

1 Introduction

In this experiment, you will revise your Multitap program by replacing the clock task with the DS3234 or DS3232 RTC. In addition, your clock change code will need to be revised to set the RTC and you will display the temperature from the RTC.

2 Functional Requirements

The functional requirements are identical to Lab5 with the following additions/changes.

- 2.1.1 The clock task must be completely replaced by the RTC. This means the display time task reads the time directly from the RTC. You can use an `OSTimeDly()` to wait ~1s to update the display. This may cause some seconds to be skipped once in awhile but long term accuracy will be as good as the RTC.
- 2.1.2 Either display the time in 24 hour mode or display an 'A' or 'P' to indicate AM/PM after the time display.
- 2.1.3 The clock change code will have to be changed to set the RTC seconds, minutes, and hours to the current time.
- 2.1.4 Display the temperature from the RTC starting on row one, column one. The temperature display must be a right justified, three digit decimal number without leading zeros. It must display the temperature in °F and have a resolution of 1°F. No floating-point numbers or operations are allowed.

3 Design Notes

Use the basic DS3234 RTC module in the emodules folder on the Y drive.

Be careful connecting the RTC to your board. I have no spares. Those that are using the IIC version will have to solder the data and clock signals from the LCD/Keypad board. I can assist you, if you would like.

4 Grading and Write-up

The complete lab source and writeup are due on the last day of classes, March 14, 2008