

Report Session 9

Before the session:

I couldn't make the two TOF sensors VL53L0 work together with the OLED screen so I decided to only use one because the other (on top of the slider could be replaced with a dept camera. I saw this camera (there are two) for the project of another group. Placing a camera isn't an issue because it was originally planned to place one there to read the QR codes on the racks and the boxes.

I started thinking about which information would be displayed on the screen and writing a code to have a visual representation. On the image bellow we can see in yellow information about the height pf the platform (H:xxxx displayed in mm) then D stands for the position of the slider can be represented in mm or in percentage and finally p is a Boolean variable indicating if a package is on the robot. The first line in blue will display the statue of the slider (picking up a package, dropping a package etc) and the second line in blue will be information about the platform (going up/down, staying at a certain position etc).

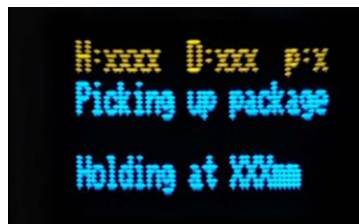


Figure 1 OLED information display

During the session:

I started by trying to use a new module to control the stepper that is way smoother, powerful, and precise. This module called Silent2226 will replace the a4988 from pololu. It has the same pin layout as the older driver except for two new pins that aren't used in my case and the enable pin should be connected to the ground. I had some trouble first using it because I had done some wrong wiring but after fixing it the driver worked perfectly and by using microsteps on the stepper it runs way more smoothly without any vibrations. I then placed in my pcb, welded the enable pin to the ground and it worked perfectly.

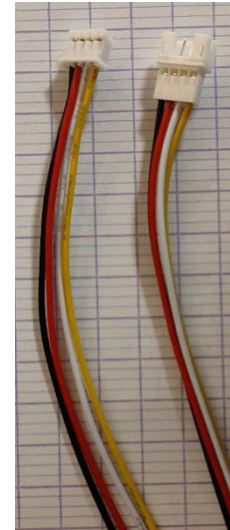
After this I went on with the welding and added an SDA/SCL input to my pcb with of course the pullup resistors and tree outputs connected. The PCB is pretty much done for now, so I drilled to holes and placed it on the prototype of the project.

I also started making a wiring diagram as you can see on the image bellow, each point corresponds to a screw connector on the pcb. On the left we have all the outputs and on the right, we have all the outputs, their pin on the Arduino and if it is a I/O or pwm. Also, the colors on

the full right correspond to which outputs are on the same connector (we have 4 wires connectors as shown on the image below).

step noir	•	•	step dir	S3	I/O
step bleu	•	•	step cmel	S2	I/O
step vert	•	•	light dir	S1	I/O
step rouge	•	•	light pwm	2	PWM
valve bleu	•	•	valve	49	I/O
pump vert	•	•	pump	48	I/O
	•	•	ls light	47	I/O
CND	•	•	ls light	46	I/O
5V					
12V			ls slider	45	I/O
SDA	•	•	ls slider	44	I/O
SDA	•	•	SDA	SDA	SDA
SDA	•	•	SCL	SCL	SCL
SCL	•	•	led Blue	3	PWM
SCL	•	•	led Green	4	PWM
SCL	•	•	led Red	5	PWM
	•	•		50	I/O
	•	•			

Figure 2 wiring diagram



4 for male and female connectors