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Arduino Controlled DigiLO

Portable WSS
(Weak Signal Source)

Arduino Controlled DigiLO

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- Q5Signal DigiLO
  - VCO Voltage Controlled Oscillator
  - 2 Form factors
    - Fully produced with dip settings
    - Raw board
  - Used in the DEMI 10 GHZ kit

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- Controlling the frequencies

digiLO Frequency Table for Firmware v19.9.1										
INDEX	FREQ	FREQ SELECT JUMPERS								SUGGESTED APPLICATION
		7	6	5	4	3	2	1	0	
0	116.000									144-28
1	194.000								X	222-28
2	404.000							X		432-28
3	758.000							X	X	902-144
4	874.000						X			902-28
5	759.000						X		X	903-144
6	875.000						X	X		903-28
7	1152.000						X	X	X	1296-144
8	1268.000					X				1296-28
9	2160.000					X			X	2304-144
10	2276.000					X		X		2304-28
11	3312.000					X		X	X	3456-144
12	3428.000					X	X			3456-28
13	5616.000					X	X		X	5760-144
14	5732.000					X	X	X		5760-28
16	130.000				X					144-14

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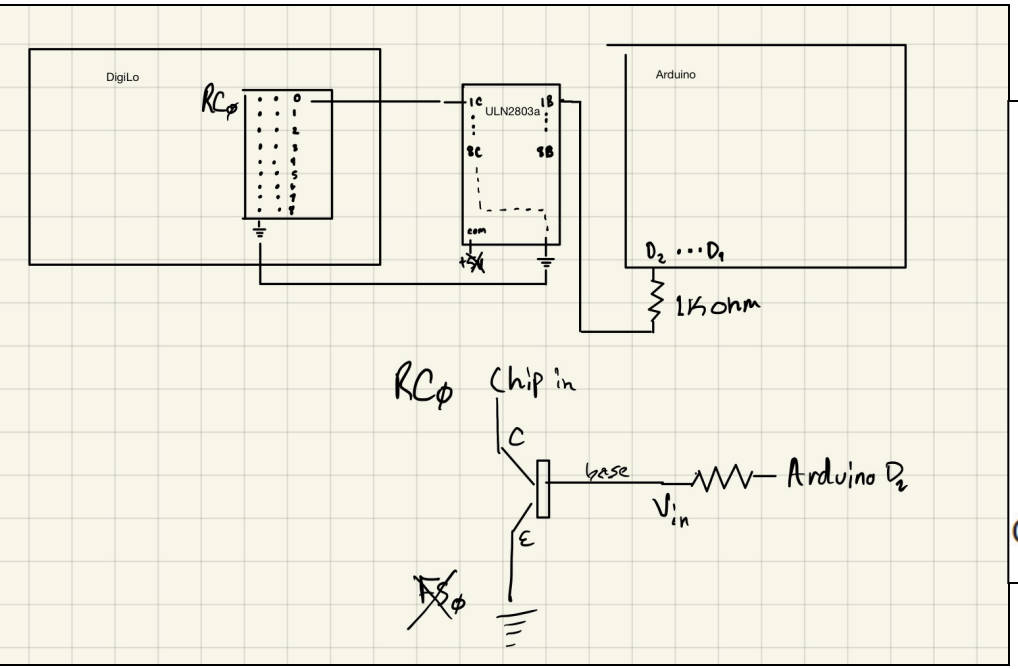
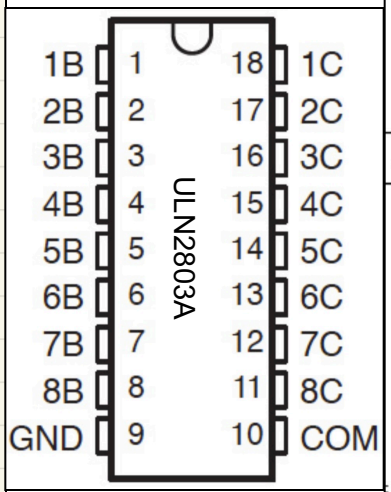
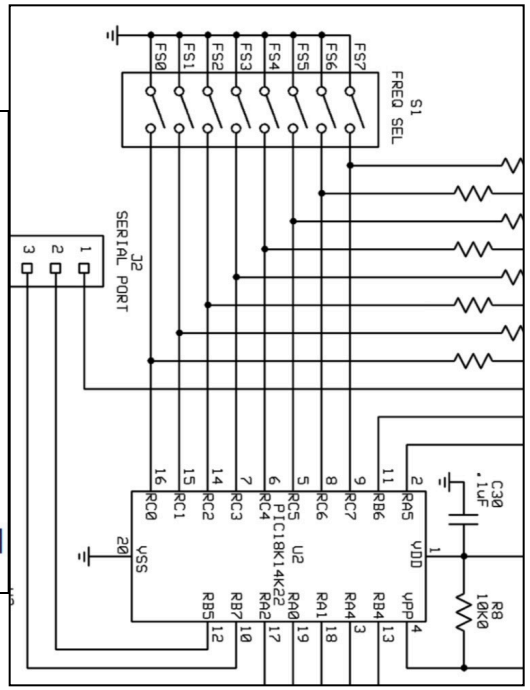
- Using the Arduino to set the jumper values
  - Transistor array (ULN2803A)







