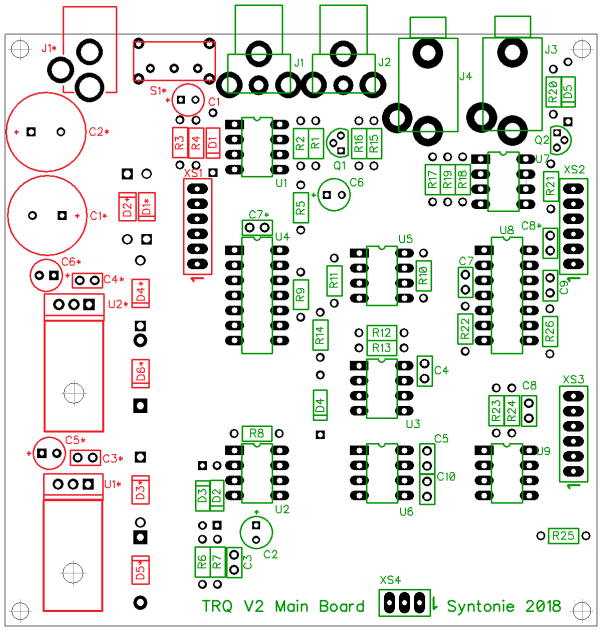
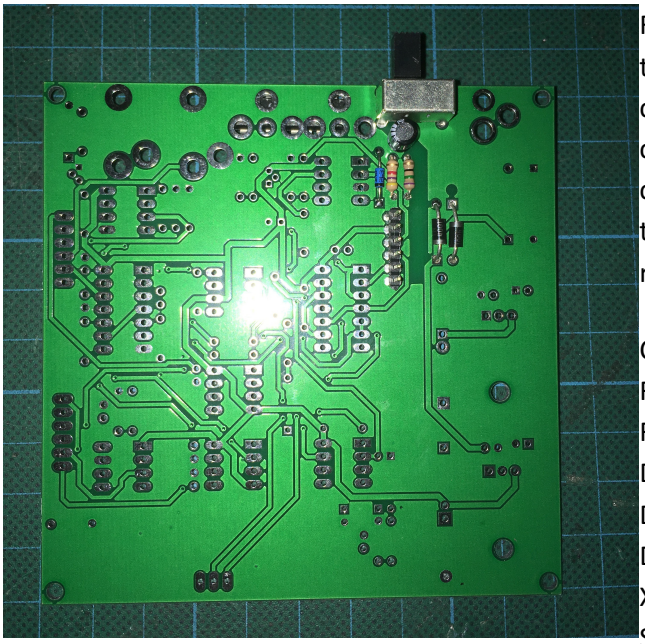
TRQ V2
BUILD GUIDE

A. Main Board

I. Power Supply

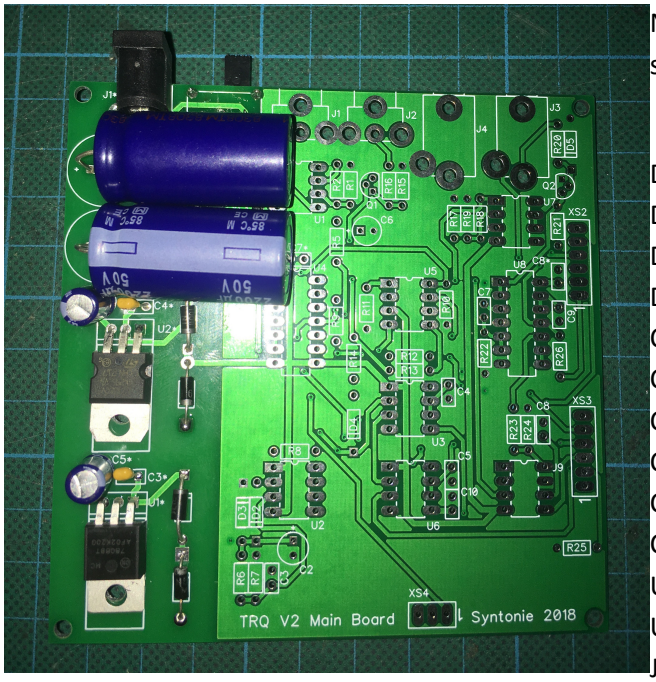




First, we will need to install the following components on the other side of the board to make space for the big capacitors, mind the orientation of diodes and electrolytic capacitors, also note that some components references contains a " * ", those are PSU components, don't mix them with the reference without the asterik. Also remember that there is 2 types of diodes.

