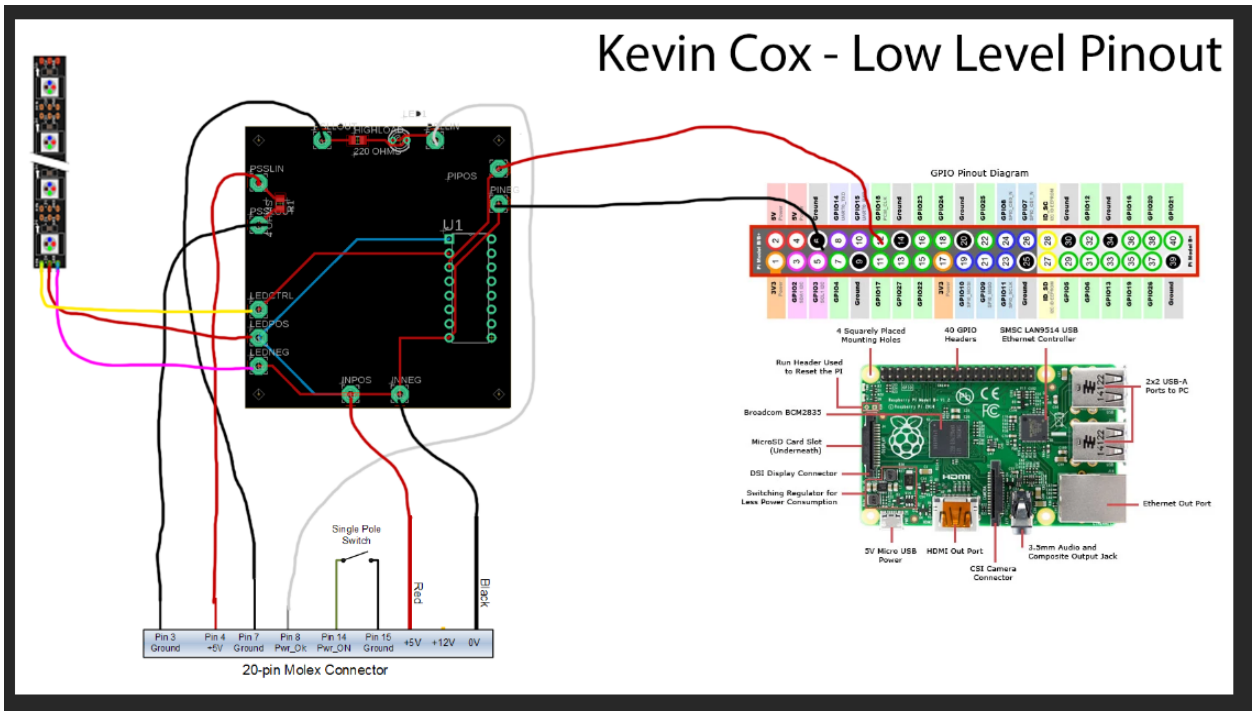
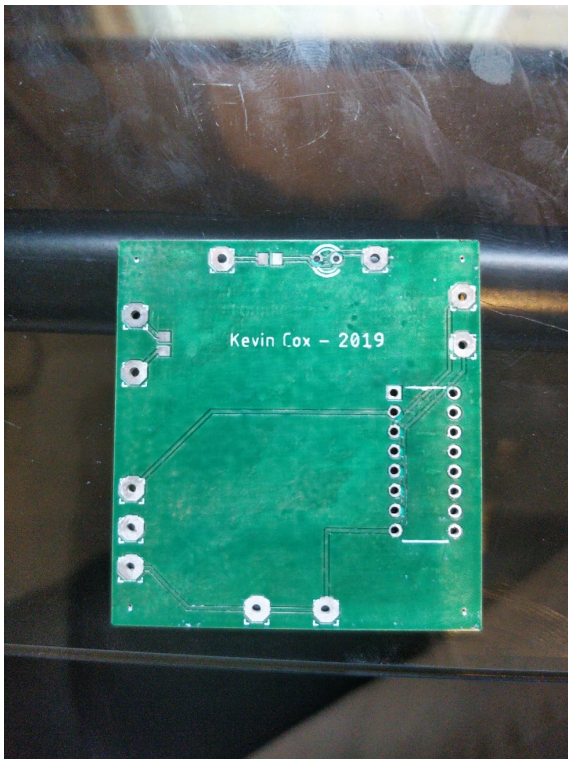
