Parts Mounted to PCB Rev 1.3

Part		qty	Value	Package
C1,C2		1	20pf	805
C3		1	1000pf	805
C4		1	2200pf	805
C5,C11,C12,C13,C14,C15,C16,C17 C19,C20,C21,C22,C23,C24,C25,C26 C27,C28,C29,C30,C31,C32,C33,C34 ,C35,C36,C37,C38,C39,C46		30	100nf	805
C6,C7,C8,C9,C10,C40,C41,C42,C43,C44,C45		11	10uf	though hole
D1,D2,D3,D4,D5,D6		6	1N4007	DO35
R0,R35		2	1K	805
R9		1	4K7	805
R4,R37,R71.R72.R73.R79.R80,R81		8	10K	805
R23,R36		2	10K	Trimmer pot
R2,R3		2	22K	805
R10		1	33K	805
R5,R6,R7,R8,R11,R12,R13,R14,R15 R16,R17,R18,R19,R20,R21,R22,R24 R25,R26,R27,R28,R29,R30,R31,R32 R33,R34,R38,R39,R40,R51,R52,R53, R54,R55,R56,R57,R58,R59,R60,R61, R62,R63,R64,R67,R68,R69,R70		48	100K	805
R1		1	4M7	805
Q1		1	3.58mhz	HC49UP
IC1		1	7805	TO-220
IC2	Inculded in kit	1	PIC18F46K22	DIL40
Inculded in kit				
IC3	Inculded in kit	1	YM3812	DIL24-6
Inculded in kit				
IC4	Inculded in kit	1	YM3014	DIL8

IC5,IC7	2	MCP6002	DIL08
IC6	1	74ALS04N	DIL14
IC8,IC23	2	TLO72P	DIL08
IC9,IC22	2	74AS573N	DIL20
IC10,IC15,IC16,IC20	4	TL074P	DIL14
IC11	1	LM317	TO-220
IC12,IC14	2	4051N	DIL16
IC13,IC17,IC19	3	4070N	DIL14
IC18	1	MCP6004P	DIL14
IC21	1	LM337	TO-220
JP1	1	2pin male header 0.1 pitch, and a jumper	
SV1	1	MA05-2	Eurorack power connector, un-shrouded

Chip Socket	5	DIL-8
Chip Socket	8	DIL-14
Chip Socket	3	DIL-16
Chip Socket	2	DIL-20-3
Chip Socket	1	DIL-24-6
Chip Socket	1	DIL-40

Parts Mounted to faceplate

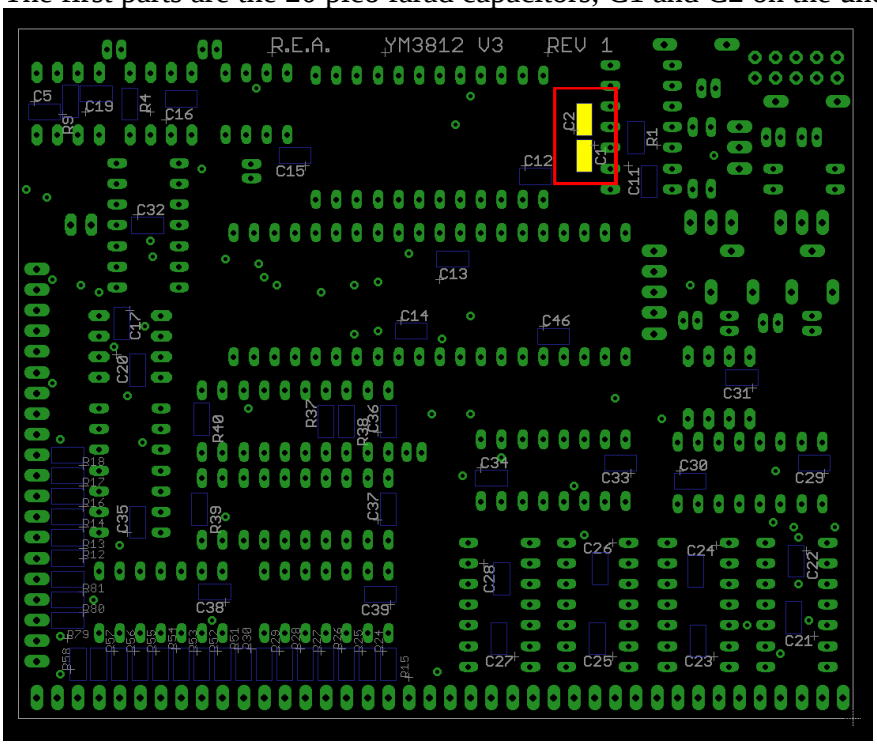
part	qty
16mm Rotary Panel Potentiometer 10K linear	x18
Through Hole 1/4watts 100Kohms 1% resistor	x18
100SP1T2B3M1QEH Toggle Switches SPDT ON-ON SLDR MNT	x11
161-MJ355W-EX sterero jack note: only the “bend” connection requires a stereo jack all other jacks can be mono	x35

about 10 to 15 feet for 24 awg solid core wire,
multiple colors make it easier to wire.

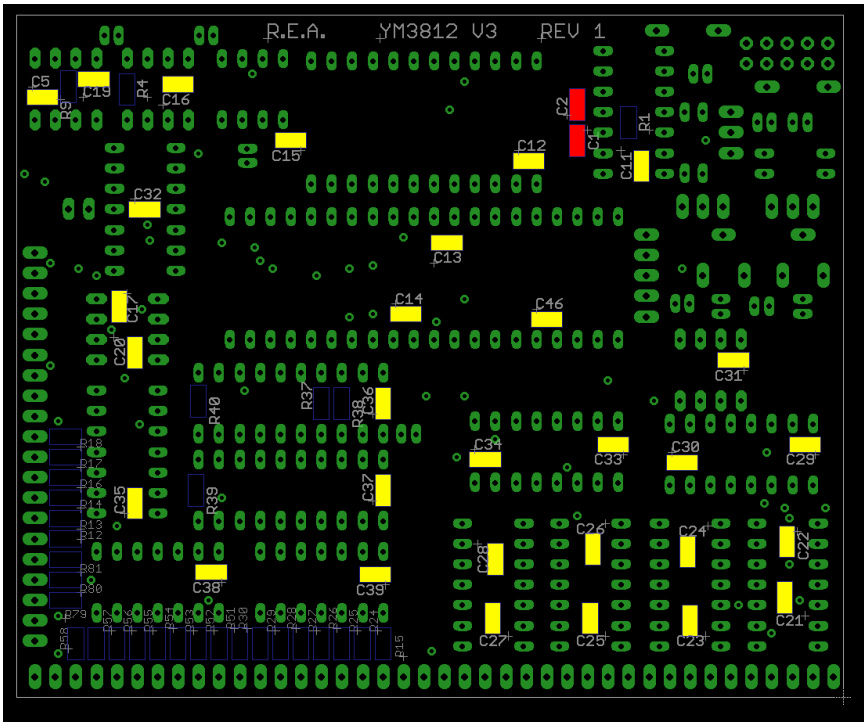
This kit comes with the PCB, face plate, pre-programed Micro-controller, YM3812 and YM3014. All other parts are builder supplied

Tools required: wire cutters, wire strippers, a small screw driver, needle nose pliers, fine tip tweezers. And a soldering iron with a fine tip, solder. A fume extractor is always recommended. A volt meter is needed at the end to calibrate the voltage reference rails

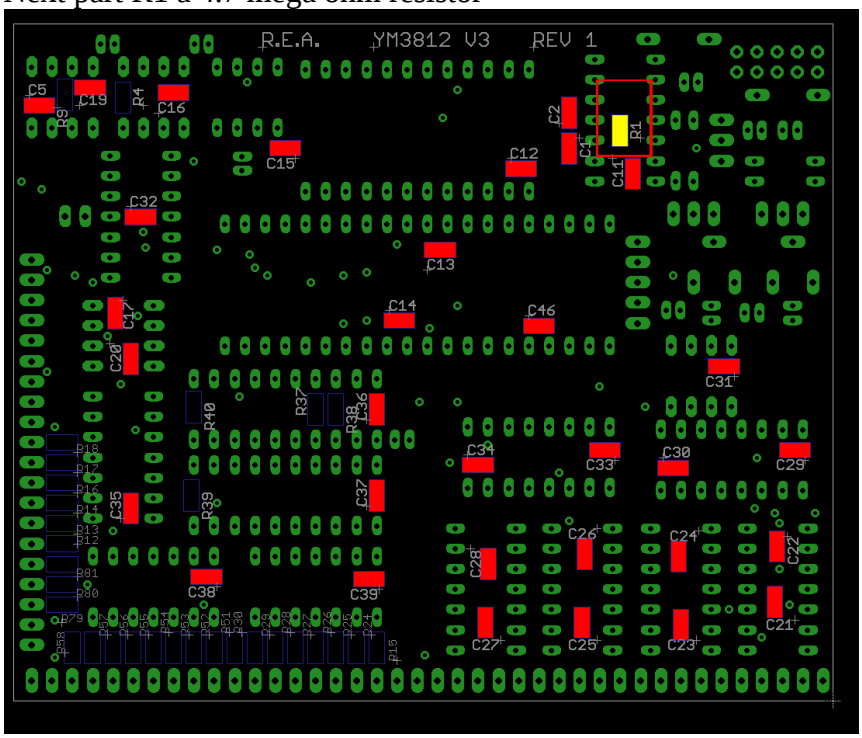
The first parts are the 20 pico farad capacitors, C1 and C2 on the underside of the board