C1: 10uF (Electrolytic)
R3: 75R (Purple, Green, Black)
R4: 4K7 (Yellow, Purple, Red)
D1*: 1N4001
D2*: 1N4001
D1: 1N6263
XS1: 6 pin connector
S1*: Slide switch

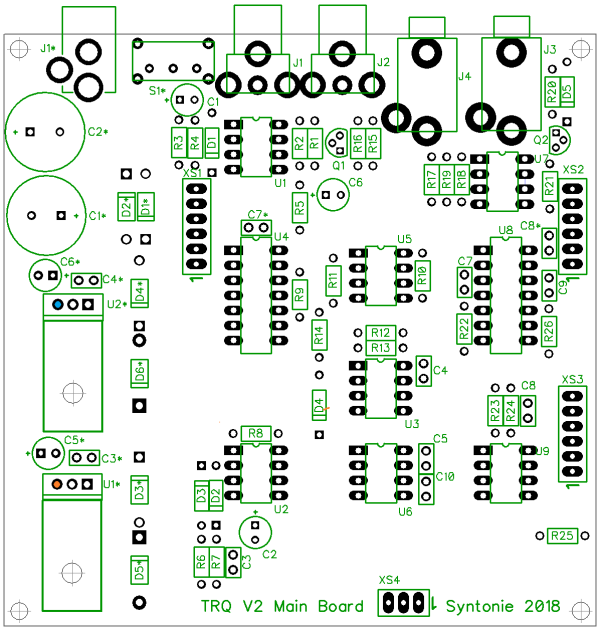
Bend the leads of the capacitor so it sits parallel to the board, it will fit better when the two boards will be assembled.



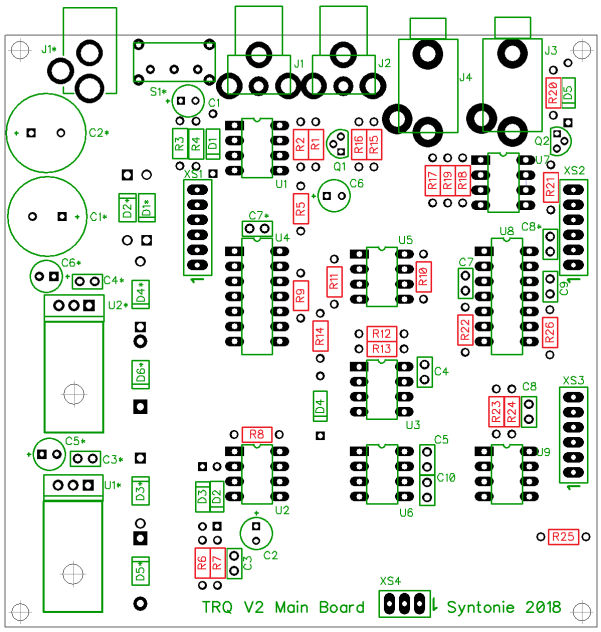
Now we can place all the remaining components, on the silkscreen/normal side:

D3*: 1N4001
D4*: 1N4001
D5*: 1N5819
D6*: 1N5819
C1*: 2200uF (Electrolytic)
C2*: 2200uF (Electrolytic)
C3*: 100nF (Ceramic, marked 104)
C4*: 100nF (Ceramic, marked 104)
C5*: 100uF (Electrolytic)
C6*: 100uF (Electrolytic)
U1*: 7808
U2*: 7908
J1*: DC connector

