# Week 2 report

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## Contents



## 1 Advance Status

**Collecting information from the sensor** I was able to read information from the sensor and send it via USB to the computer. To accomplish this, I had to:

- Debug and test the library.
- Write a program to read the data and display it on the computer.

**Stepper motor control** I have started working with the stepper motors. Unluckily I wasn't able to use the motor controller[1] that I was supposed to work with. Next week I will present other alternatives.

## 2 Comments and Thoughts

**About the library testing** At first, the library didn't worked as it was intended to. After three days of debugging and testing, it worked flawlessly. The main error was a typo in a register address. With this solved, I continued with the measurement rate testing. According to these results, the maximum measurement rate that can be achieved without affecting the sensor accuracy is approximately 250Hz.

[1] Product page at `http://www.phidgets.com/products.php?category=13&product_id=1062_1`

**About the motor controller** The problem with the motor controller is that it was intended as a USB device to control stepper motors. The MCU has built-in USB capabilities, but only as a USB device, not as a USB host. Thus, communication cannot be established between these devices e.g., it will be like trying to connect a USB keyboard to a USB mouse. Notwithstanding, before I discard this motor controller I'll seek advice from someone with more experience on this subject.

# 3 Next Steps

**Scalability** I will start working on improving the library for easier scalability. This because the number of sensors connected to a single MCU could increase in the future. Also, I'll keep scalability in mind as an important factor.

**Motor controller** I will find a solution to the motor controller problem. Then, I will start working on expanding the library to control stepper motors as well.

**Sensor bracket** Once I am able to read the sensor and control the stepper motor, I will start working on a bracket to mount the sensor on the motor shaft.