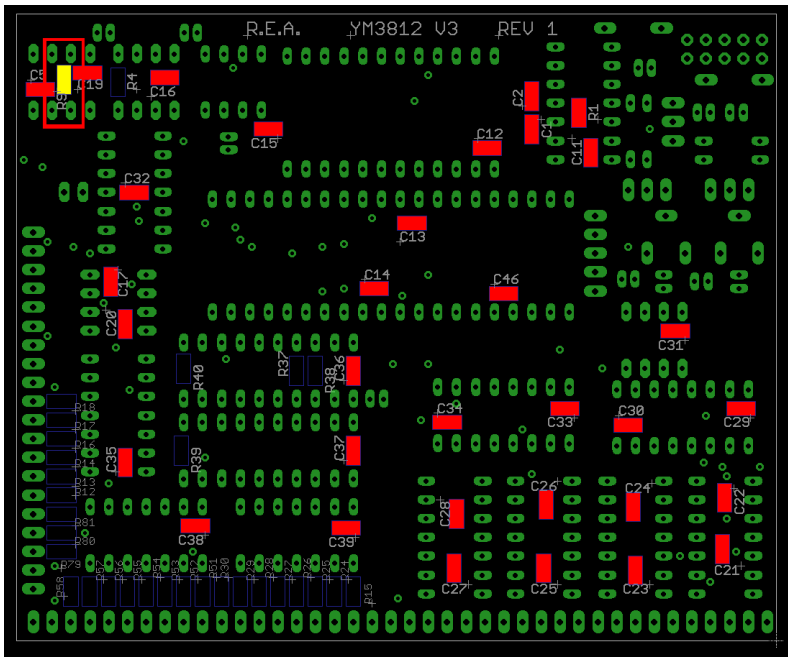
All the other cap on the underside are the 100 nano farad



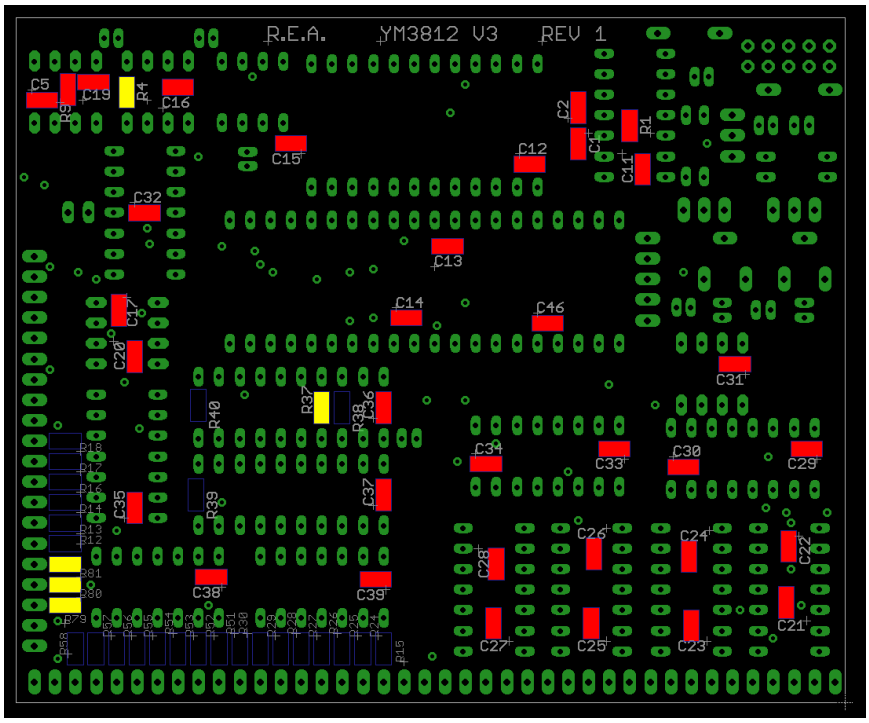
Next part R1 a 4.7 mega ohm resistor



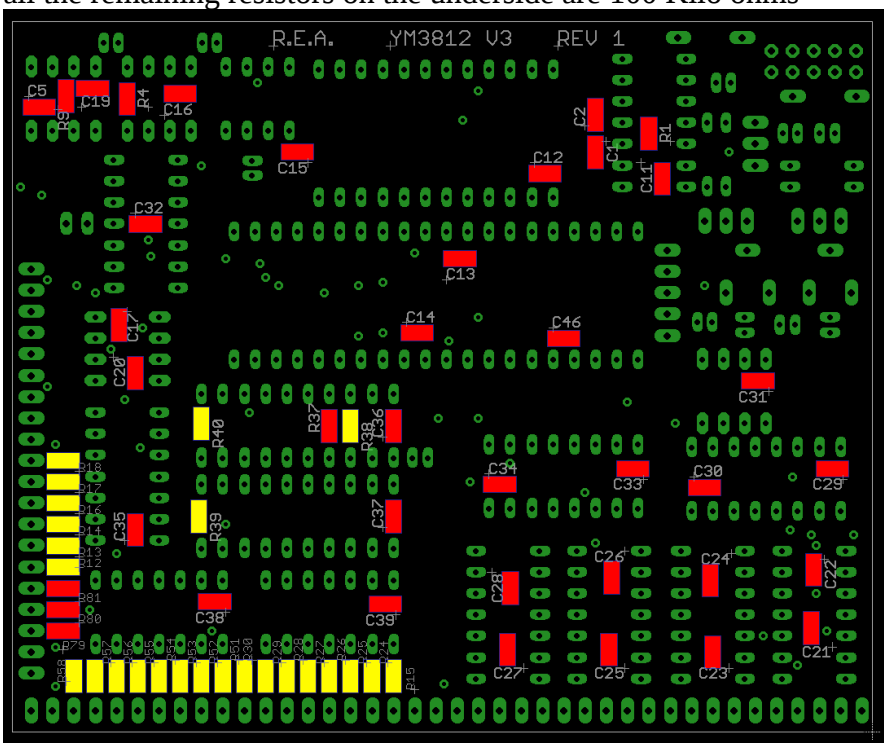
then R9 at 4.7 Kilo ohm



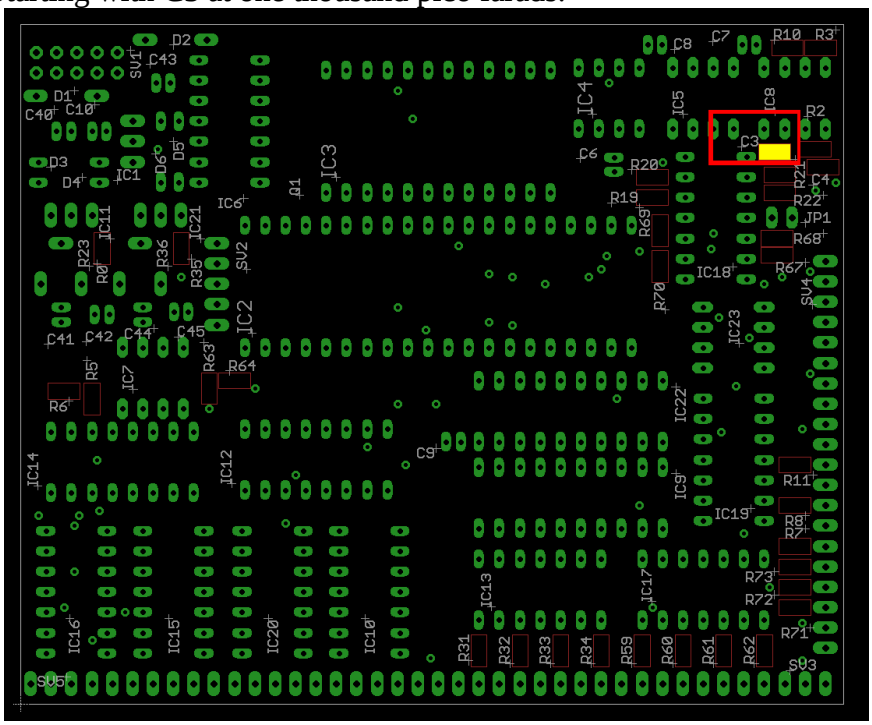
followed by R4, R37, R79 R80 R81 all 10 kilo ohms



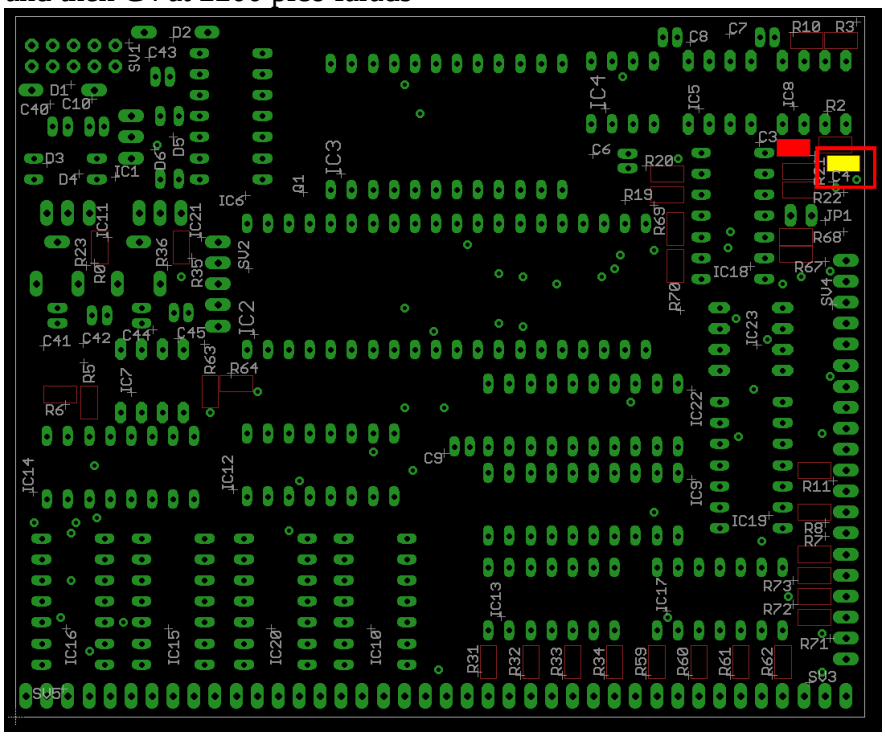
all the remaining resistors on the underside are 100 Kilo ohms