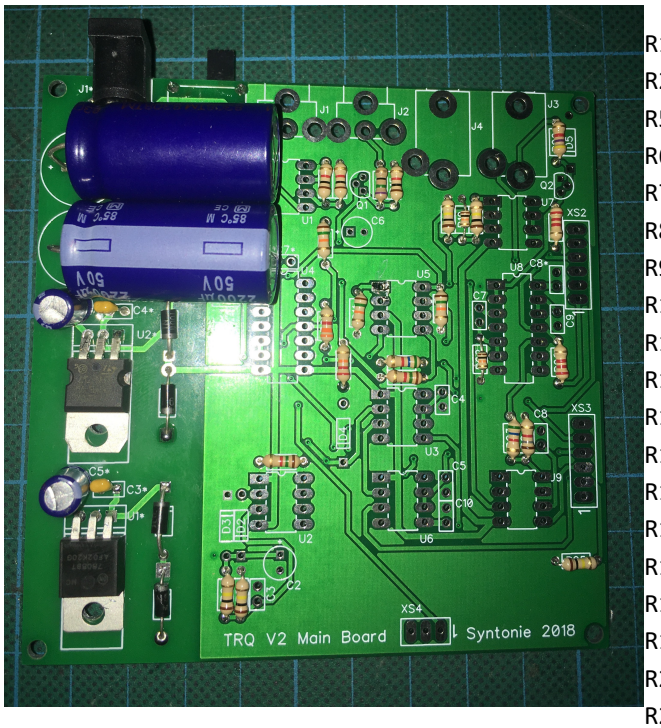
Once everything is soldered and the components leads cut, we will test the power supply. Plug a 9V to 12V **AC** power supply into J1* connector, turn S1* to the , the circuit should now be powered on. Using a voltmeter, check that you got the right voltages, orange is +8V, blue is -8V. Now be careful as the 2 big capacitors can hold a charge when circuit is turned off, avoid shorting the two pins of each capacitors.



II. Resistors

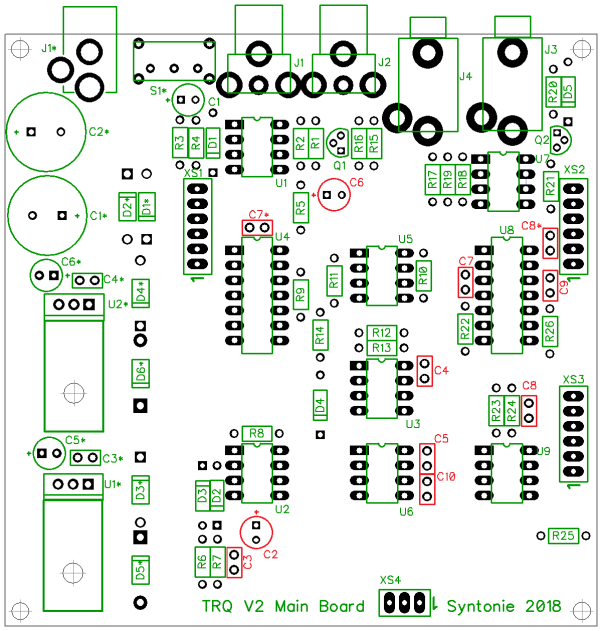


Place all the resistors, those are not polarized (R3 and R4 have been place during the 1st step):

