

## ECGR6185, Spring 2010: Lab 6

MicroC/OS-II on Renesas.

### Learning Objectives

This lab will have students increase their experience with an operating system, specifically uC/OS-II.

### General Information

Download the Renesas MicroC/OS-II port from Micrium (NOTE: Note there is also a MicroC/OS-III port - do not use that). Follow their directions.

### Prelab Activity

Read the efforts by Steve Ermanczyk to port this OS to this board. You are allowed (and encouraged) to modify the files developed for the QSK62P board for the lab.

### Requirements

- Req. 1 – The code generated is written in C for the QSK62P Plus board
- 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 LED 1 every 1.0 seconds
- Req. 6 – Create a task to toggle LED 2 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.

### Sample Test Procedure

Note: Hand the lab checkout sheet to the TA when you demonstrate your program. You will turn in your code and report electronically. See the website for the score sheet.

### Lab Report

Include in your lab report observations and procedure like the following:

*The general learning objectives of this lab were . . .*

*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 or modified to complete this lab...*

*No need to include all the files for the lab. Just include the modified code.*

*Some important observations while completing/testing this lab were . . .*

*Here include the memory report given at the end of the compile process (map file).*

*We are **especially** interested in seeing the map file.*

*In this lab we learned . . . .*

Upload to Moodle three files containing:

1. Your lab report (pdf). Name the file xxxxxxxx\_yyyyyyy\_lab6.pdf, where xxxxxxxx is the last name of one lab partner, and yyyyyyy is the last name of the other lab partner.
2. Your QSK62P Plus code in a zipped file. Include all c code and project files. Name the file xxxxxxxx\_yyyyyyy\_lab6.zip, where xxxxxxxx is the last name of one lab partner, and yyyyyyy is the last name of the other lab partner.
3. Your entire map file. Name the file xxxxxxxx\_yyyyyyy\_lab6.map, where xxxxxxxx is the last name of one lab partner, and yyyyyyy is the last name of the other lab partner.

**FAILURE TO FOLLOW THESE SIMPLE INSTRUCTIONS COULD RESULT IN THE LOSS OF POINTS.**