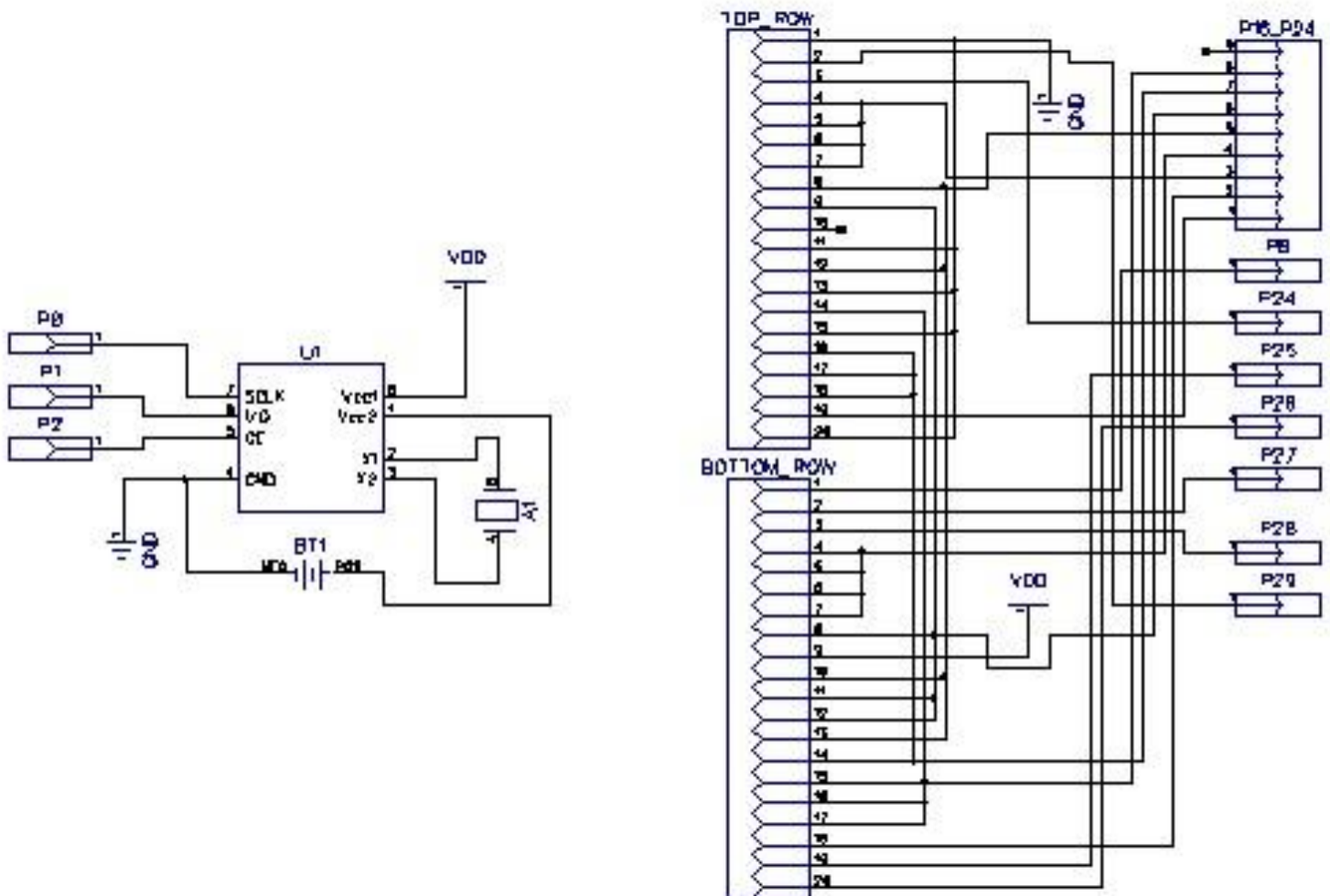


Project ID: #PP009

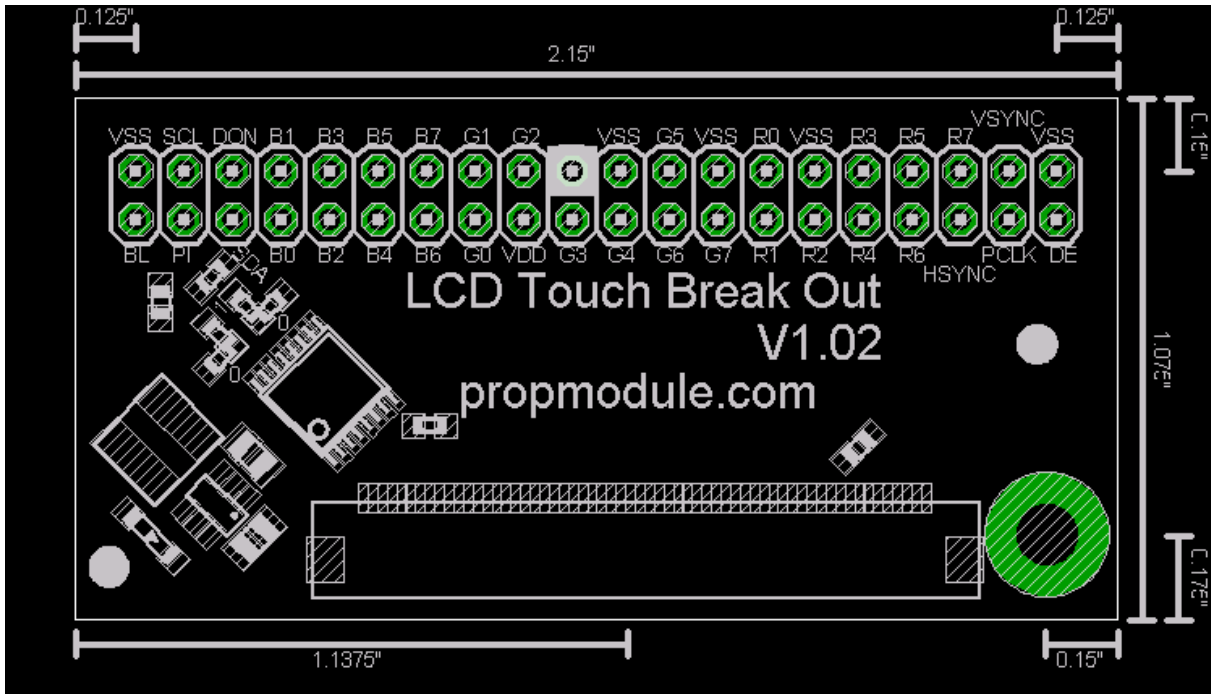
Description:

My project is a Touchscreen Digital Clock. The project uses the Propeller Schmartboard module, a 4.3 touchscreen and breakout board, and a DS1302 RTC chip. The device uses the RTC to keep time and the touchscreen to display it. It has a buffered graphics area that takes up most of the screen; this is where the time and date is displayed. There is non-buffered text-only area around it, being a thin margin (one text character tall) on the top, and a thicker margin (about 8 text characters wide) on the right edge. On the top margin is the modification potential for this program, as it can display a 40 character long string of information, easily customizable by the programmer. The clock keeps precise time with the DS1302 RTC (Real Time Clock), which it reads once every 2 seconds before updating the screen. Even though a backup battery is built onto the RTC, the system still allows you to set it up when it starts up. You tap the digits of the time or date to set them, then press the "Quit" button when you are done to save the time and resume the normal clock operations. The clock will show the time stored on the RTC when it starts, so if it is correct, you can just hit the "Quit" button without making any modifications and continue. The breakout board is soldered to a "wiring board" which joins all the necessary wires and leads them out, and then that is plugged into the Schmartboard interface (e.g. the Main board). Due to the enormous amount of external hardware and its space consuming layout, the Schmartboard's small footprint fit this job perfectly. The RTC is soldered to a separate board and is connected separately to the Schmartboard via jumpers, so that it can be moved into the most space-economical position.