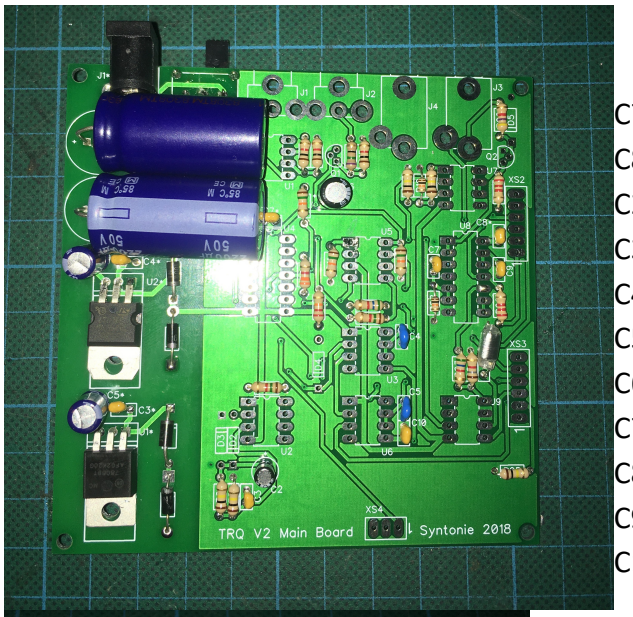


R1: 1K (Brown, Black, Red)
R2: 1K (Brown, Black, Red)
R5: 15K (Brown, Green, Orange)
R6: 100K (Brown, Black, Yellow)
R7: 100K (Brown, Black, Yellow)
R8: 1K5 (Brown, Green, Red)
R9: 3K3 (Orange, Orange, Red)
R10: 15K (Brown, Green, Orange)
R11: 15K (Brown, Green, Orange)
R12: 5K6 (Green, Blue, Red)
R13: 1K5 (Brown, Green, Red)
R14: 22K (Red, Red, Orange)
R15: 1K (Brown, Black, Red)
R16: 75R (Purple, Green, Black)
R17: 100K (Brown, Black, Yellow)
R18: 100K (Brown, Black, Yellow)
R19: 10K (Brown, Black, Orange)
R20: 4K7 (Yellow, Purple, Red)
R21: 2K2 (Red, Red, Red)
R22: 10K (Brown, Black, Orange)
R23: 5K6 (Green, Blue, Red)
R24: 1K8 (Brown, Gray, Red)
R25: 100K (Brown, Black, Yellow)
R26: 2K2 (Red, Red, Red)

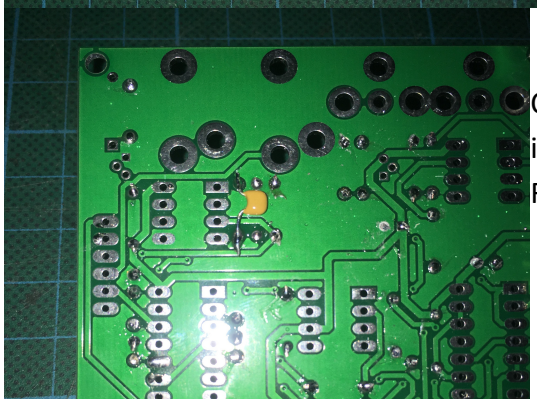
III. Capacitors



Place all the capacitors, again mind the asterisk and orientation of electrolytics caps, also note that C8 is a 1nF styrene cap (silver body) (C1 has already been placed in the first part):

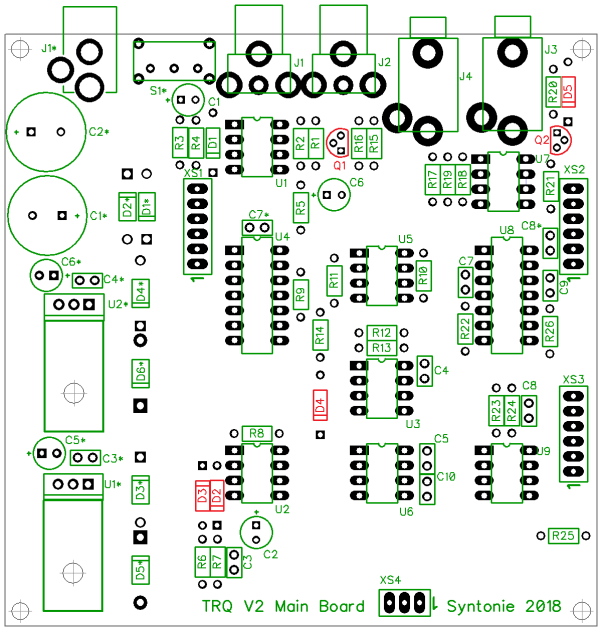


C7*: 100nF (Ceramic, marked 104)
C8*: 100nF (Ceramic, marked 104)
C2: 1uF (Electrolytic)
C3: 100nF (Ceramic, marked 104)
C4: 2.7nF (Ceramic, marked 272)
C5: 2.7nF (Ceramic, marked 272)
C6: 22uF (Electrolytic)
C7: 470pF (Ceramic, marked 471)
C8: 1nF (Styrene, silver body)
C9: 4.7nF (Ceramic, marked 472)
C10: 1nF (Ceramic, marked 102)