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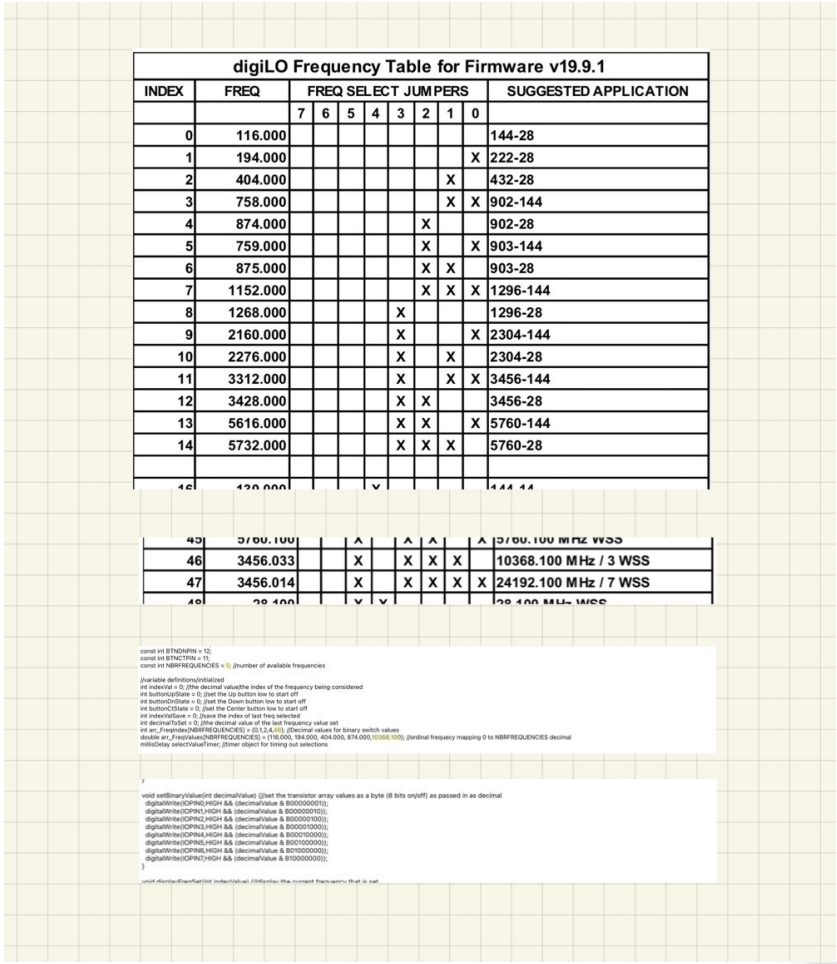
- The Arduino sketch
  - A byte is handy
  - Decimal values are converted to binary to set the digital I/O pins on the Arduino.



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13	5616.000					X	X		X	5760-144
14	5732.000					X	X	X		5760-28
46	3456.033				X		X	X	X	10368.100 MHz / 3 WSS
47	3456.014				X		X	X	X	X 24192.100 MHz / 7 WSS

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- Parts List
  - Q5Signal DigiLO
  - Arduino Nano
  - ULN2803A 18 Pin (2 form factors PCB Dip or SMA Breadboard Module)
  - IC2 Display .91 Inch OLED (Blue Display Color)
  - 1 5-Way Tactile Switch (Up/Down/Left/Right/Center Click)
  - 2 Female SMA Through-hole PCB Edge Mount Solder-In Type
  - 2”x3” Solder Perf Board
  - 1 5mm 3-Pin Dual Bi-Color Diffused Common Cathode LED (Red/Green)
  - Right angle Single Row 40-pin 2.54 Male Header (Pack of 10)
  - Straight Single Row 40-pin Male Header (Pack of 10)
  - 8 1/4W 1K Ohm Resistors (2 form factors, thru-hole or 1206 SMD)
  - 3.94”x2.36”x0.98” Plastic Enclosure Case Junction DIY Project Box
  - Short and Medium Length Female-Female Breadboard Jumper Wires
  - DC Power Socket Connector, Threaded 5.5mmx2.1mm Female Panel Mounting Adapter Power Jack
  - Optional 12V to 9V 1.7A Step-Down Miniature DC-DC Converter Power Supply Module

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- Final Assembly & Testing

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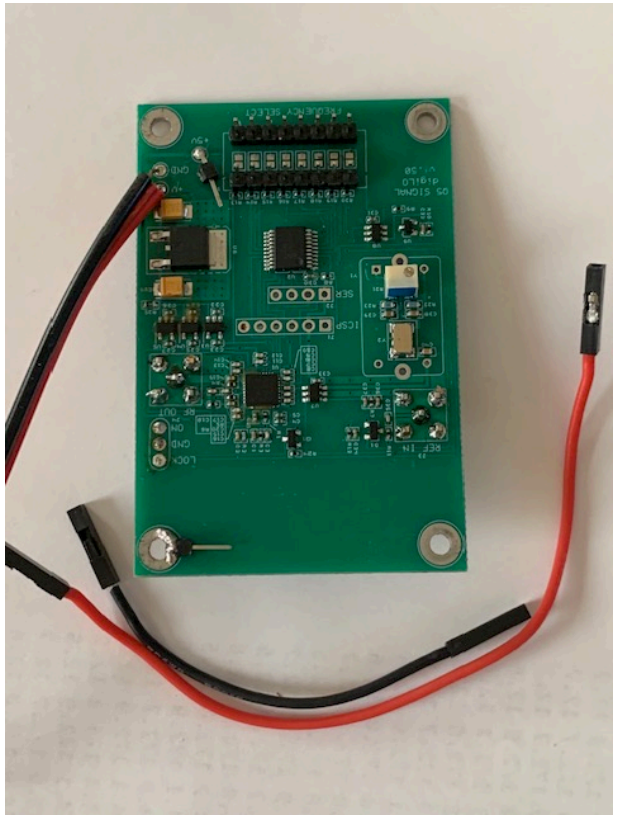
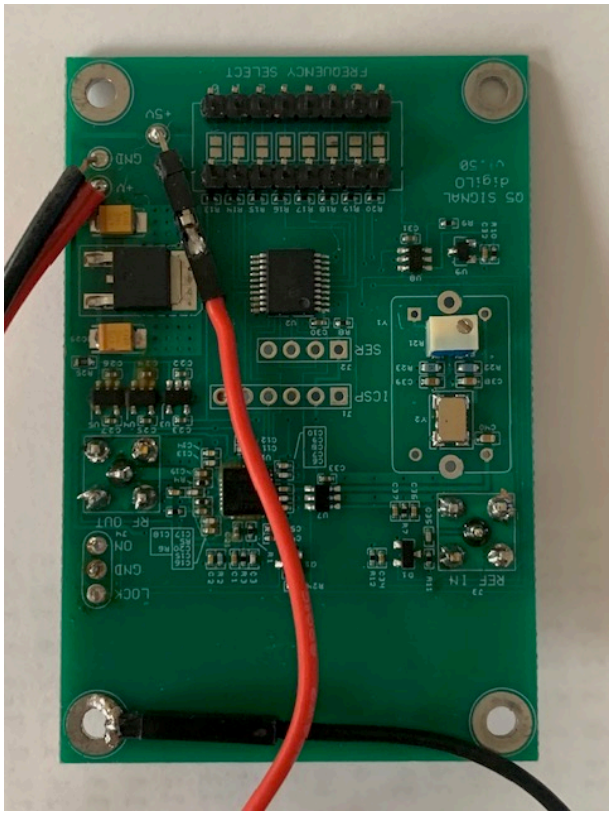
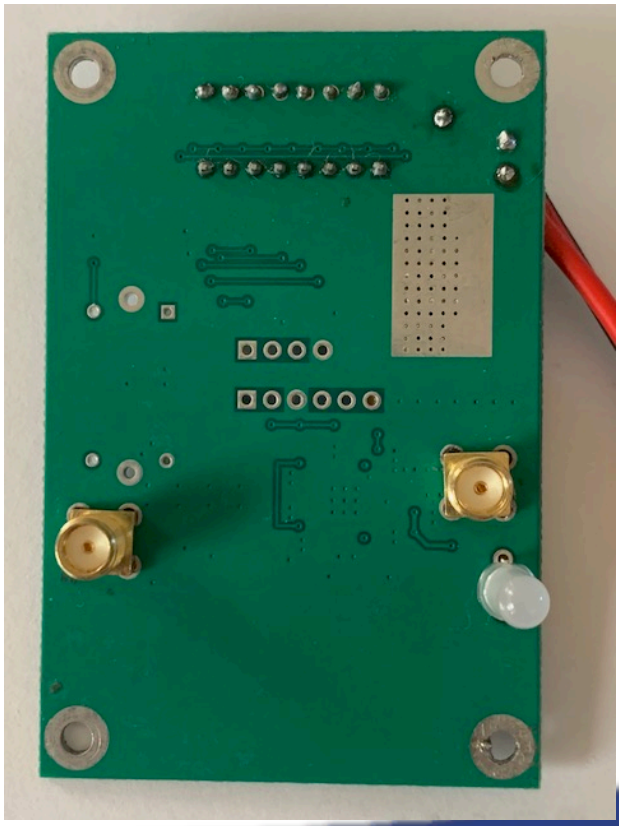
Prepping the DigiLO







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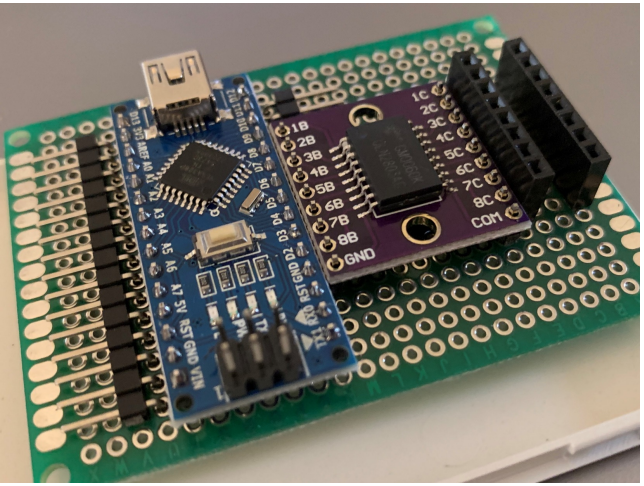
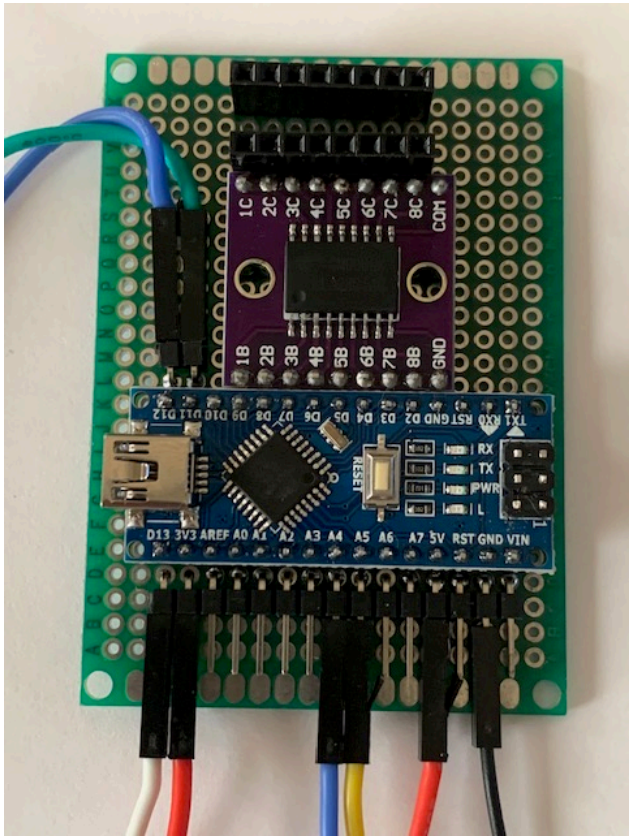
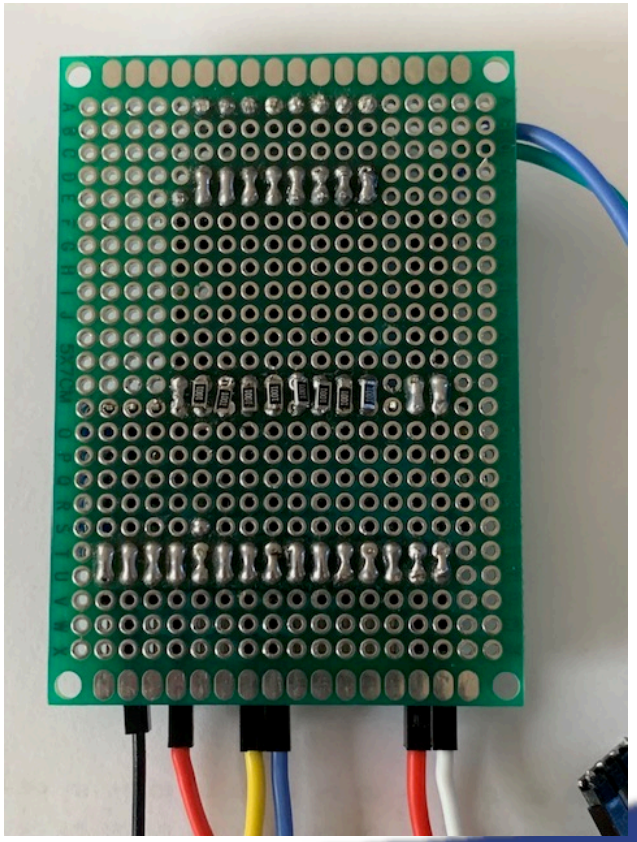
Prepping the Arduino & Transistor Array Project Board







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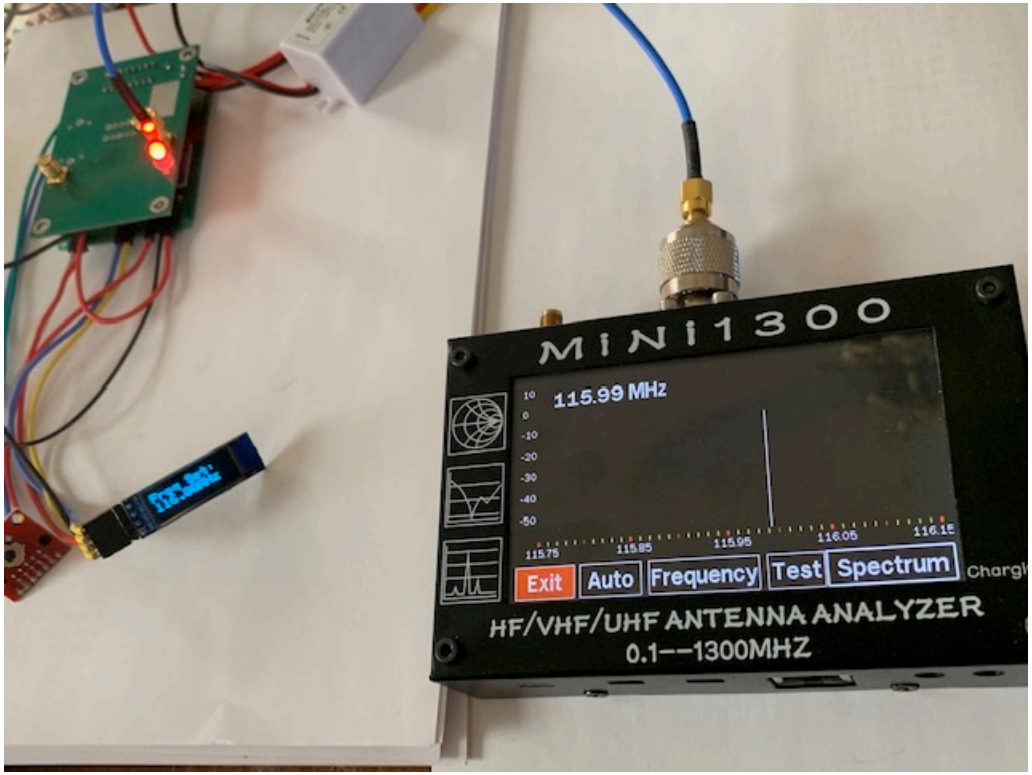
Testing