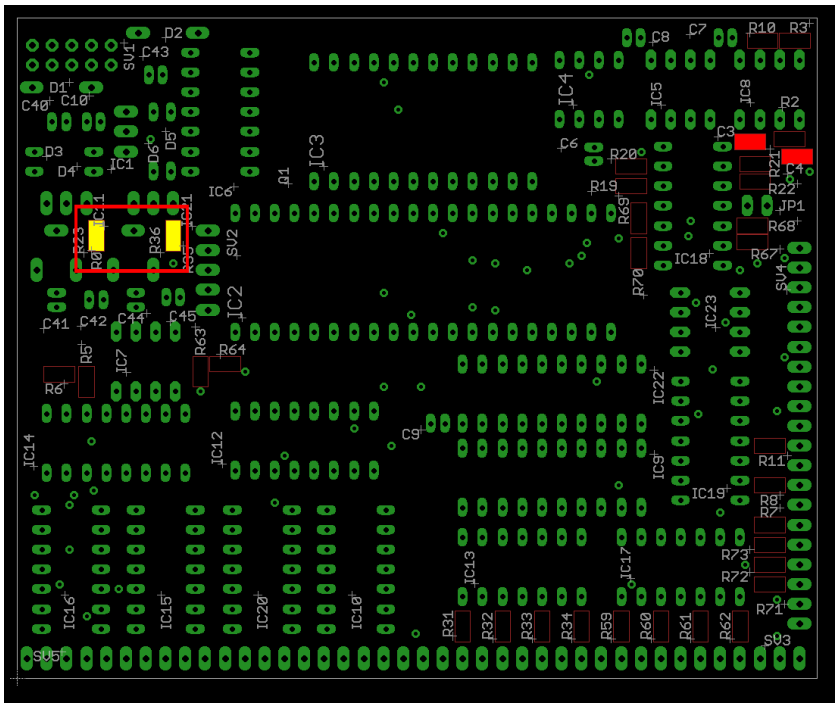
Now we flip the board over and start with the parts on the top side.
Starting with C3 at one thousand pico farads.



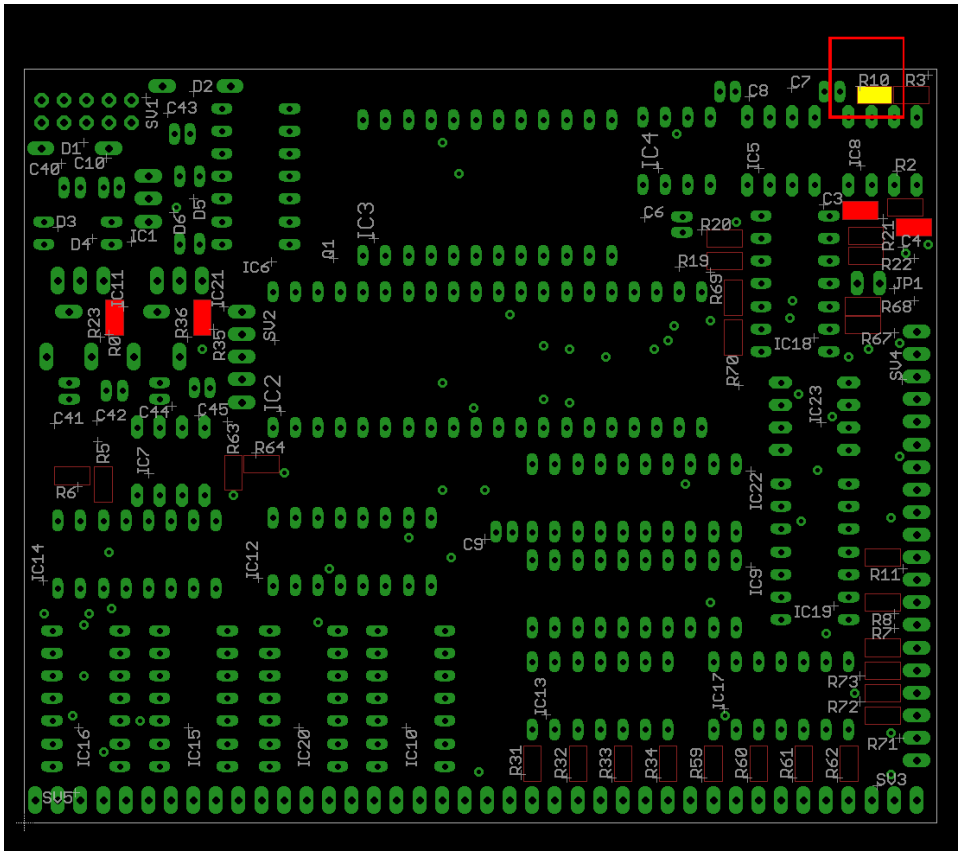
and then C4 at 2200 pico farads



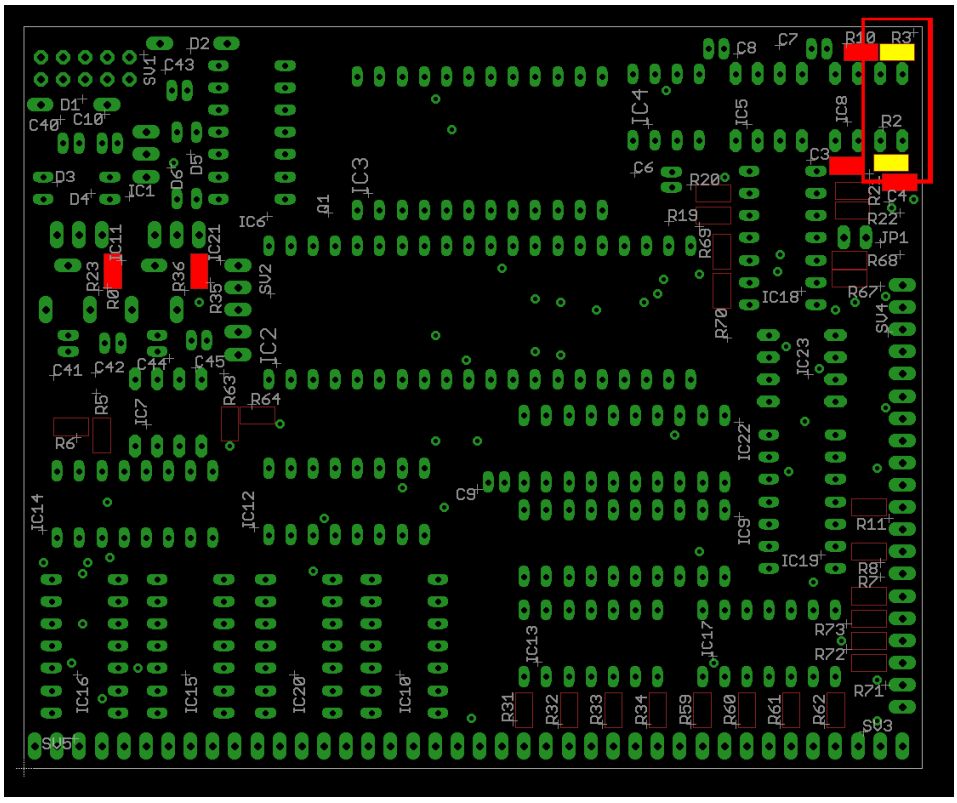
R0 and R36 both 1 Kilo ohm



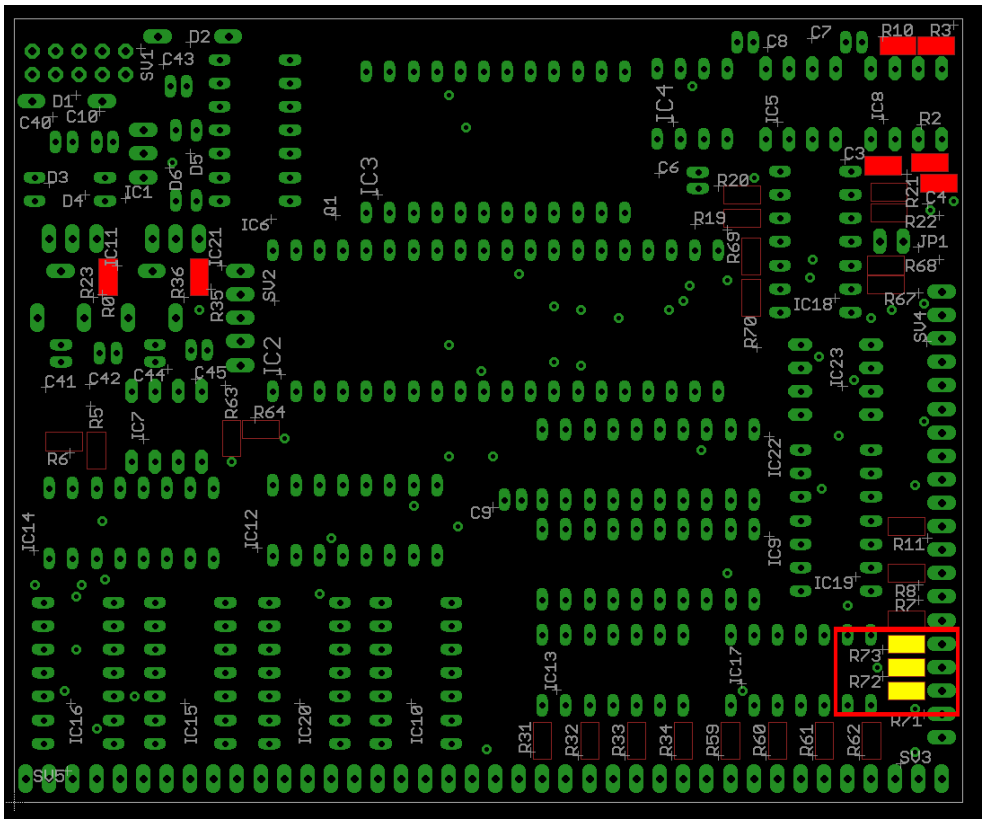
R10 at 33 kilo ohm



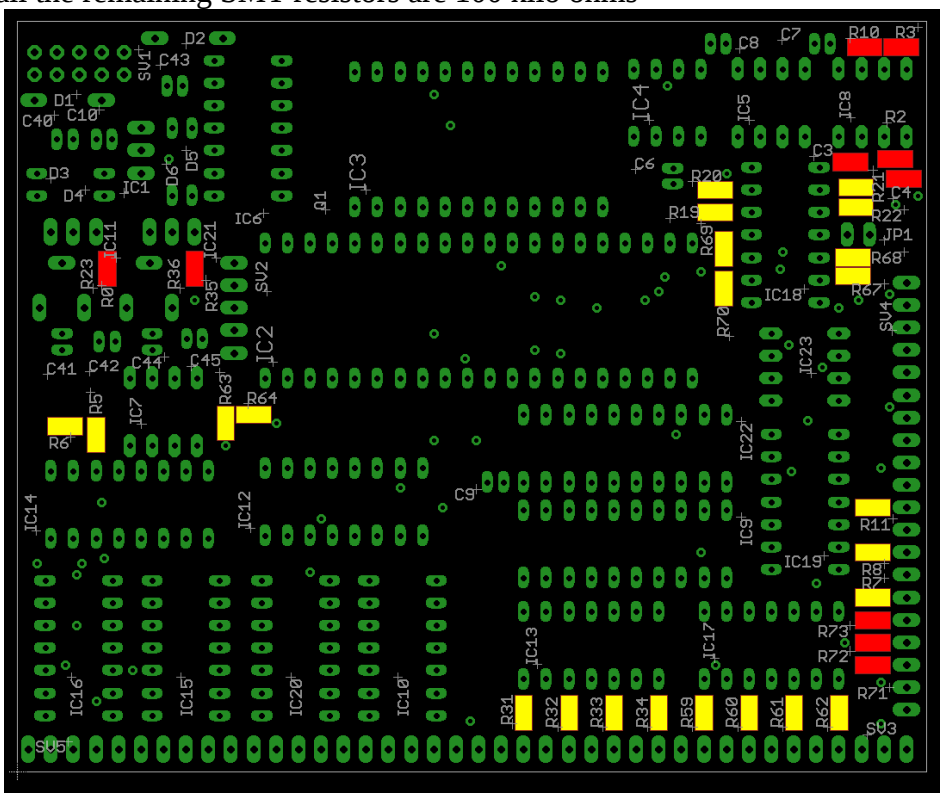
R2 and R3 at 22 kilo ohm



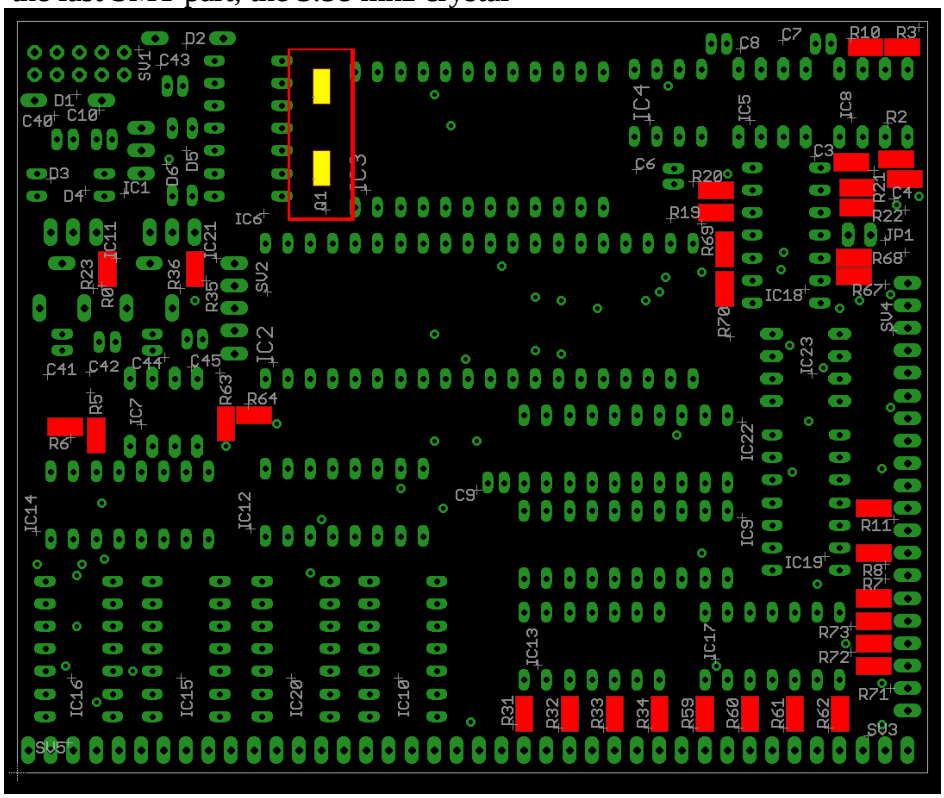
R71 R72 and R73 at 10 kilo ohm



all the remaining SMT resistors are 100 kilo ohms

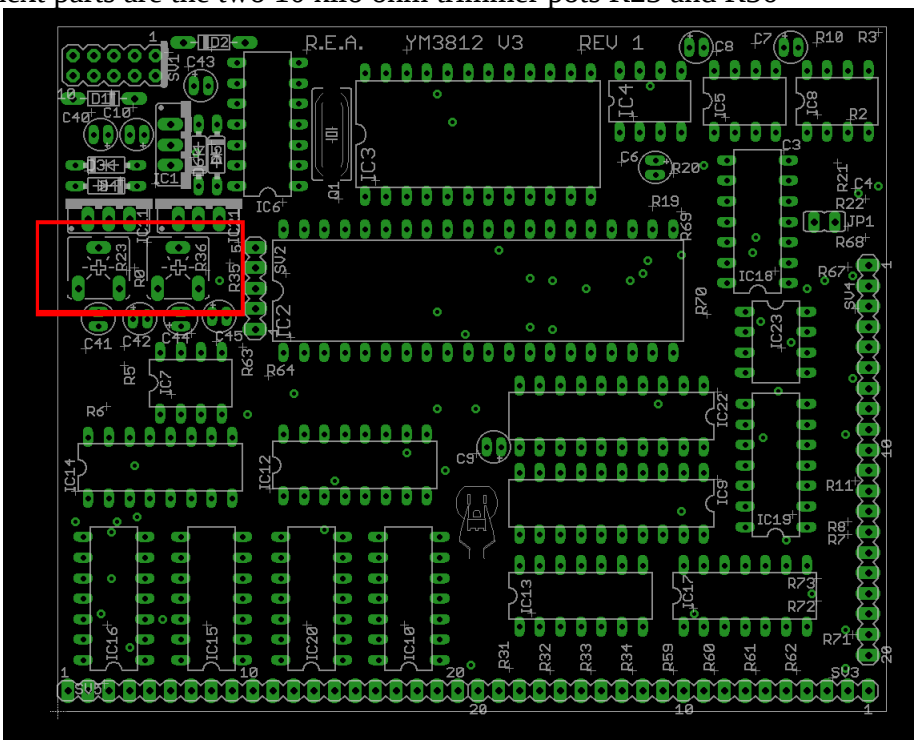