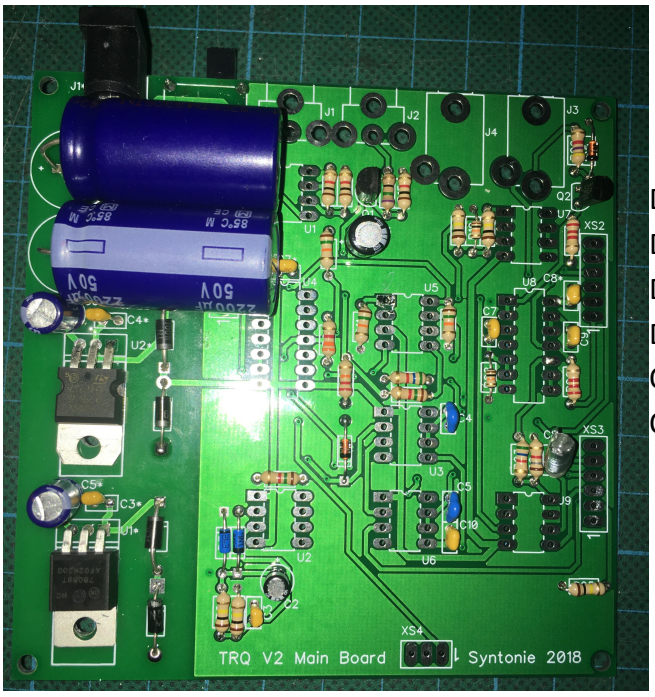


C11 is missing from the board, it helps filtering the audio/CV input, you can solder a 220pF (marked 221) capacitor accross R18.

IV. Diodes/Transistors

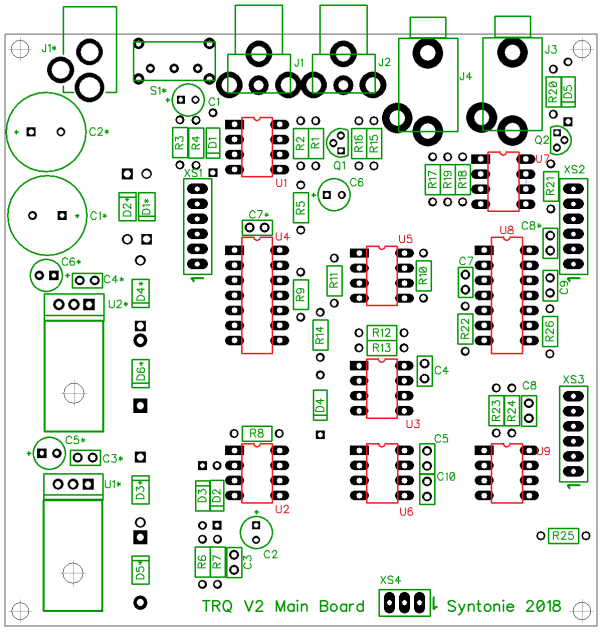


Place all the diodes (mind the orientation and also that there is 2 type of diodes), and the 2 transistors (D1 has already been placed during the first part):

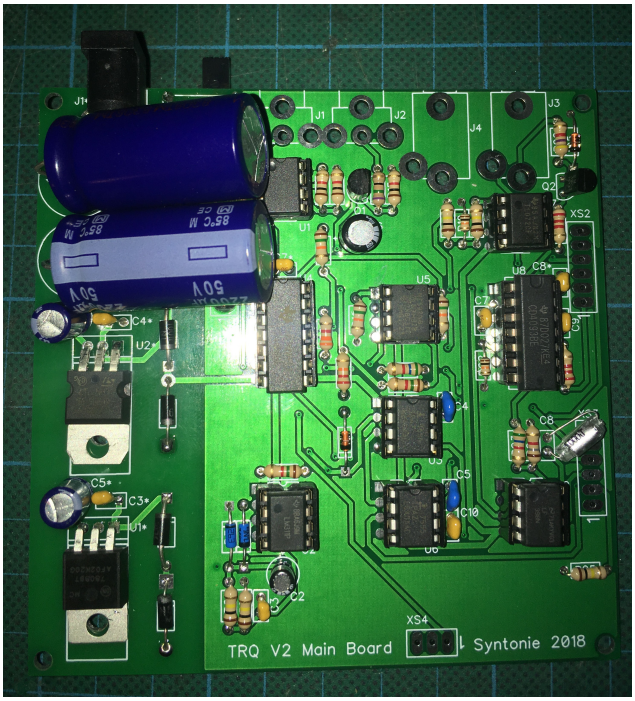


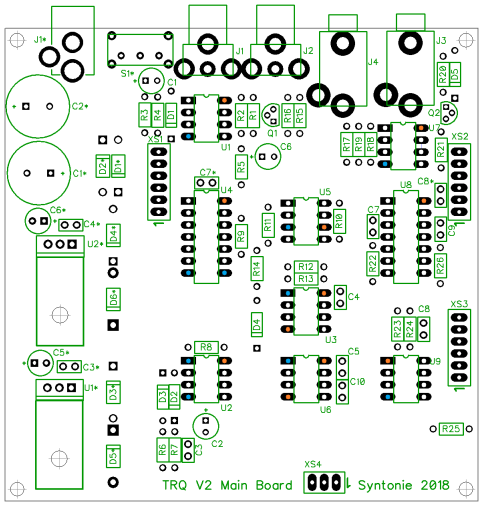
D2: 1N6263
D3: 1N6263
D4: 1N4148
D5: 1N4148
Q1: 2N3904
Q2: 2N3904

V. Integrated circuits:



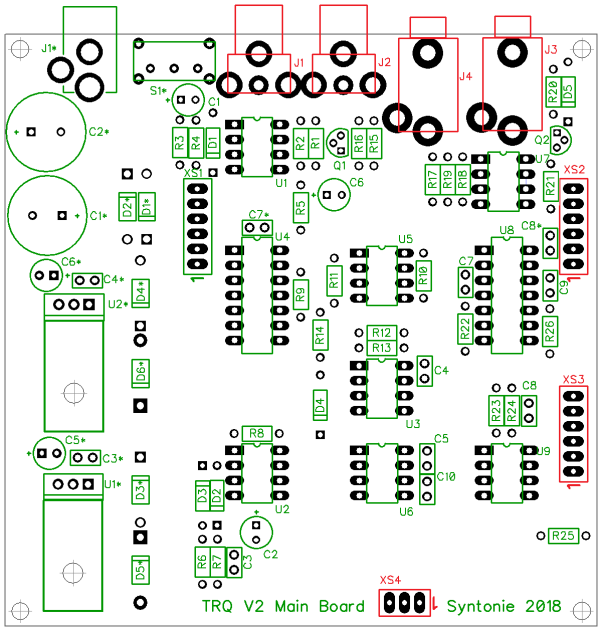
Place all IC sockets if you're using them (those are included in the kit to ease an eventual debugging). Before placing the Ics, check that you have the right voltages at the following points, orange is +8V, blue is -8V. If that's the case, you can place all the ICs, else check for shorts/cold solder joints.