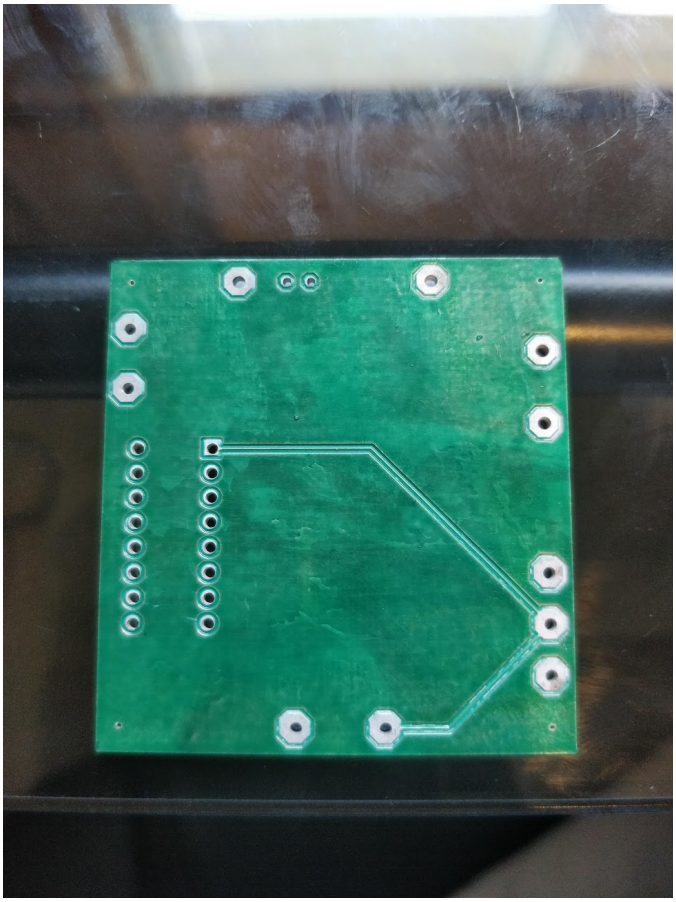
Low Level Hardware Diagram



Pre-soldered PCB Board

Frontside - 

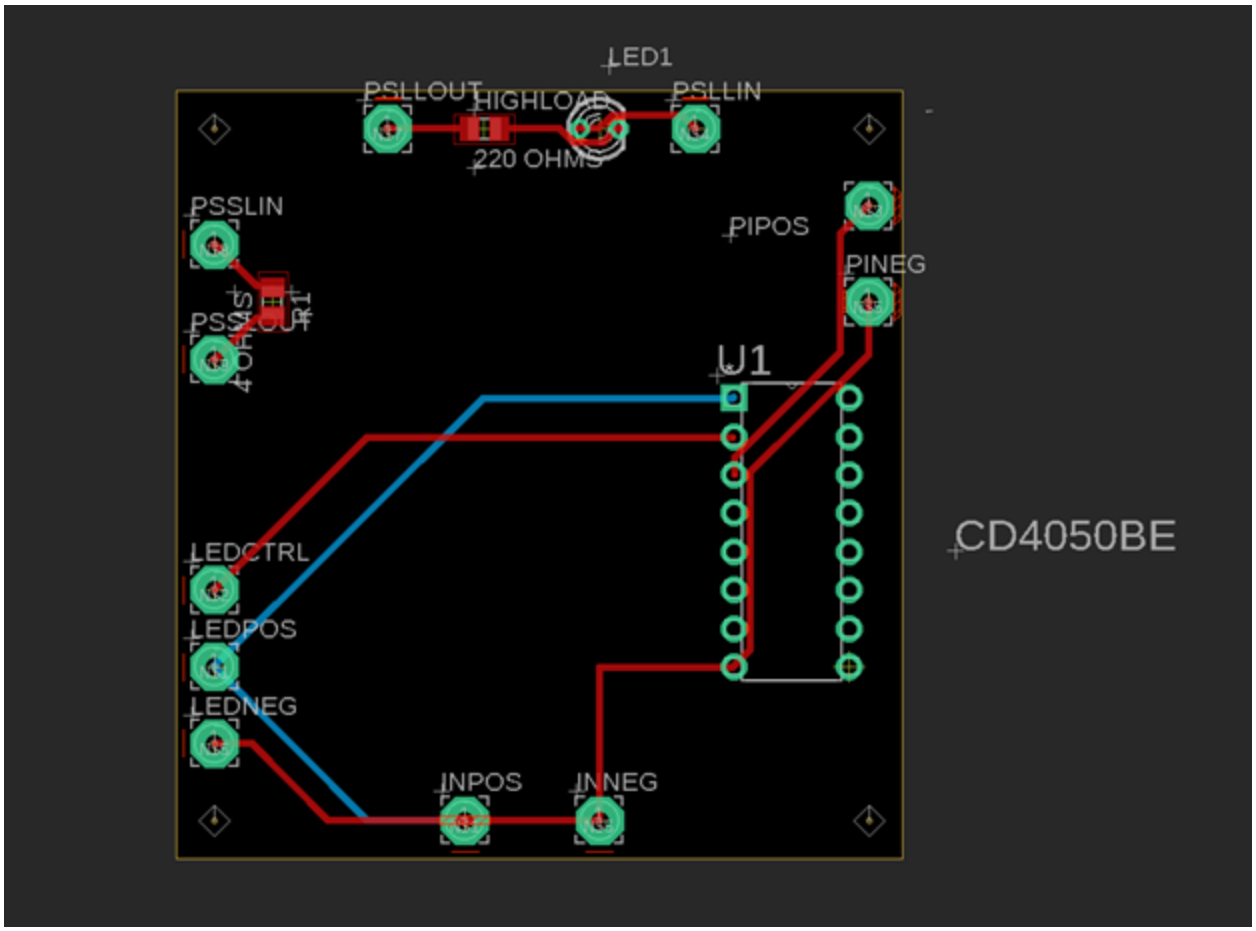
Backside - 

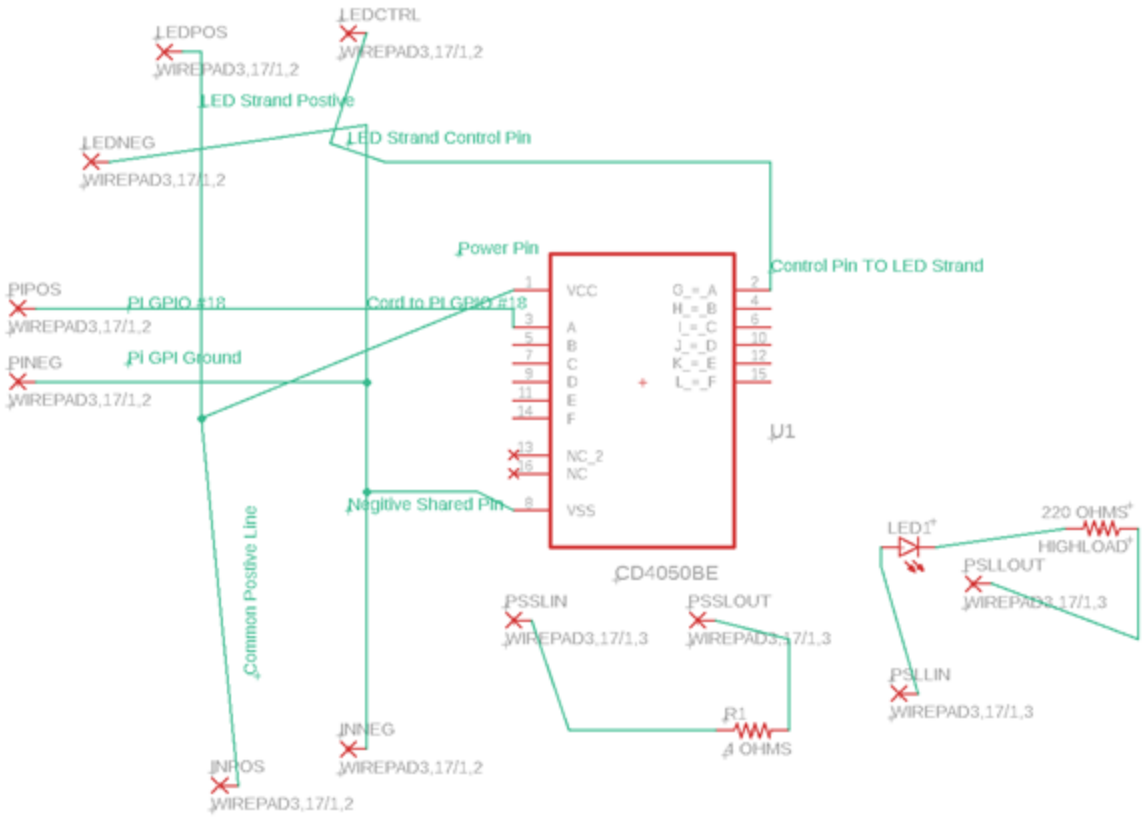
Custom PCB Circuit

List of Components Used:

Component Name	Component Purpose	Additional Info
LED	Display if the board is in operation and to provide small load	N/A
220 Ohm Resistor	To apply a large load to keep the ATX power supply on	N/A
4 Ohm Resistor	To apply a small load to the 5V ATX channel. Keeps the rail on.	Convert ATX PSU to Bench Supply to Power Circuits

Voltage Regulator Cd4050be	The raspberry pi is controlled at 3.3 volts while the strip is controlled at 5. We must convert the 3.3V to 5V for the strip.	http://www.ti.com/lit/ds/symlink/cd4049ub.pdf

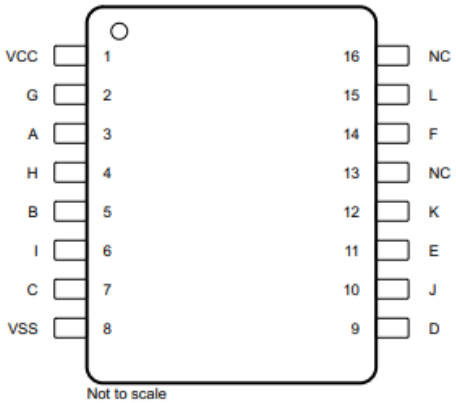




Voltage Regulator (cd4050be) Pinout

