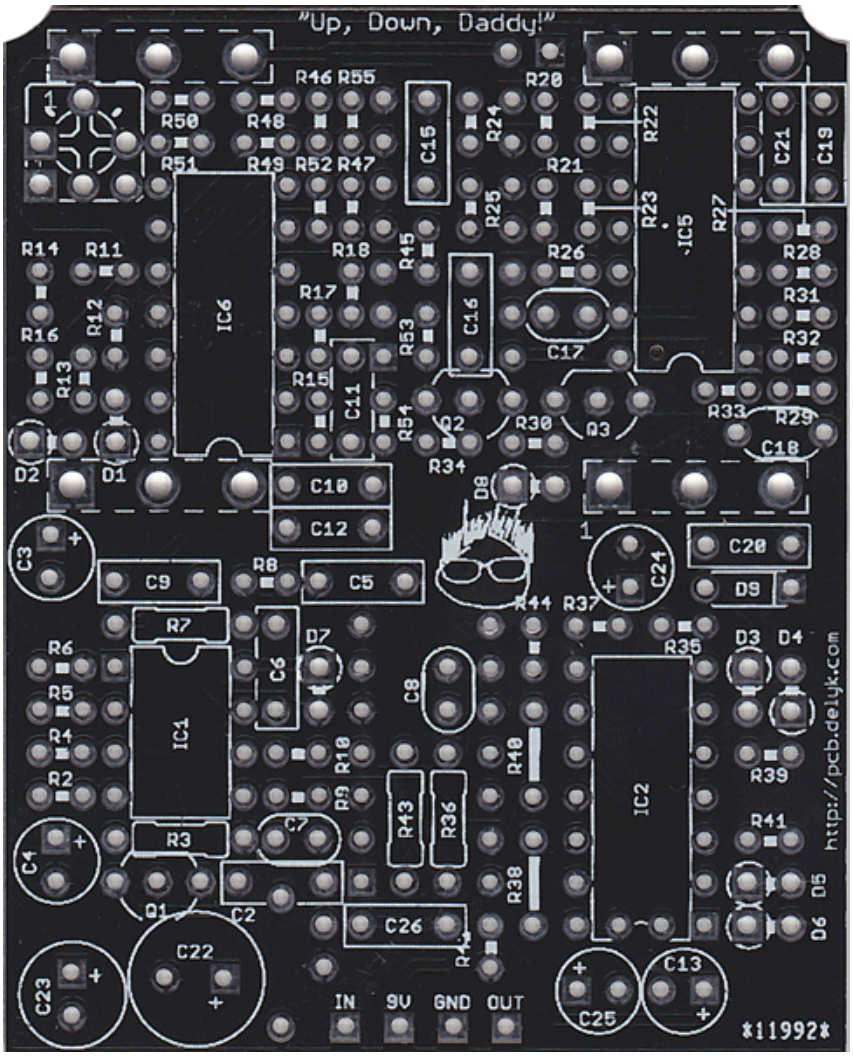


“Up, Down, Daddy!”

Build Document

Introduction

I became interested in this effect after hearing a demo clip of the madbean Low Rider. After a bit more research, I realized that gaussmarkov had created a schematic for us. The only catch was: I didn't want it in a 1590BB. I wanted to see if we could put it in a 1590B.

Well, it's complicated, and it sure looks like perfboard, and it's a tight fit, but it is possible to fit this in a 1590B.

Take your time. It's not an easy build. It worked for me the first time, thankfully! However, it's double-sided, and parts are "intermingled." So plan it out. **Be sure to use sockets.**

Bill of Materials

Capacitors

I obtained all of my caps from Tayda. That's what the layout was setup for.