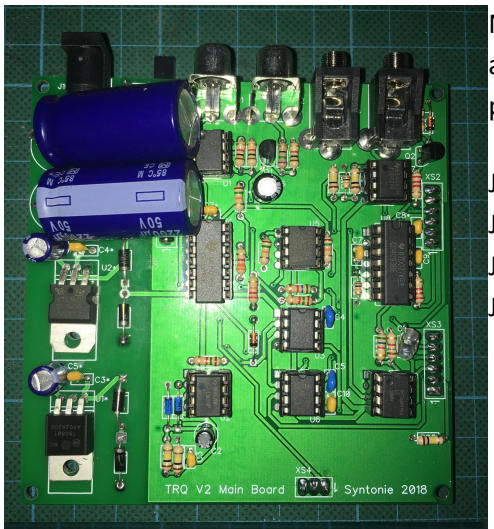


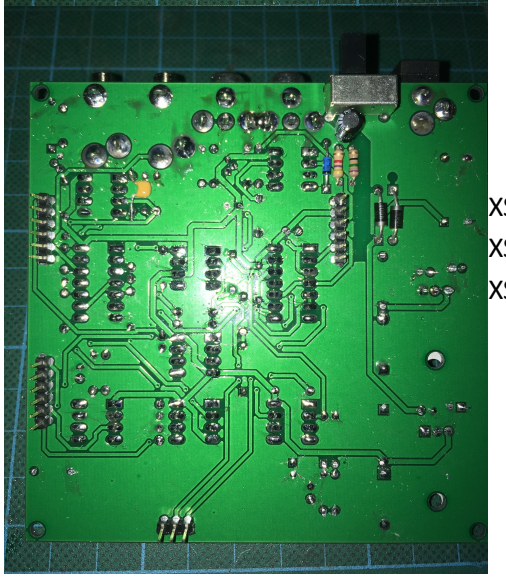


U1: LM6172
U2: LM311
U3: 7555
U4: CD4066
U5: NE592N8
U6: 7555
U7: TL072
U8: CD4093
U9: LF398

VI. Hardware







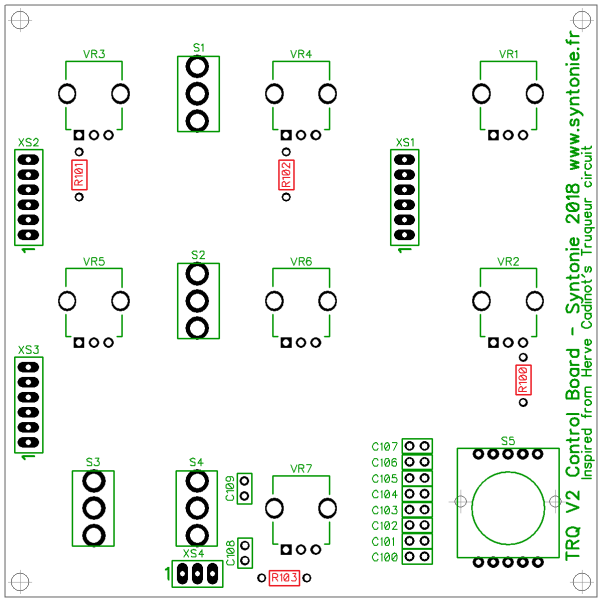
Now, we can place all the hardware parts. Note that XS2, XS3, and XS4 are soldered on the other side/solder side of the board, all other parts are soldered on the silkscreen side/component side.

J1: RCA connector horizontal
J2: RCA connector horizontal
J3: 3.5mm jack
J4: 3.5mm jack

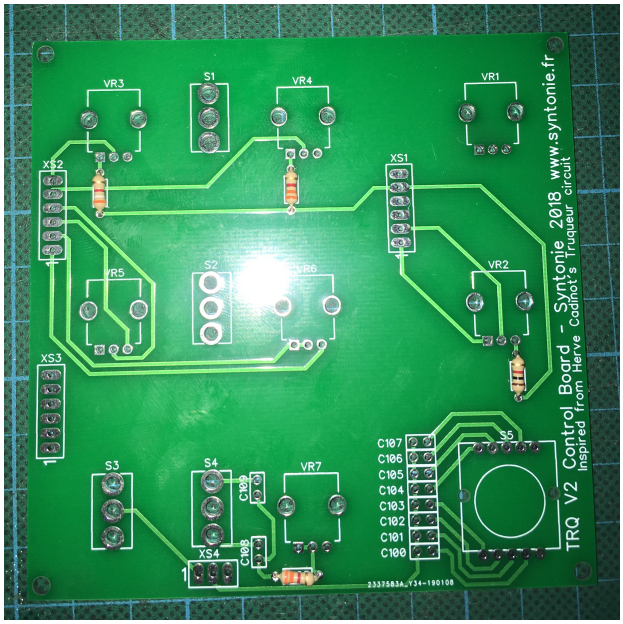
XS2: 6 pin connector
XS3: 6 pin connector
XS4: 3 pin connector

