Team 2 Week 5 Update

Accomplished this week:

- Designed and Prototyped 5 V Power Supply Circuit

- Started PCB Schematic

- Wired and began testing Tilt Switch, Rotary Encoder, Buttons, and LCD Screen

- Investigated available interrupts on the Atmega328P (2 external interrupts, all IO has pin change interrupts)

- Researched momentary switch button debouncing circuits and ordered parts

To do:

- Learn KiCAD: Number parts, decide on BOM, import footprints, etc.

- Adapt power supply to provide 3.3 V instead since our LCD Screen needs 3.3 V logic and there is no reason to stay at 5 V.

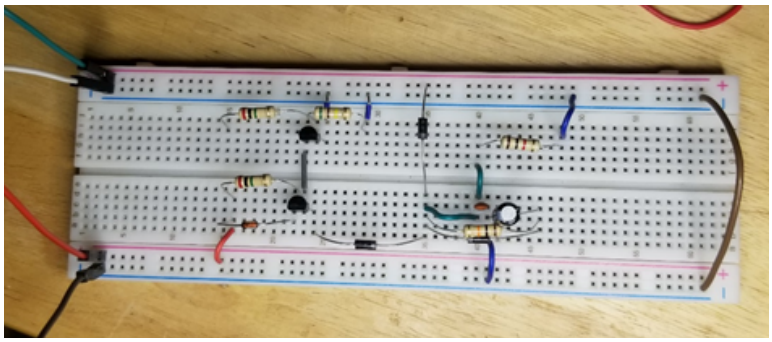
- Breadboard debouncing circuits

- Write high level design of how the program should operate

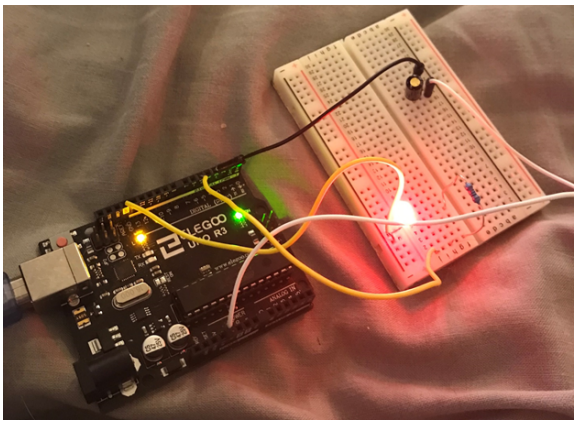
- Finish testing Tilt Switch to get reliable shake detection