P/N	Value	Type	Notes
C1	330pF	Ceramic	
C2	33nF	Film Box	
C3	1uF	Aluminum Electrolytic	
C4	10uF	Aluminum Electrolytic	
C5	10nF	Film Box	
C6	2n2	Film Box	
C7	220pF	Ceramic	
C8	330pF	Ceramic	
C9	100nF	Film Box	
C10	10nF	Film Box	
C11	47nF	Film Box	
C12	33nF	Film Box	
C13	1uF	Aluminum Electrolytic	
C14	1uF	Aluminum Electrolytic	The silkscreen shows this on the same side as the pots. **Do not do this.** Be sure to solder this cap so that it is opposite the pots.
C15	22nF	Film Box	
C16	4n7	Film Box	
C17	470pF	Ceramic	
C18	1uF	Ceramic	
C19	47nF	Film Box	
C20	10nF	Film Box	
C21	1nF	Film Box	
C22	220uF	Aluminum Electrolytic	
C23	100uF	Aluminum Electrolytic	
C24	1uF	Aluminum Electrolytic	
C25	1uF	Aluminum Electrolytic	
C26	10nF	Film Box	

Diodes

I obtained all of my diodes from Tayda. That's what the layout was setup for.

P/N	Value	Notes
D1	1N4148	
D2	1N4148	
D3	1N4148	
D4	1N4148	
D5	1N4148	
D6	1N4148	
D7	1N4148	
D8	1N34A	
D9	1N34A	

Integrated Circuits

I obtained all of my integrated circuits from Tayda. That's what the layout was setup for.

P/N	Value	Notes
IC1	TL072	
IC2	LM324	
IC3	CD4013	
IC4	CD4013	
IC5	TL074	
IC6	TL074	

Transistors

JFETs are getting hard to find. I found mine on eBay or mklec. Smallbear may even have them. You may consider trying MPF102s from Tayda; I haven't personally tried them.

P/N	Value	Notes
Q1	J201	
Q2	2N5457	
Q3	2N5457	

Resistors

Personally, I don't like to stand up resistors. However, it was the only way I could get this circuit to fit in a 1590B.

P/N	Value
R1	1k
R2	1M
R3	10k
R4	1M
R5	2k7
R6	10k
R7	22k
R8	330k
R9	330k
R10	33k
R11	1M
R12	10k
R13	10k
R14	10k
R15	24k
R16	10k
R17	220k
R18	5k6
R19	100k
R20	47k
R21	47k
R22	27k
R23	100k
R24	22k
R25	330k
R26	330k
R27	47k
R28	47k
R29	27k
R30	100k
R31	22k
R32	330k
R33	330k
R34	10k
R35	12k
R36	33k
R37	1M
R38	1k
R39	10k
R40	1k
R41	10k

R42	68k
R43	33k
R44	33k
R45	1M
R46	120k
R47	1M
R48	220k
R49	56k
R50	100k
R51	10k
R52	10k
R53	1M
R54	1M
R55	160k

Potentiometers

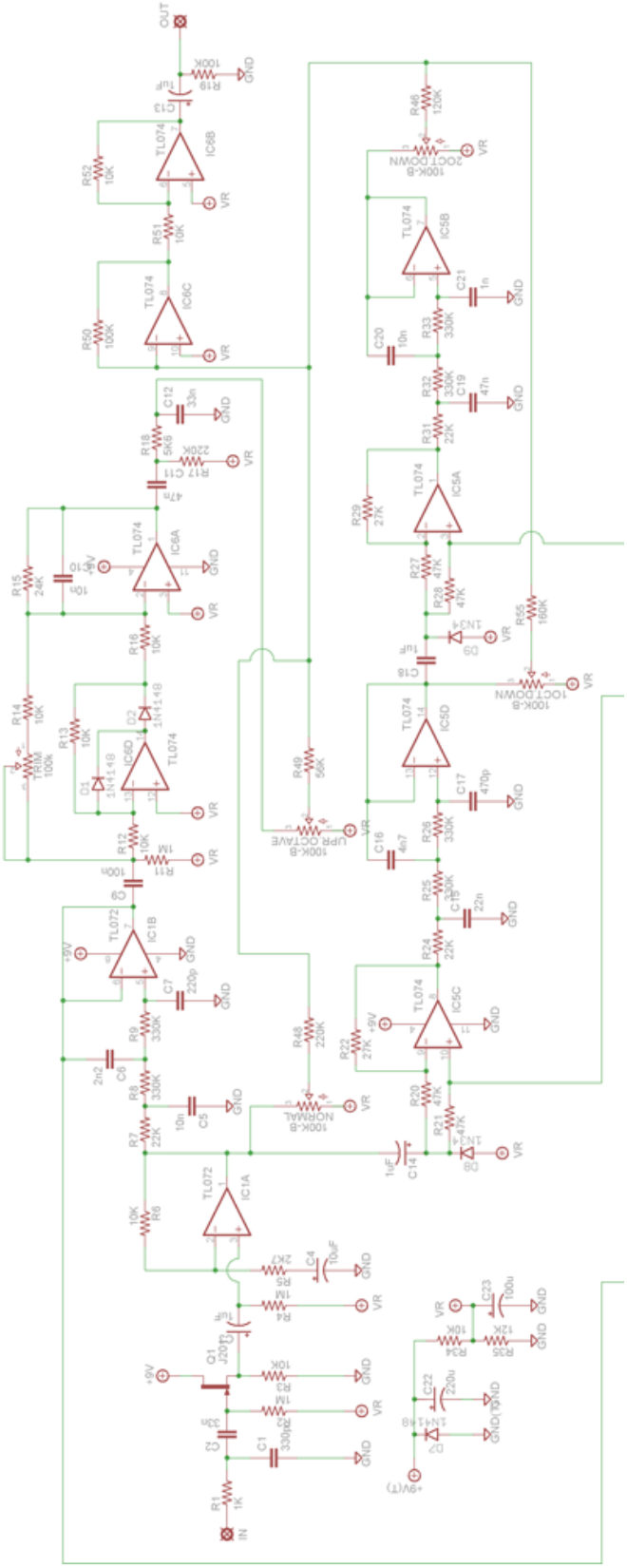
I obtained all of my potentiometers from Tayda. That's what the layout was setup for.

