UNC Charlotte, ECGR 6185, Spring 2010: Lab 3

MicroC/OS-II on Renesas.

Learning Objectives

This lab will have students increase their experience with uC/OS-II.

General Information

Download the Renesas MicroC/OS-II port from Micrium (NOTE: Note the MicroC/OS-III port). Follow their directions.

Prelab Activity

Read the main.c file in the test folder to gain a better understanding of the MicroC/OS II port for the Renesas board. You are allowed (and encouraged) to modify this file for the lab.

Requirements

Req. 1 – The code generated is written in C for the QSK62P
Req. 2 – The code is well commented and easy to follow
Req. 3 – Your lab report should include the final build output from the builder
Req. 4 – uC/OS-II will be running on the board.
Req. 5 – Create a task to toggle the red LED every 1.0 seconds
Req. 6 – Create a task to toggle the green LED every 10.0 seconds.
Req. 7– In a continually running task, sample the thermistor register and store in a global variable protected by a semaphore.
Req. 8 – Create a task to display the current temperature reading on the LCD every five seconds.

Lab Report

Include in your lab report observations and procedure like the following:
The general learning objectives of this lab were . . .
Pre-lab question answers
The general steps needed to complete this lab were . . .
Some detailed steps to complete this lab were . . . .

1. *Step one*
2. *Step two*
3. *. . . .*

Code generated for this lab…
Some important observations while completing/testing this lab were . . .
In this lab we learned . . . .

Submit the report file and the zipped code on the Moodle site.

Old Steps that had worked before:

One old port is a modified port of Hubert Kronenberg for M16C family to run on the SKP16C62P (note, not the QSK62P or QSK62P-Plus). Tools needed to complete this project:

1. NC30 compiler version 5.3 release 2- a trial version can be downloaded from http://download.sg.renesas.com/evaluation_software/compilers/m16c/
2. MicroC/OS-II source files- all source files in the companion CD-ROM with MicroC/OS-II book
3. Flash over USB (version 2.4)-setup is in the companion CD of SKP16C62P kit.
4. The project code

Steps needed to complete this project:

1. Downloading ports from http://www.ucos-ii.com/
2. Modifying the code.
3. Copying the OS (version 2.52) files to folder “V270”.
4. Making necessary changes to the path in uCOS_II.C file.
5. Installing NC30 Compiler to C:\renesas\NC30WA\
6. Making necessary changes in mk.bat and set it for the default path.
7. Executing the mk.bat.
8. Loading main.mot on microcontroller using flash over USB(version 2.4)