the last SMT part, the 3.58 mhz crystal

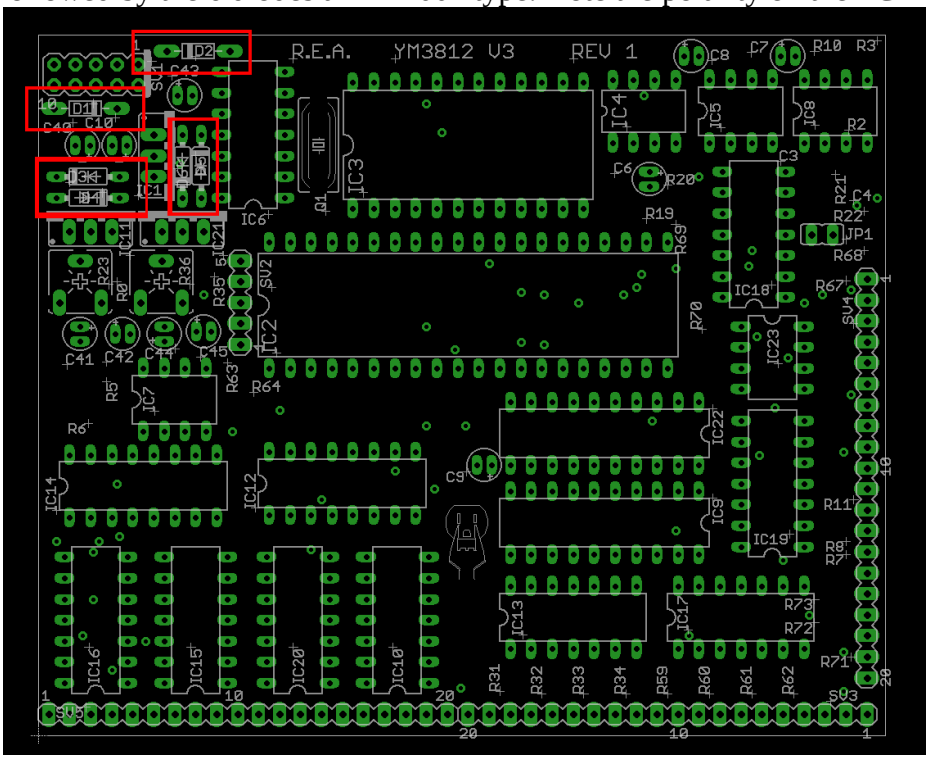


Next is the step of adding the chip sockets

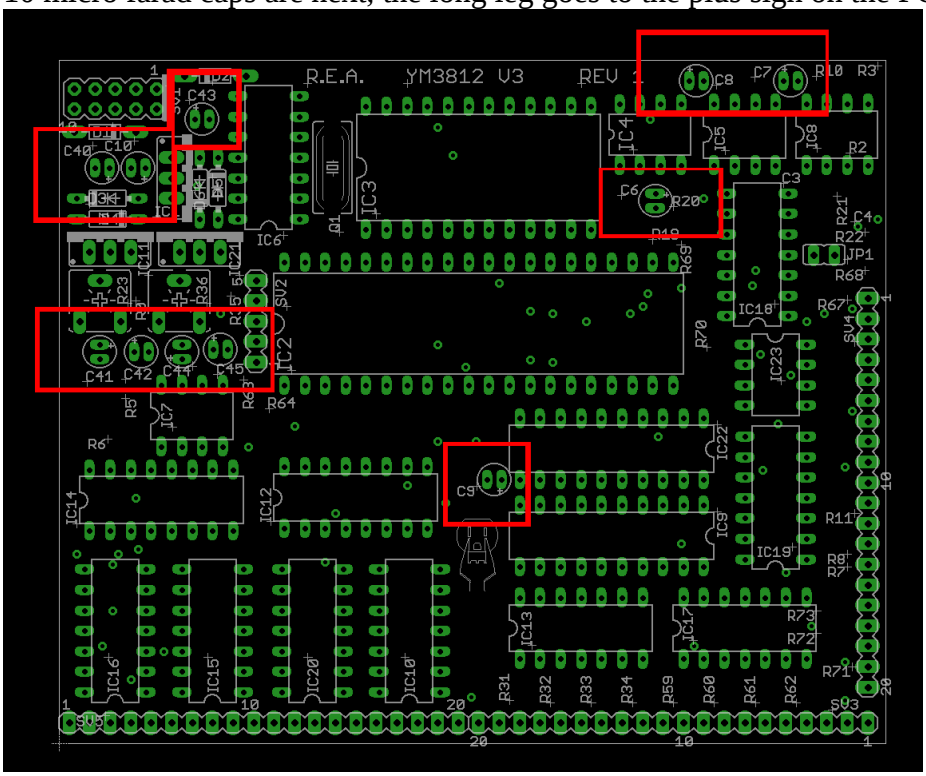
next parts are the two 10 kilo ohm trimmer pots R23 and R36



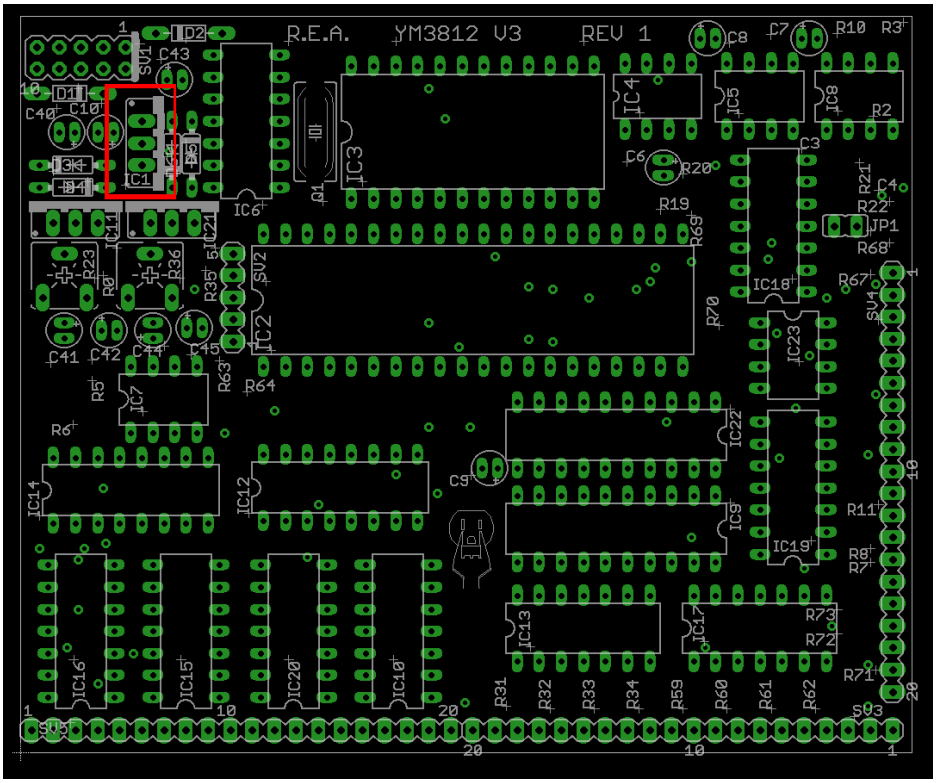
followed by the 6 diodes all 1N4007 type. Note the polarity on the PCB



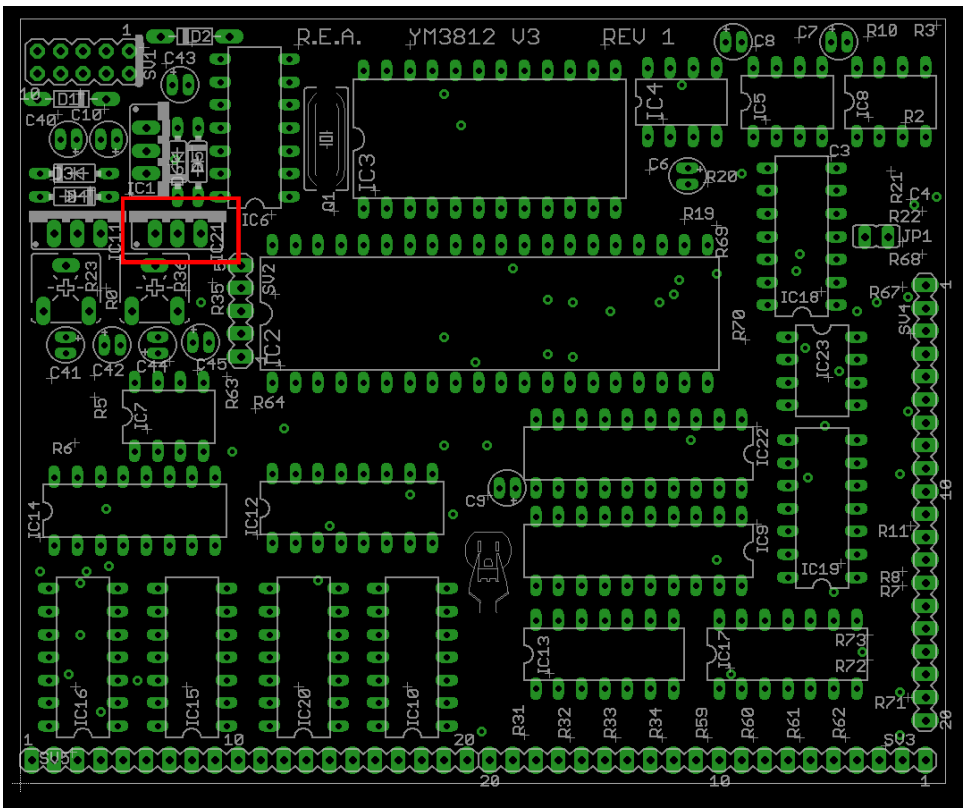
10 micro farad caps are next, the long leg goes to the plus sign on the PCB