Final Assembly

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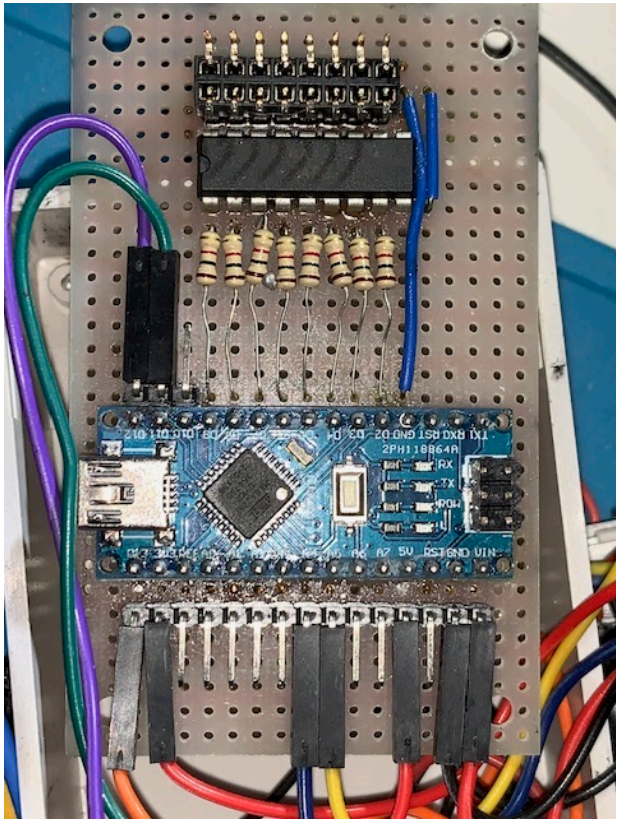
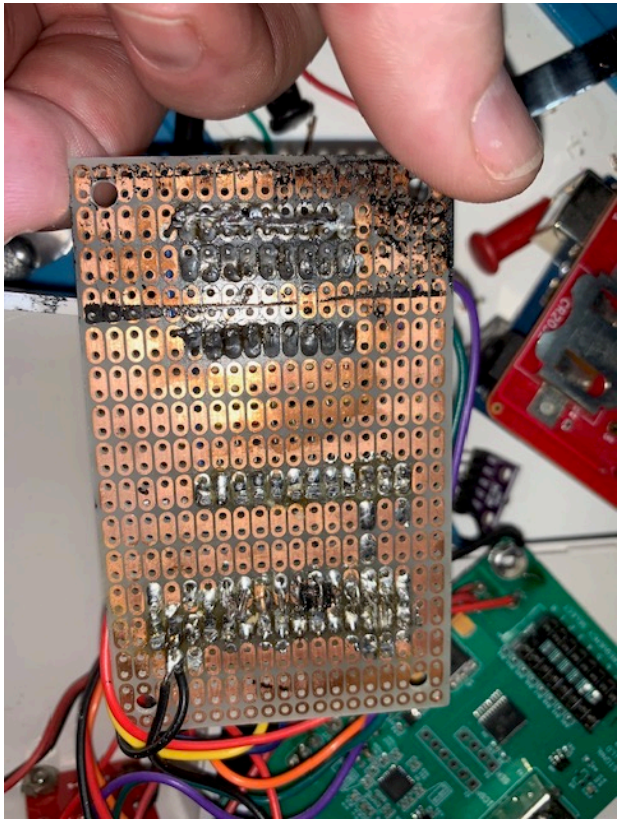
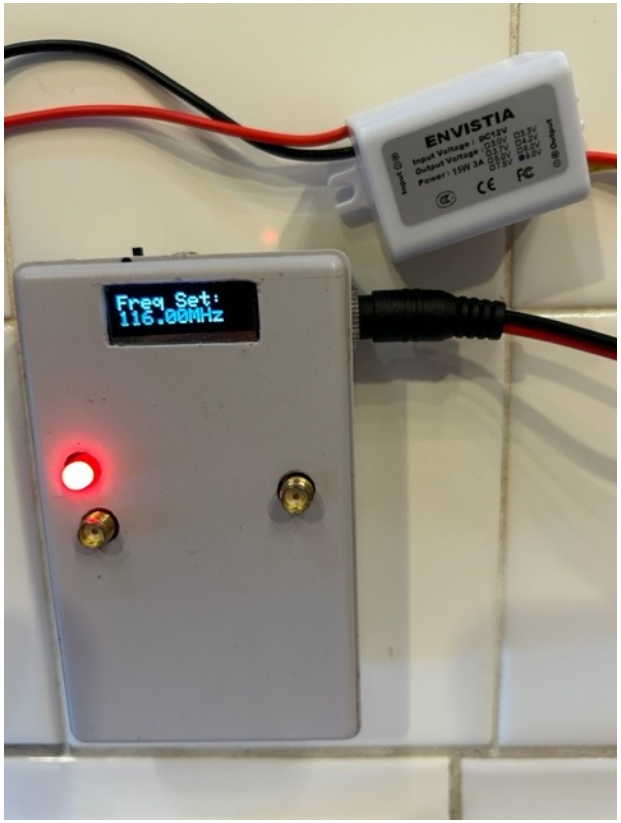
First Example - Front



First Example - Back



First Example – Completed



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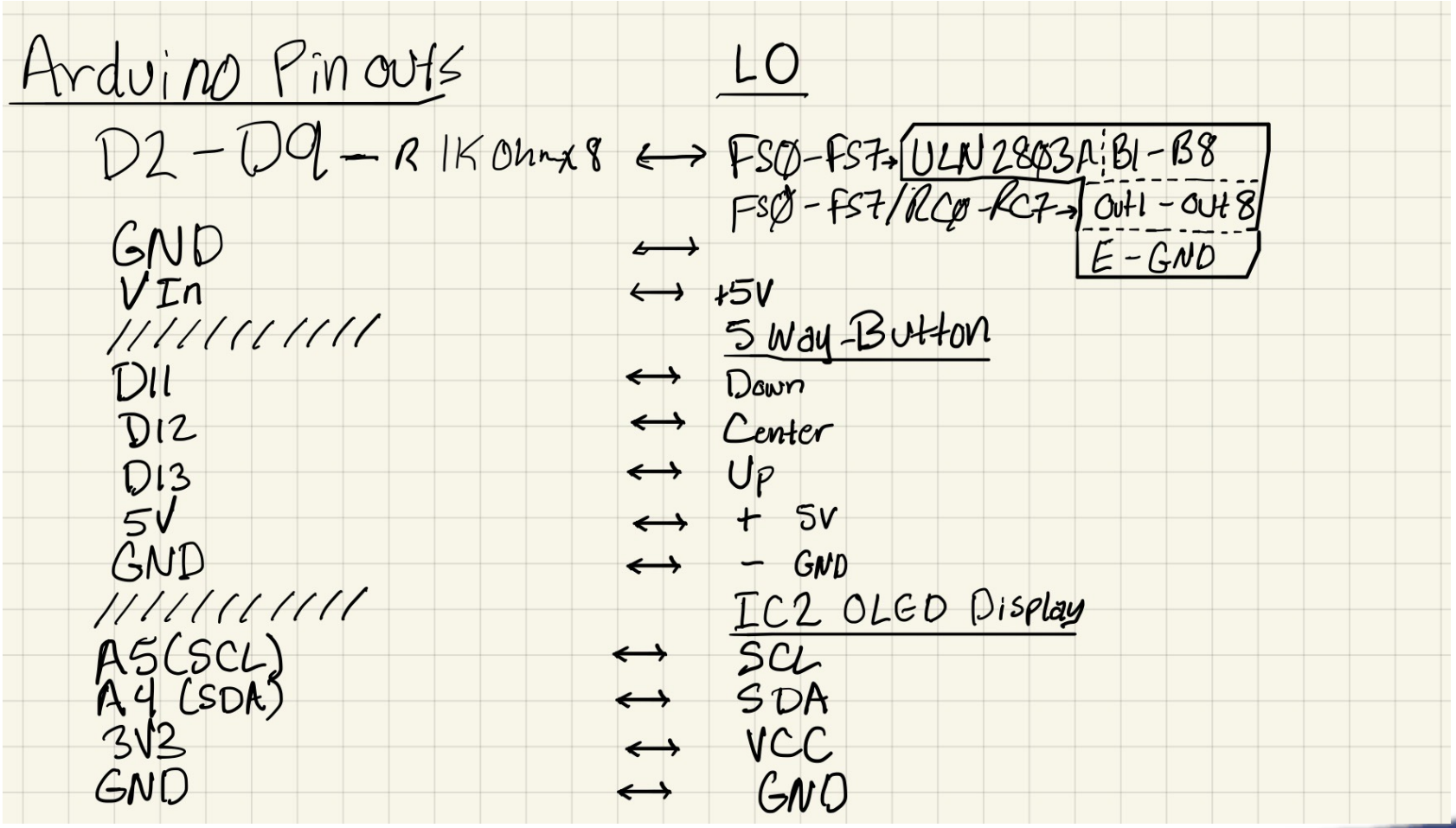
Arduino Pinouts



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- Future consideration
  - Digital pin consumption – shift registers
  - Driving high voltage devices simultaneously

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Questions?