

Prelab 4 Digital to Analog Conversion

Nolan Anderson

February 9, 2021

Input State					Simulation	Theoretical
	V _A	V _B	V _C	V _D	V _O (V)	V _O (V)
0	0	0	0	0	2.021 mV	0
1	0	0	0	1	0.310	0.3125
2	0	0	1	0	0.623	0.625
3	0	0	1	1	0.935	0.9375
4	0	1	0	0	1.248	1.25
5	0	1	0	1	1.560	1.5625
6	0	1	1	0	1.873	1.875
7	0	1	1	1	2.185	2.1875
8	1	0	0	0	2.498	2.5
9	1	0	0	1	2.810	2.8125
10	1	0	1	0	3.123	3.125
11	1	0	1	1	3.435	3.4375
12	1	1	0	0	3.748	3.75
13	1	1	0	1	4.060	4.0625
14	1	1	1	0	4.373	4.375
15	1	1	1	1	4.685	4.6875

Figure 1: Input State / Output, Theoretical vs Simulation.

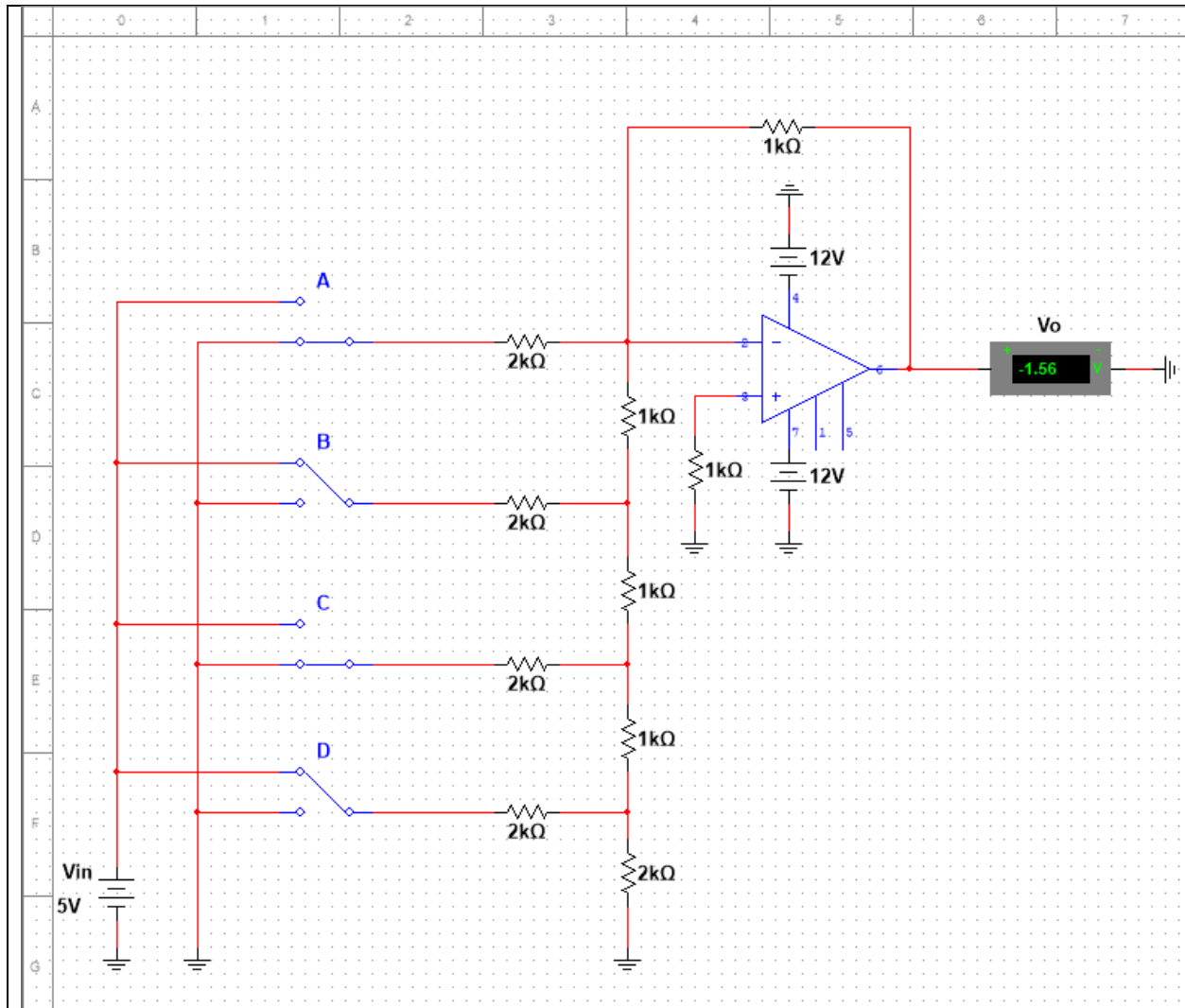


Figure 2: DAC Using an Op-Amp – Multisim Configuration 5.

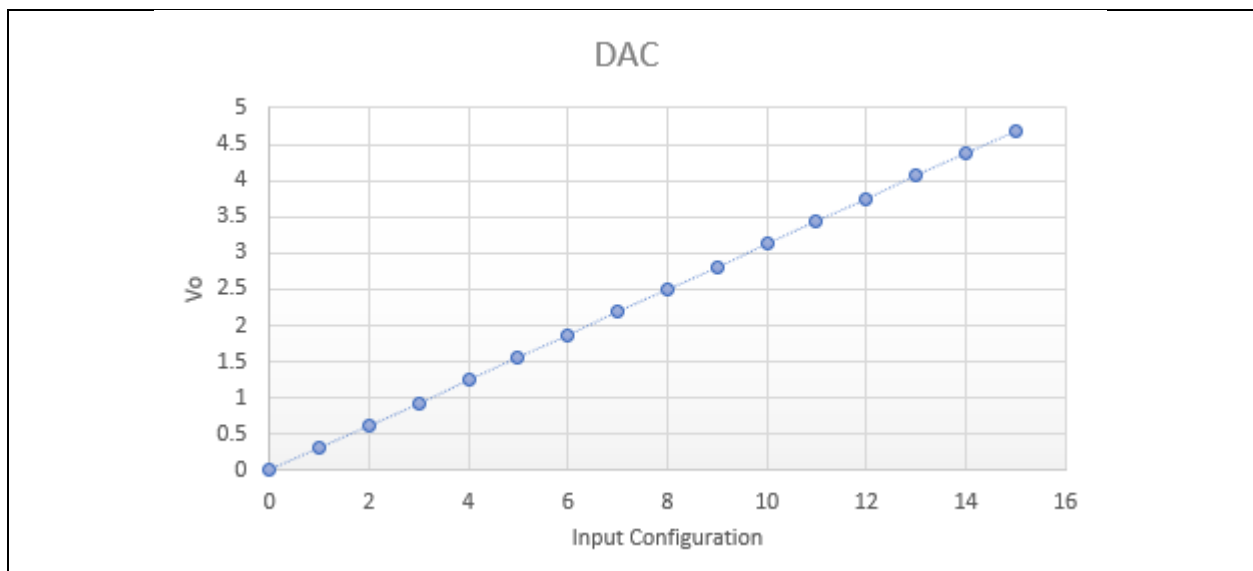


Figure 3: DAC Input Configuration and Vo output