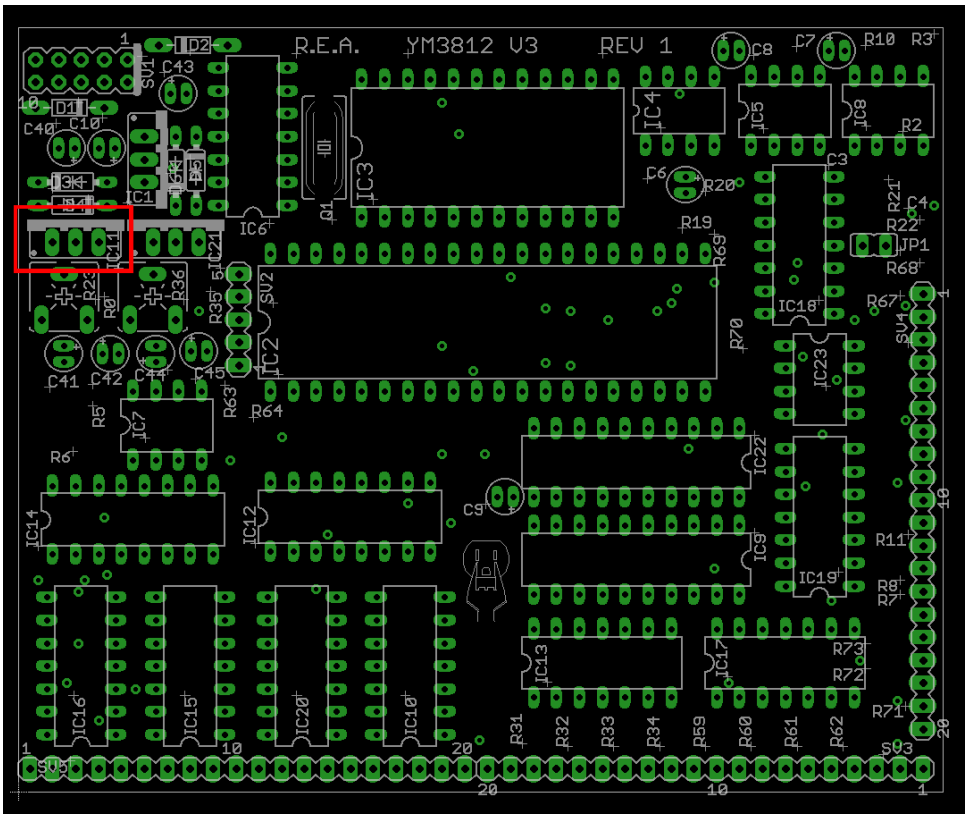
Now IC1 the 7805



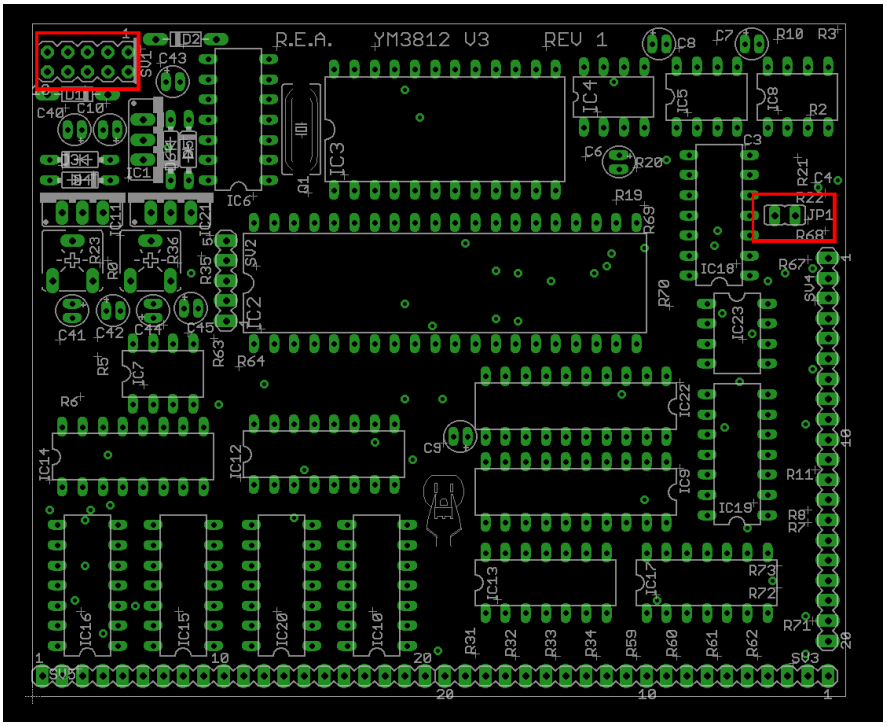
IC21 the LM337



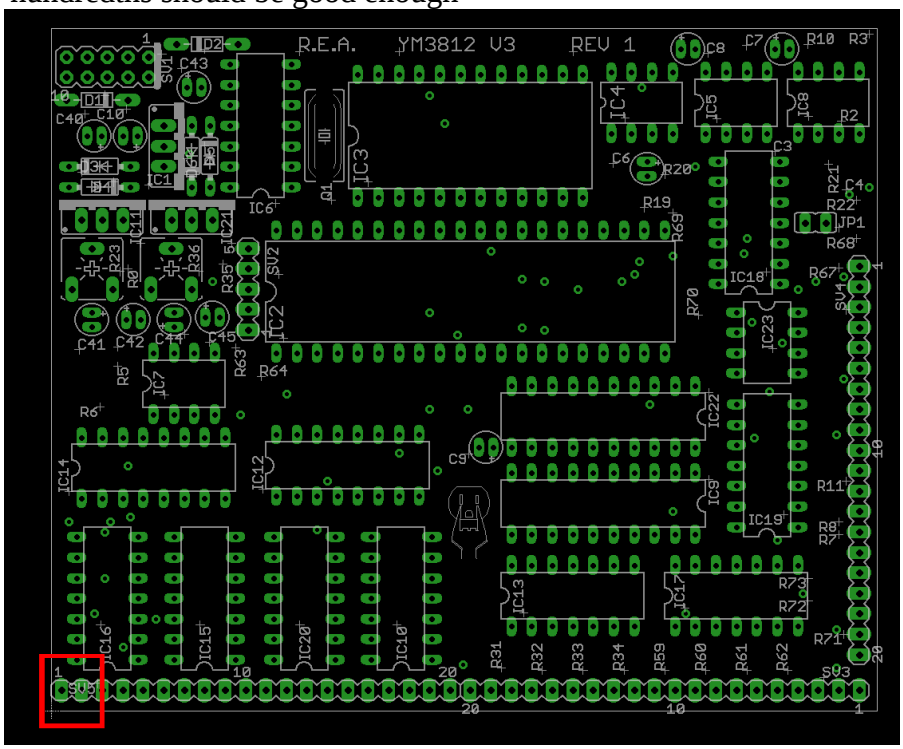
IC11 the LM317



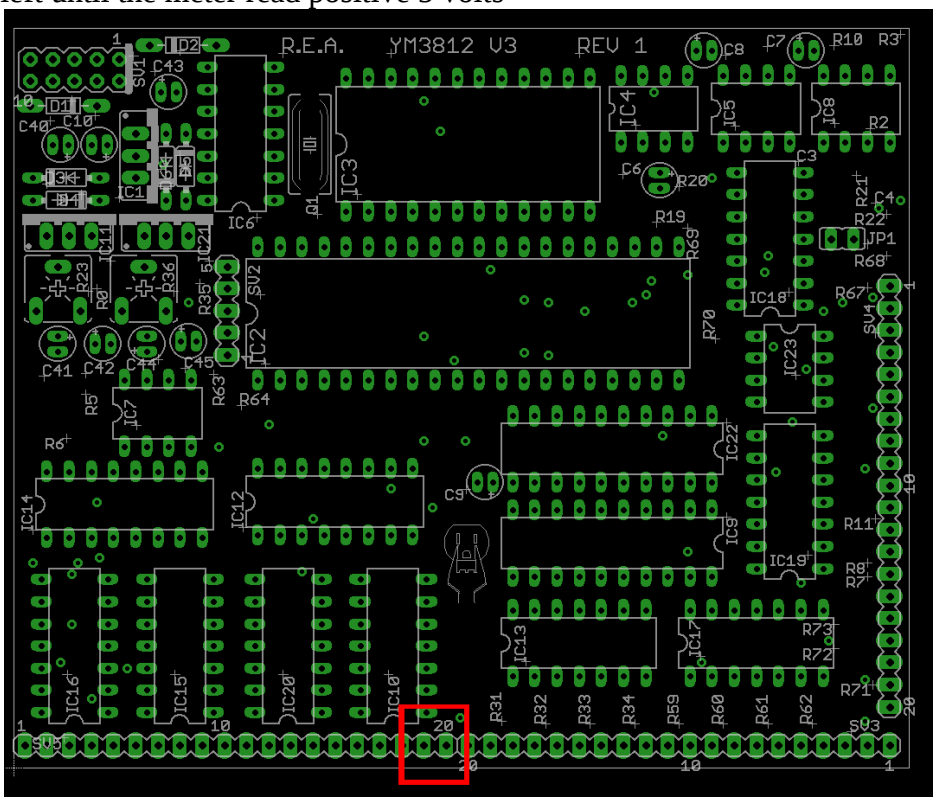
the last parts on the board are jumper JP1 and the power connector



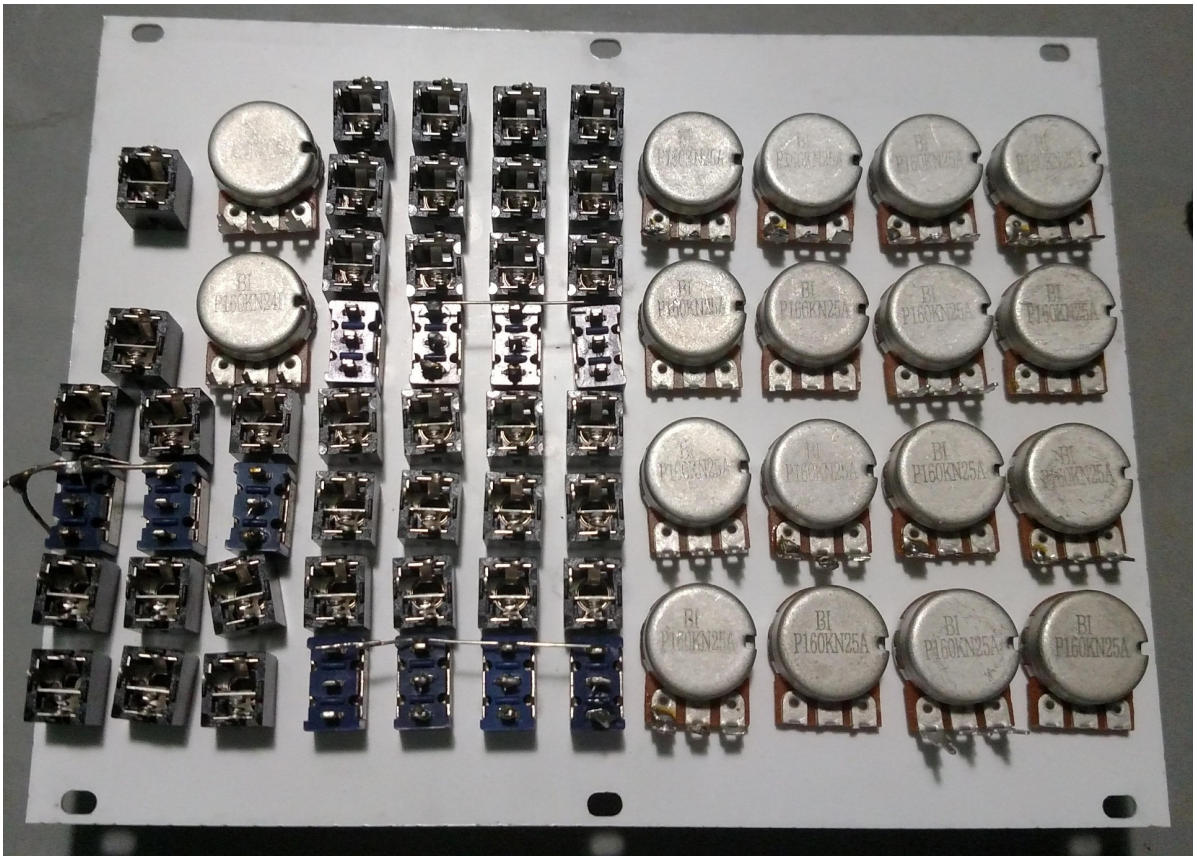
Now before we add any chips calibrating the voltage references in important. First connect the power jack and power up the board. Now take a volt meter and connect it to the last two pins on the left of the PCB. Adjust the trimmer pot on the right until the meter reads negative 5 volts, being within a few hundredths should be good enough



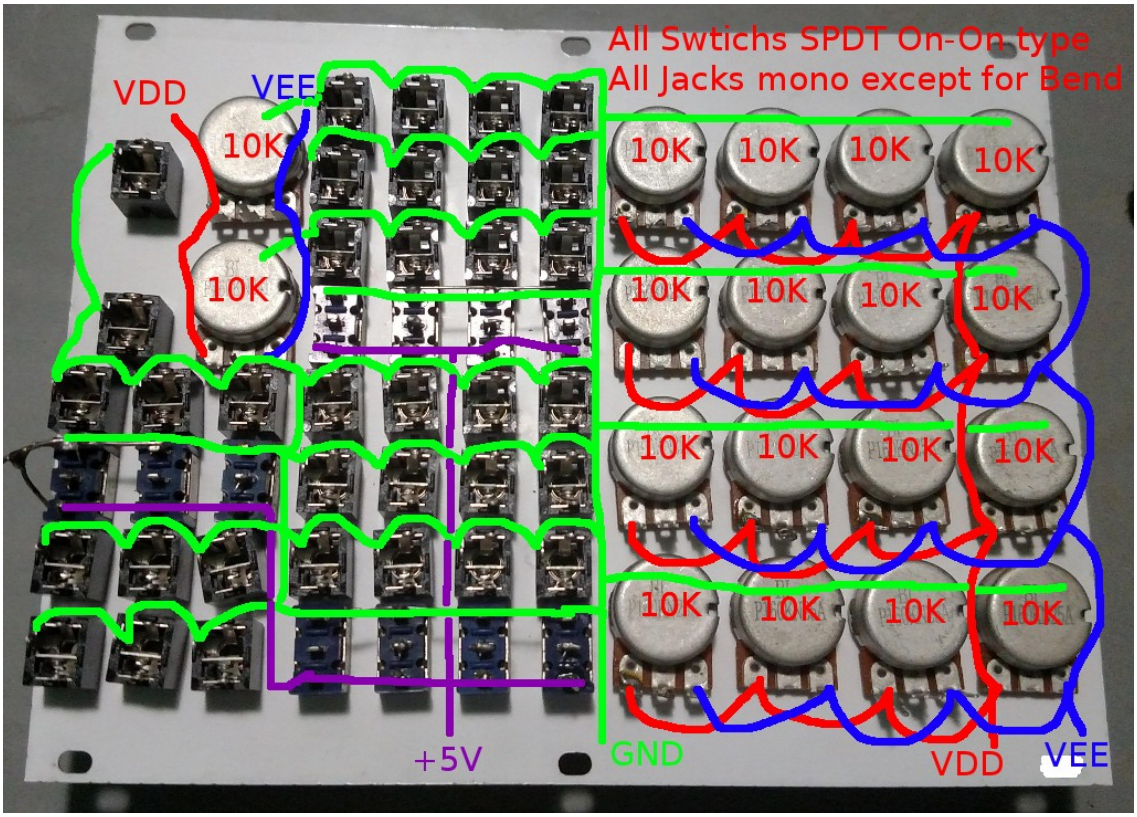
now measure the voltage between pins 19 and 20 on the PCB and adjust with the potentiometer on the left until the meter read positive 5 volts



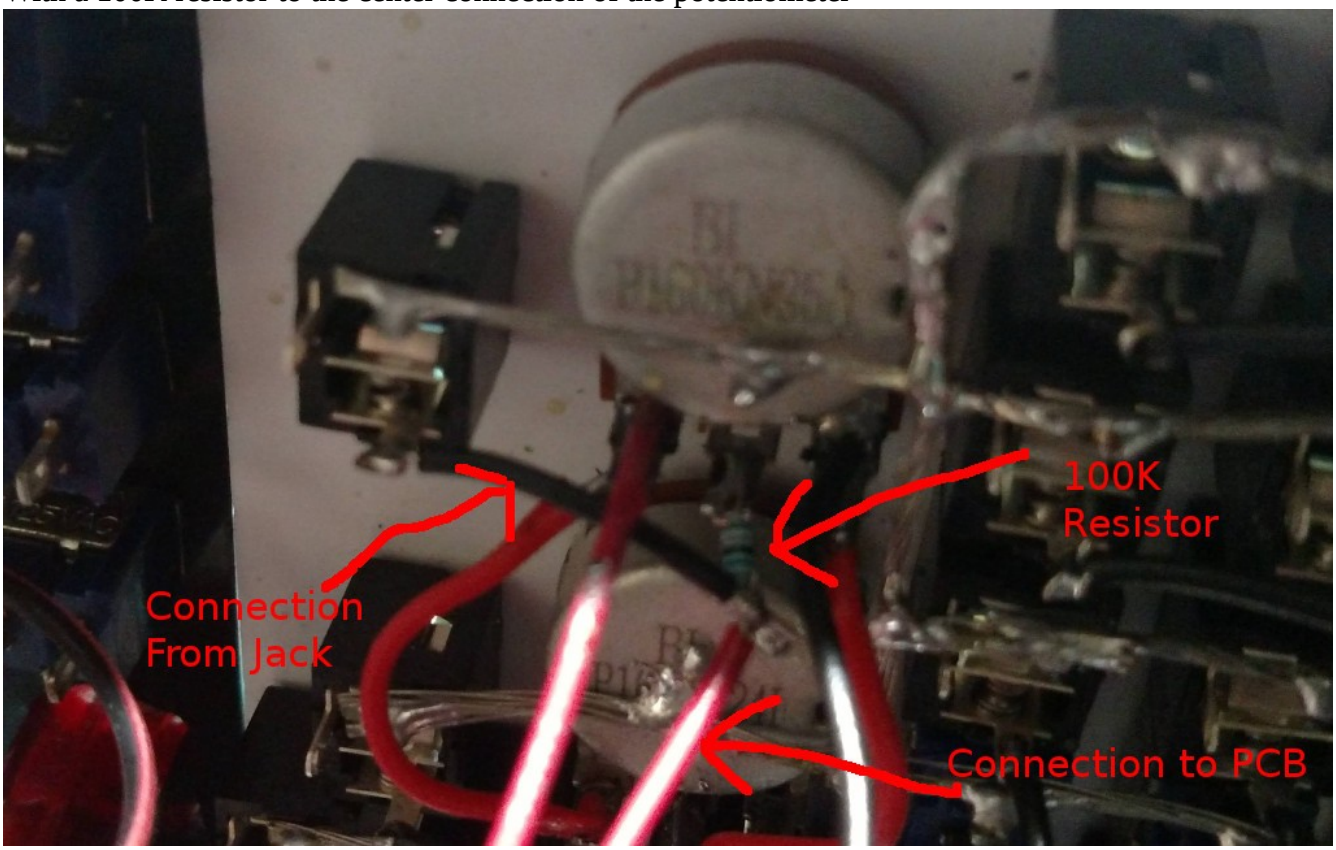
Start the faceplate by attaching all the potentiometers, switches and jacks as shown