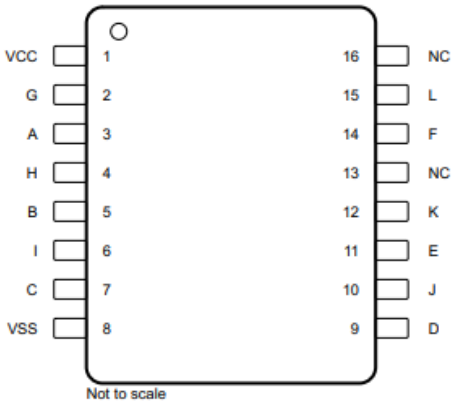
5 Pin Configuration and Functions

CD4049UB
D, DW, N, NS, and PW Packages
16-Pin SOIC, PDIP, SO, and TSSOP
Top View



Not to scale

CD4050B
D, DW, N, NS, and PW Packages
1G6-Pin SOIC, PDIP, SO, and TSSOP
Top View



Not to scale

Pin Functions: CD4049UB

PIN		I/O	DESCRIPTION
NAME	NO.		
A	3	I	Input 1
B	5	I	Input 2
C	7	I	Input 3
D	9	I	Input 4
E	11	I	Input 5
F	14	I	Input 6
G	2	O	Inverting output 1. G = $\overline{A}$
H	4	O	Inverting output 2. H = $\overline{B}$
I	6	O	Inverting output 3. I = $\overline{C}$
J	10	O	Inverting output 4. J = $\overline{D}$
K	12	O	Inverting output 5. K = $\overline{E}$
L	15	O	Inverting output 6. L = $\overline{F}$
NC	13, 16	—	No connection
VCC	1	—	Power pin
VSS	8	—	Negative supply