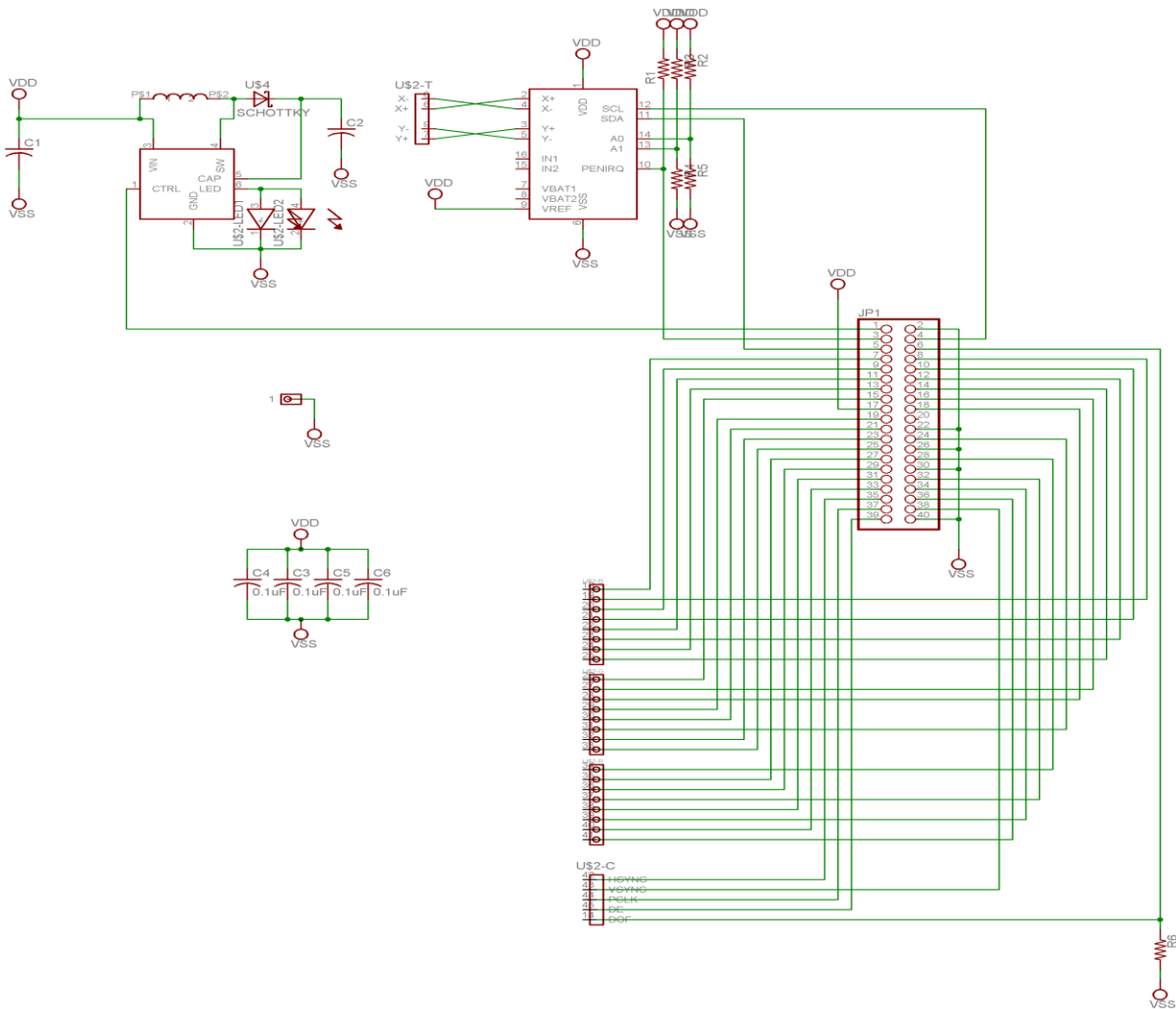
Schematic:



The "Top Row" and "Bottom Row" in the schematic above is referring to the pins on the Propmodule 4.3" LCD breakout board, shown below.



The Schematic for the breakout board is shown below:



Source Code: The Source code for this project is zipped up with it and is labeled "PSB_RTC_Clock v.1.8"

Bill of Materials:

1x 4.3" Rayslogic LCD (<http://www.rayslogic.com/>)

1x Propmodule 4.3" breakout board (<http://www.propmodule.com/>)

3x 2X4 male headers

3x 2X4 female headers

3x 1X10 male headers

1x Maxim DS1302 timekeeping chip

1x 32.768kHz Xtal (for timekeeping chip)

2x coin cell batteries

1x Propeller Schmartboard module

Wire

Pictures:

