

# SH7239 Group

R01AN0476EE0100

Rev.1.00

## Renesas Starter Kit Sample Code

June 21, 2011

### Introduction

Renesas Starter Kits (RSK) is supplied as complete development systems for the selected microcontroller. The kit includes an evaluation board, Debugger and a set of peripheral sample code. This peripheral sample code is supplied as a High-performance Embedded Workshop (HEW) workspace with this document.

### Target Device

SH7239

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## 1. Opening the sample code workspace

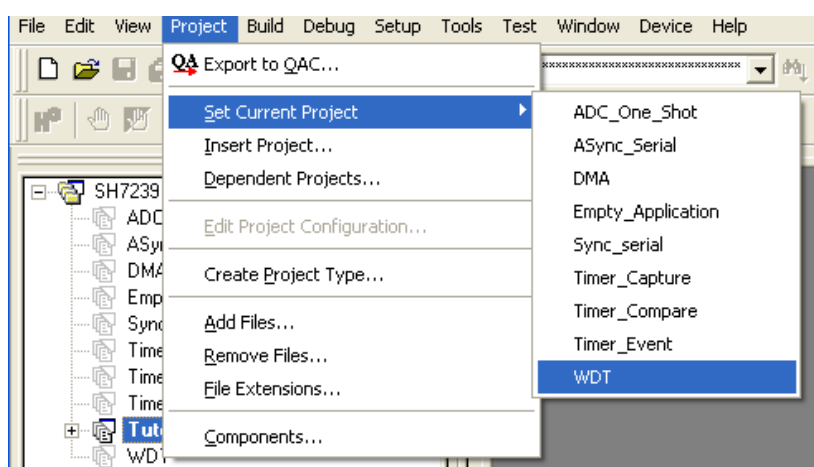
The RSK sample code is supplied as a High-performance Embedded Workshop (HEW) workspace. This workspace should be copied to a suitable folder on your PC. The default location that HEW will look for workspace files is `c:\workspace`.

Once copied to a suitable location the workspace can be opened by double clicking the file “SH7239.hws” or within HEW from the File | Open Workspace menu item.

## 2. Loading the selected sample code project

Within the workspace there are a number of separate projects. Each project contains the source files for the specific peripheral sample code.

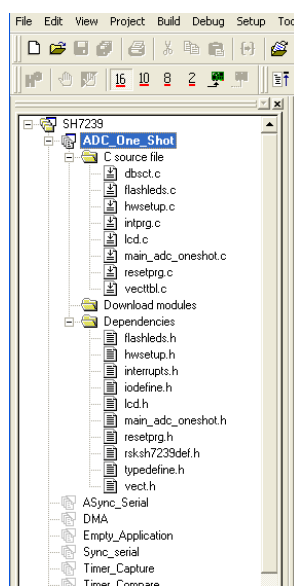
Once the workspace is loaded into HEW the required sample project must be loaded before you can be open the source files. From the Project | Set current project menu item select the required project name.



Example

## 3. Opening sample code source files

Once the project is loaded the source code and all dependant files can be opened in the editor by double clicking the file in the workspace window.



Example

## 4. 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\_oneshot.c”. This source file will include the C function main() as well as a comment block that describes the function of the sample code.

## 5. Appendix

Example of comment block with code functionality

```
/*
*****
* File Name      : main_adc_oneshot.c
* Version       : 1.00
* Device        : SH7239 (R0K572390C000BR)
* Tool Chain    : HEW, Renesas SuperH Standard Tool chain v9.3
* H/W Platform  : R0K572390 (CPU board)
* Description   : This program demonstrates the configuration of the ADC in single
*               : mode. The ADC result will be displayed on debug LCD.
*
* Operation     : 1. Build this application and download it to the target.
*               : 2. Click on the "Reset Go" icon available on 'Debug Run'
*               :   toolbar.
*               : 3. The following message will be displayed on the debug LCD -
*               :   LINE 1 - "ADC ONE "
*               :   LINE 2 - "PUSH SW2"
*               : 4. On pressing switch 2, the result of ADC conversion will be
*               :   stored in the variable 'usADC_Result' which can be examined
*               :   in HEW C watch window.
*               : 5. The ADC result will also be displayed on the debug
*               :   LCD line 2.
*               : 6. To initiate a new ADC conversion cycle, twiddle the
*               :   potentiometer(VR1) and press switch 2 another time.
*
* Note         : If the power supply in use, is not filtered enough, you may
*               : notice some variations in the displayed ADC results
*               : when the application is executed more than once.
*
*****
*/
```

## 6. Website and Support

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**7. Revision Record**

Rev.	Date	Description	
		Page	Summary
1.00	June 21, 2011	—	First edition issued

## 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 manual, refer to the relevant sections of the manual. If the descriptions under General Precautions in the Handling of MPU/MCU Products and in the body of the manual differ from each other, the description in the body of the manual takes precedence.

### 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 one with a different type number, confirm that the change will not lead to problems.

- The characteristics of MPU/MCU in the same group but having different type numbers may differ because of the differences in internal memory capacity and layout pattern. When changing to products of different type numbers, implement a system-evaluation test for each of the products.

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