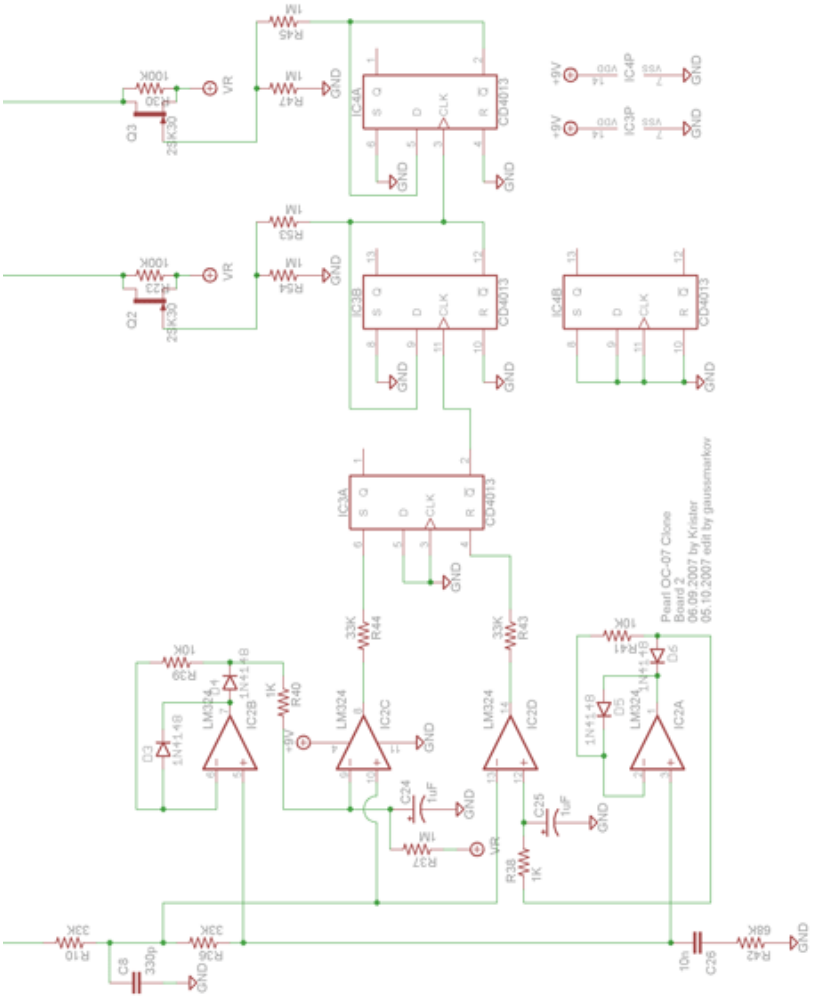
P/N	Value	Notes
NORMAL	B100k	
1OCT.DOWN	B100k	
2OCT.DOWN	B100k	
UPR.OCTAVE	B100k	
TRIM	100k	Trimpot.

