to the target.
*                                         Click 'Reset Go' icon on the 'Debug Run' toolbar to
*                                         start the software.
*
*                                       2. Observe the LCD display - the RX630 CPU will initially
*                                         display the ADC reading as
*                                                 =H'xxxx
*
*                                       3. Adjust the potentiometer, press SW3 to carry out a
*                                         12-bit A/D conversion of the ADC channel AN000 and
*                                         observe the change in the value being displayed on the
*                                         LCD.
*
*                                       4. The user may also examine the ADC conversion result in
*                                         the global variable gADC_Result.
*                                         Repeat Step 3 to carry out further ADC readings.
***********************************************************************/
```

5. Website, Inquiries and Support

Renesas Electronics Website

http://www.renesas.com/

Inquiries

http://www.renesas.com/inquiry

Support

http://www.renesas.com/rskrx630

6. Revision Record

Rev.	Date	Description	
		Page	Summary
1.00	July 1, 2012	—	First edition issued
2.00	May 16, 2013	1	Correction for Compiler information. Compiler used is Renesas RX Compiler and not GNU RX Compiler.

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 accord 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.

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