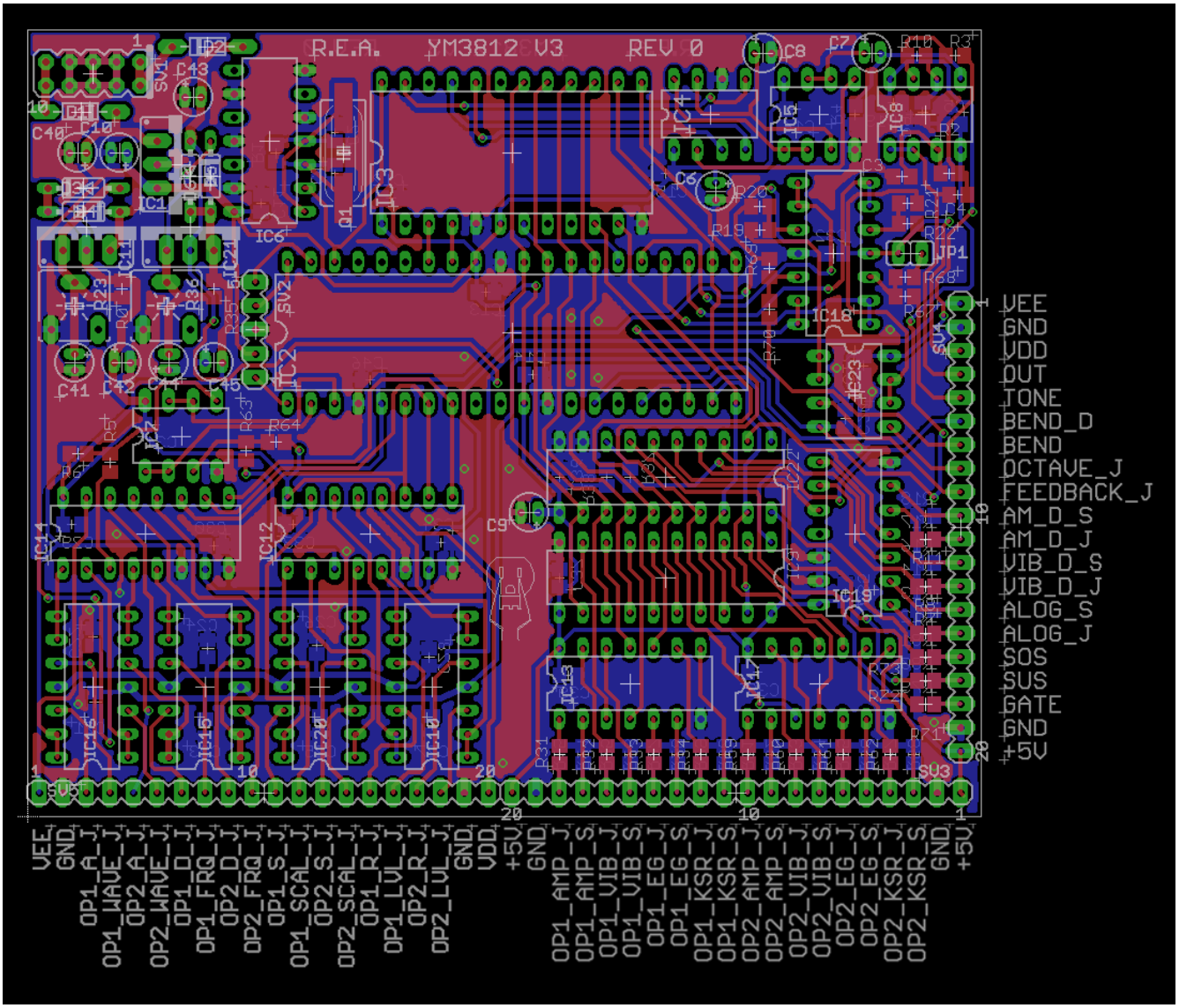
Wire the voltage buses together as shown

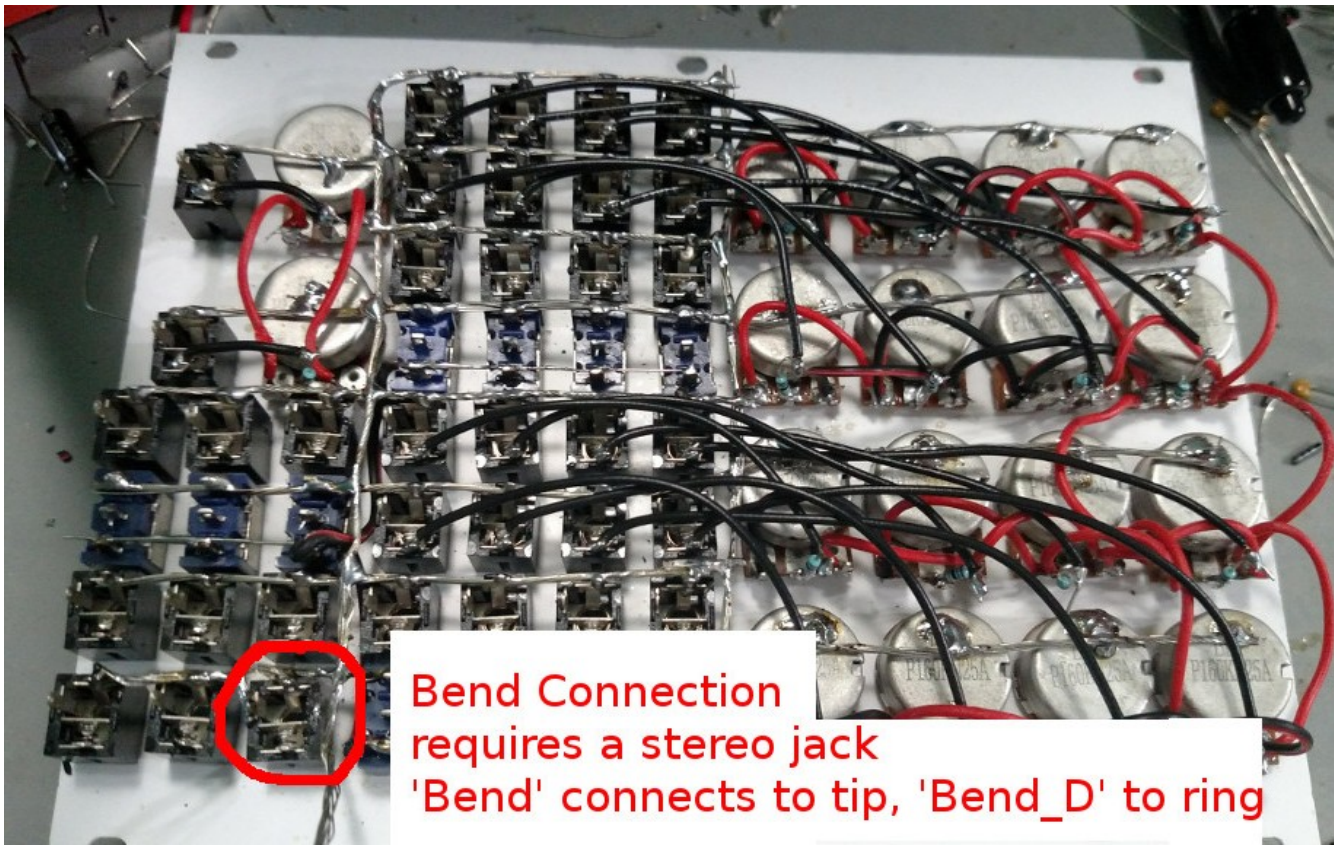


Each jack is wired to its corresponding potentiometer as shown
With a 100K resistor to the center connection of the potentiometer

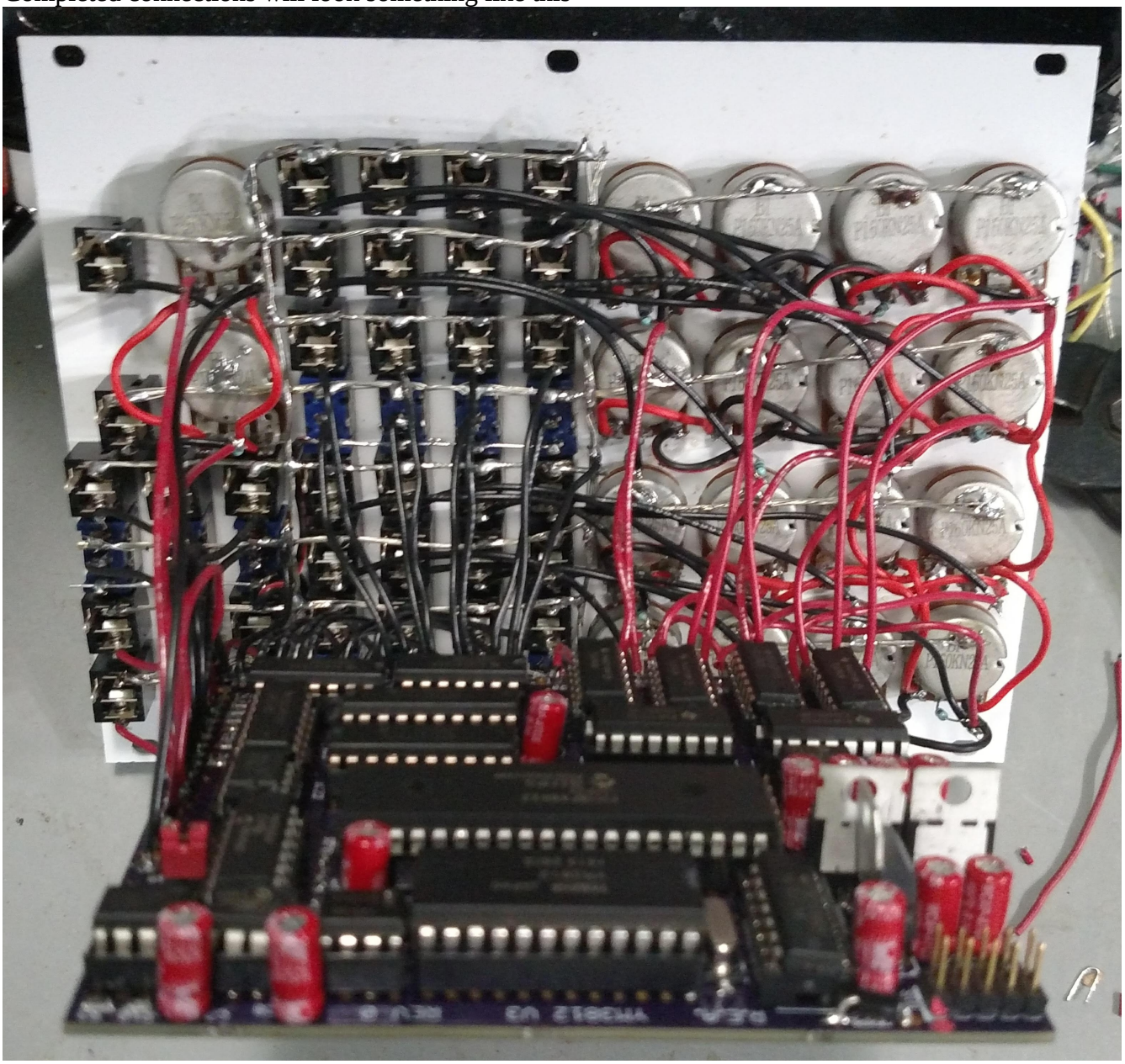


Connections from the PCB to the faceplate are shown below




Bend Connection
requires a stereo jack
'Bend' connects to tip, 'Bend_D' to ring

Completed connections will look something like this



Now add the chips, put it in your rack, and enjoy