Other Parts

Qty	Value	Notes
3	8-pin socket	1 for the TL072, and the other two can be used for the transistors.
5	14-pin socket	

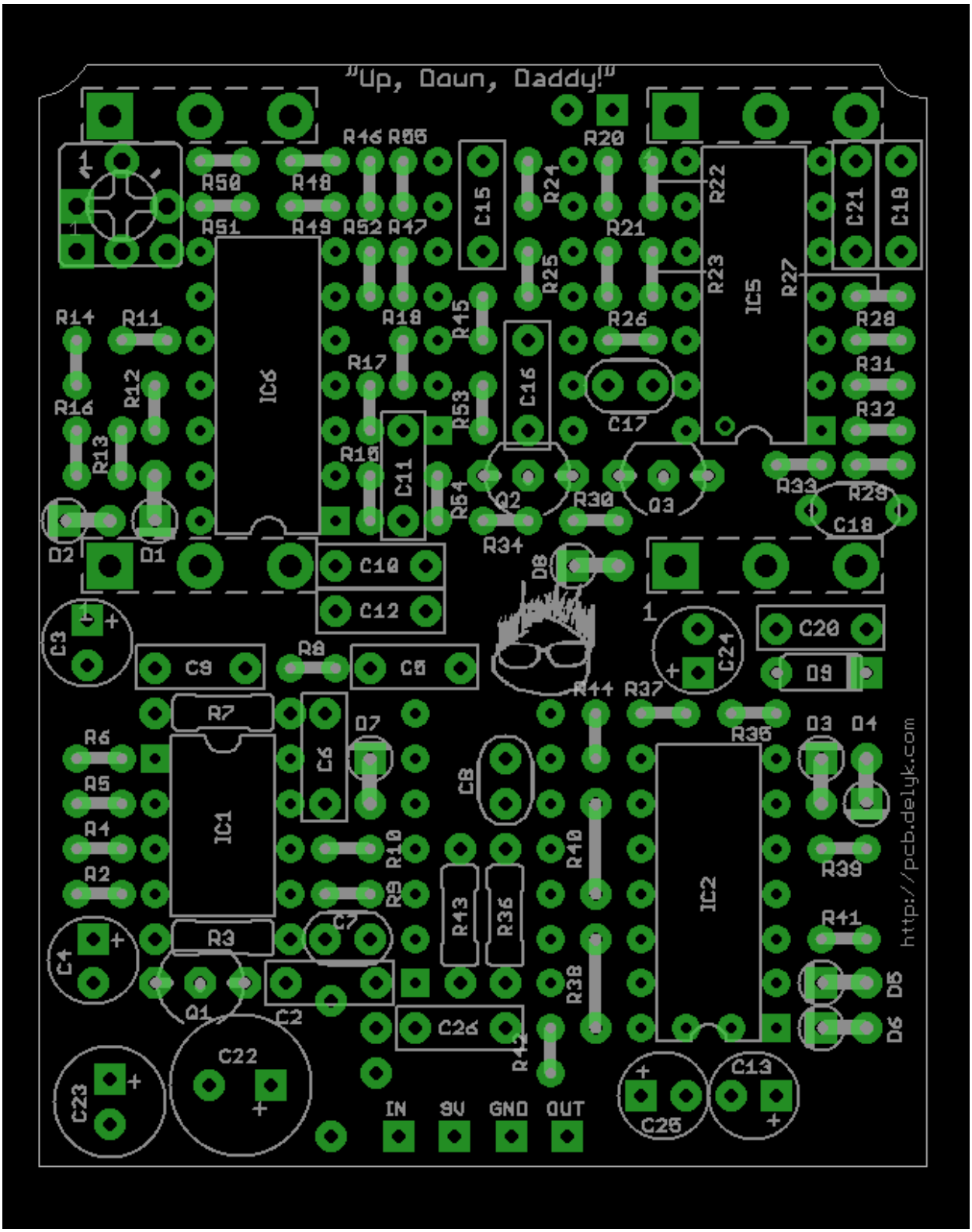
Schematic

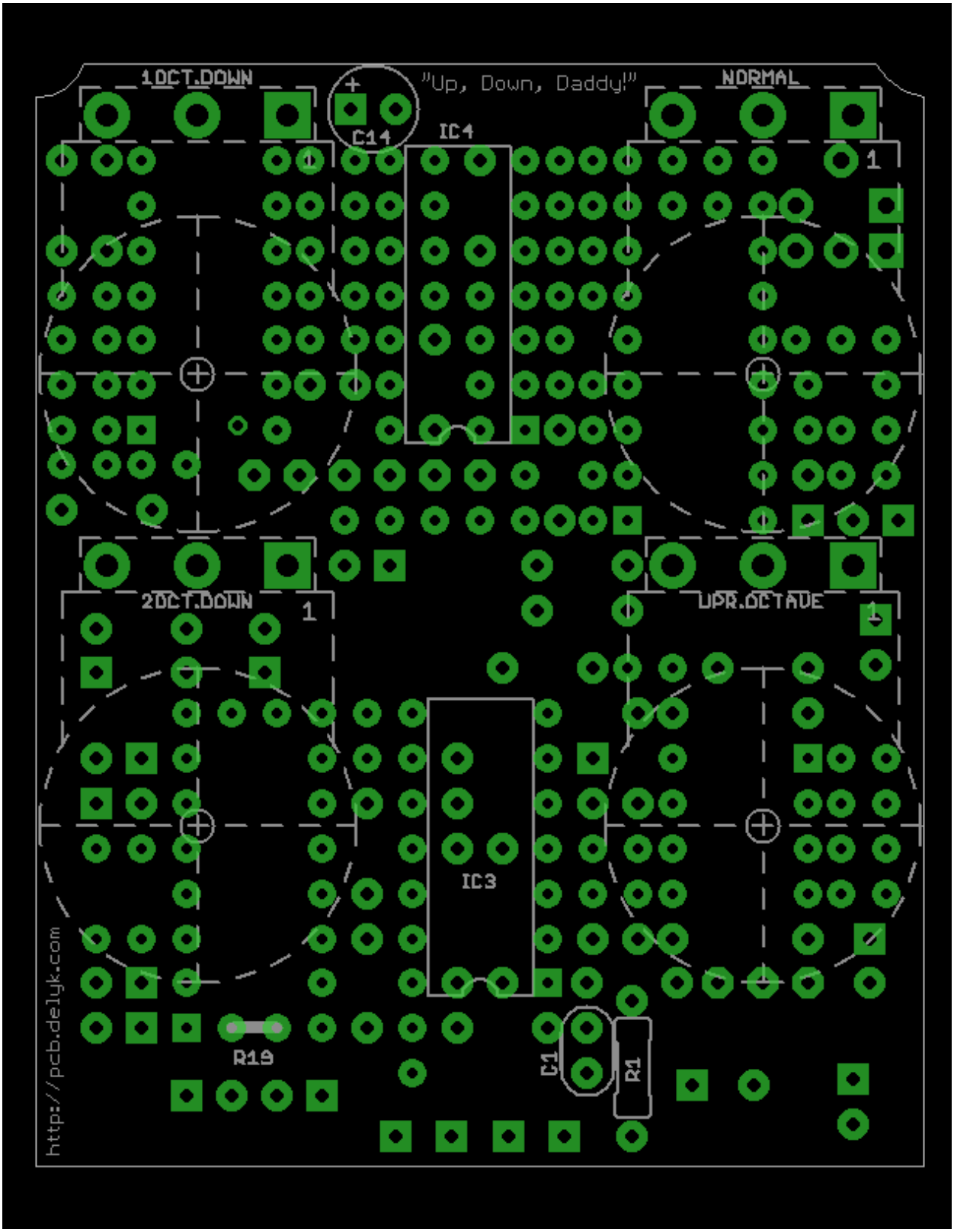




Images

Circuit Board Layout





Example Build