- Get more sleep

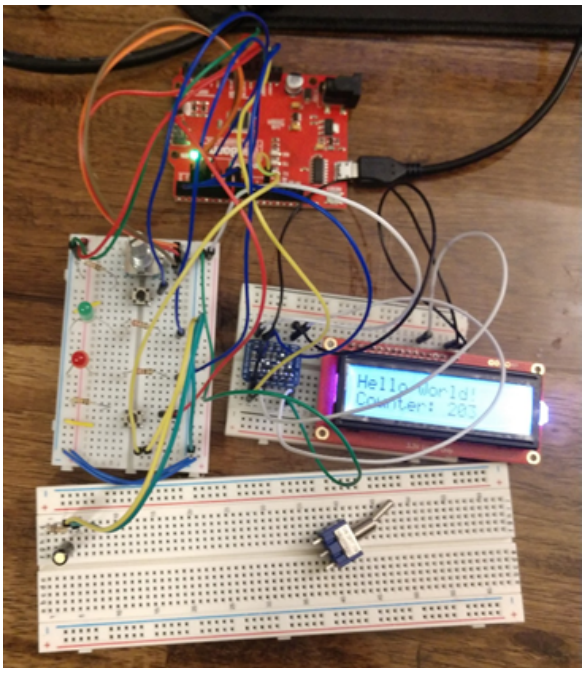
Power Supply Circuit



Tilt Switch



Buttons, Rotary Encoder, and LCD Screen

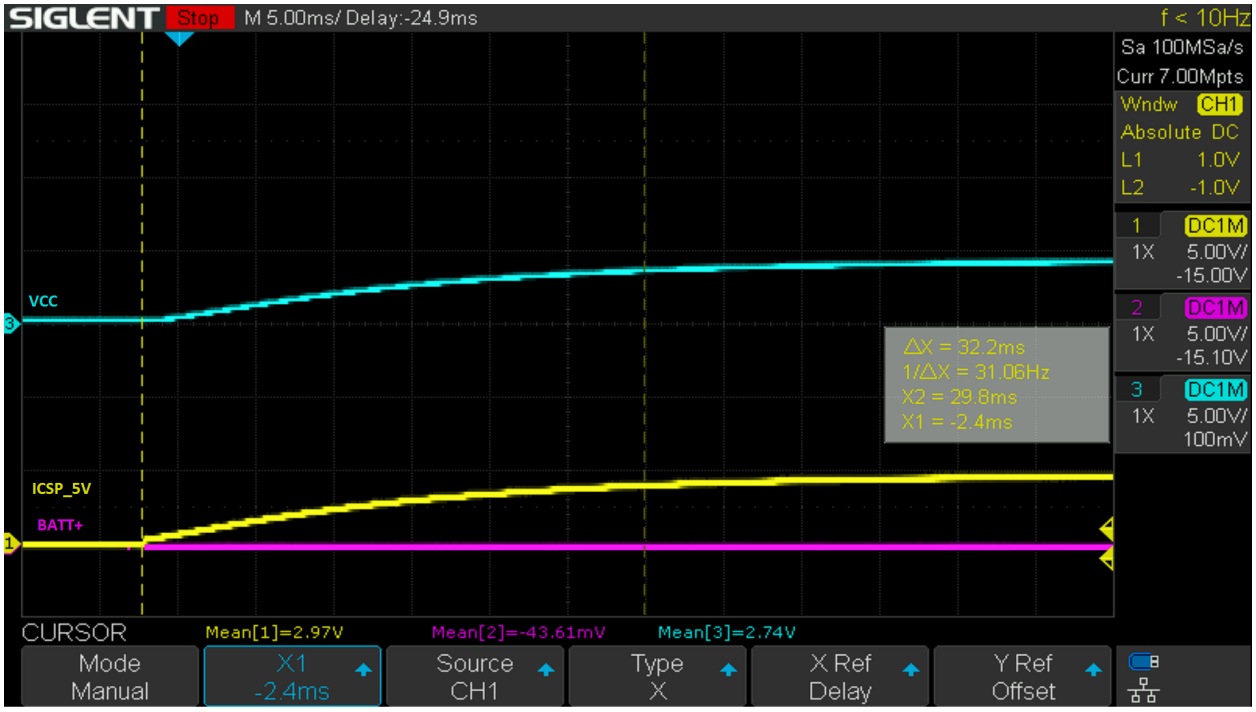


P/S Measurements

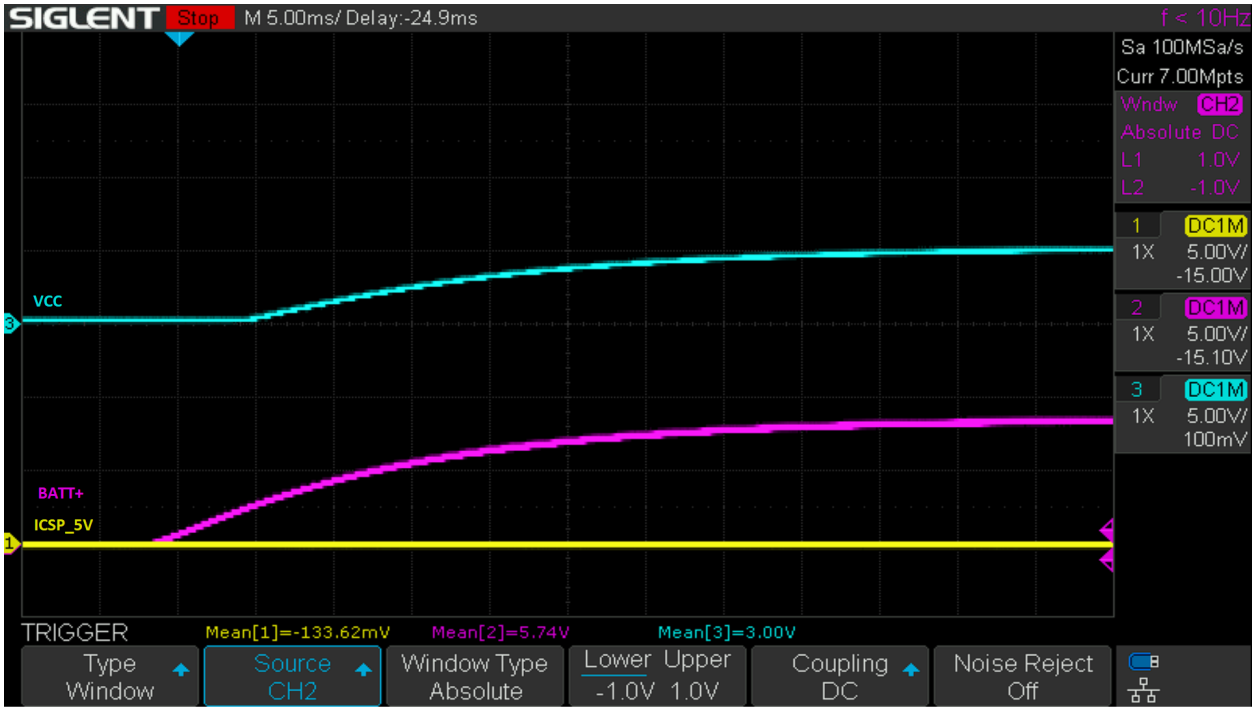
We took the following measurements of the power supply input and output voltages for initial power-on as well as switching sources. Additionally, we filmed a little demo video here:

https://youtu.be/d5VD52Cnjec

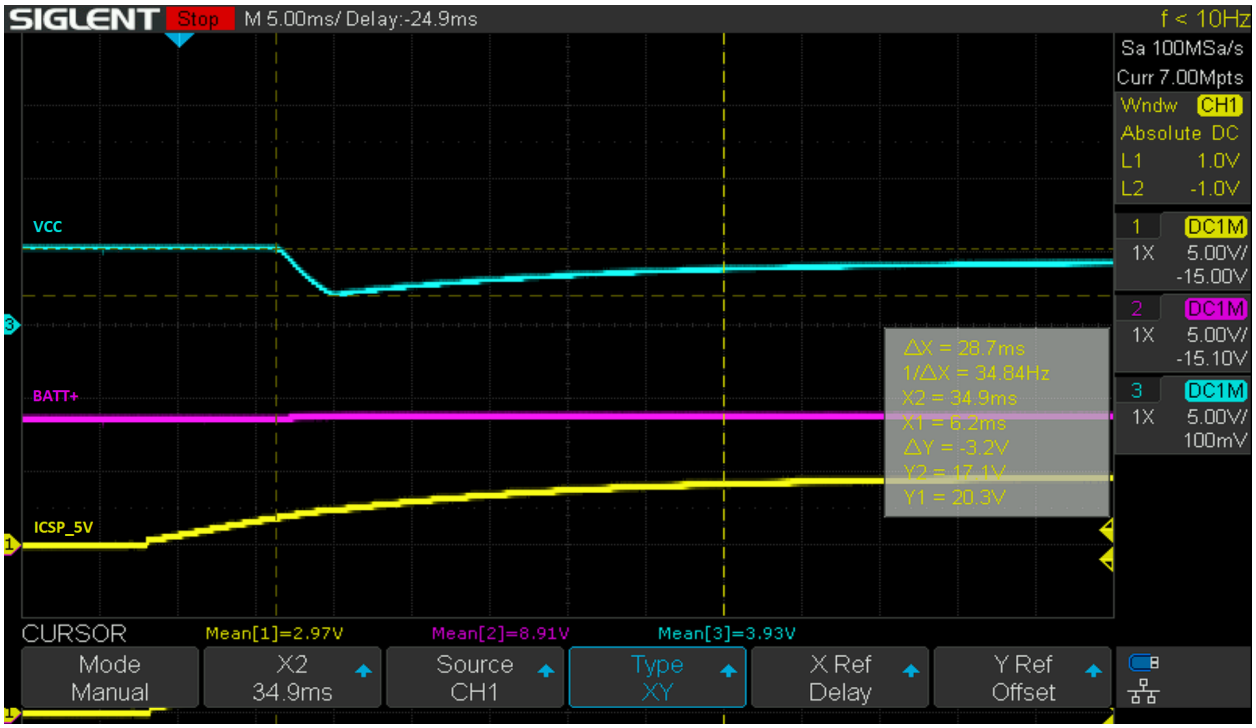
ICSP Turn-On



Battery Turn-on



VCC Switching from Battery to ICSP



VCC Switching from ICSP to Battery