B. Control Board

I. Resistors

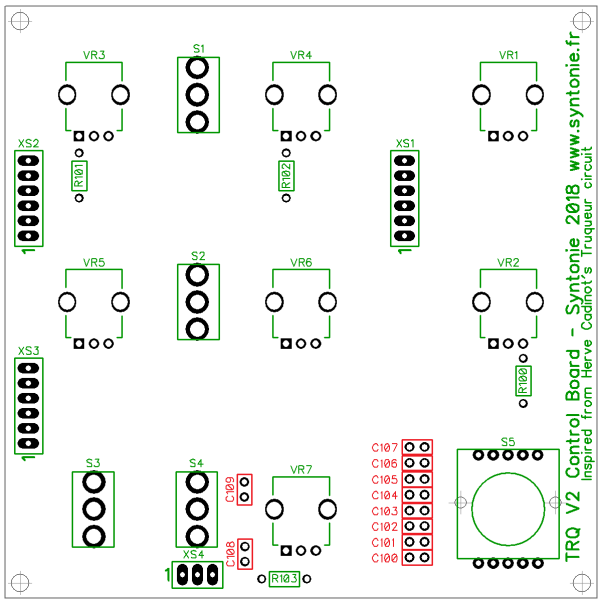


Place all the resistors:

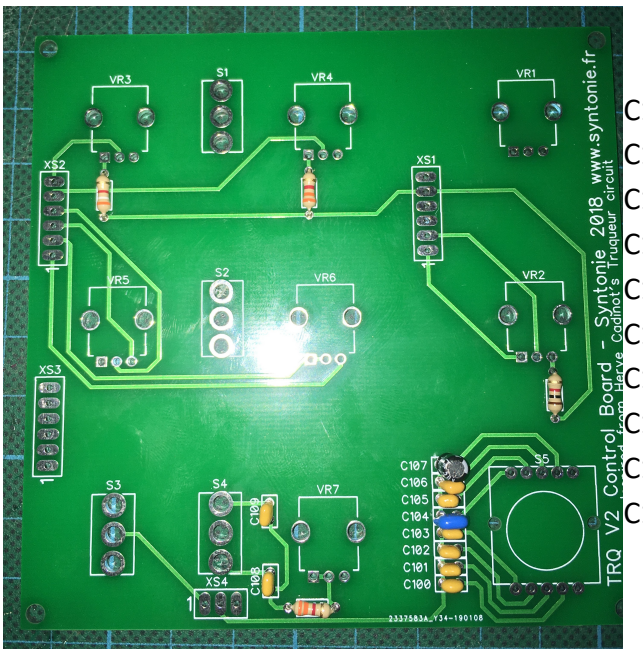


R100: 1K (Brown, Black, Red)
R101: 3K9 (Orange, White, Red)
R102: 3K3 (Orange, Orange, Red)
R103: 3K3 (Orange, Orange, Red)

II. Capacitors



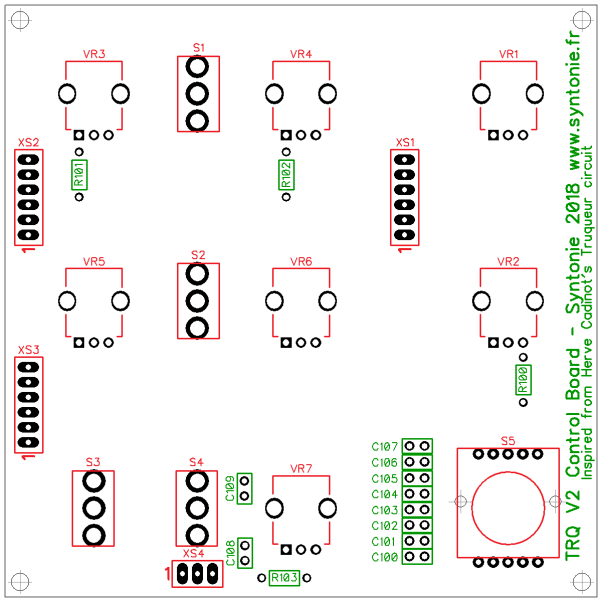
Place all the capacitors, C107 footprint is a bit small for an electrolytic cap but it should fit, orientation isn't important here:



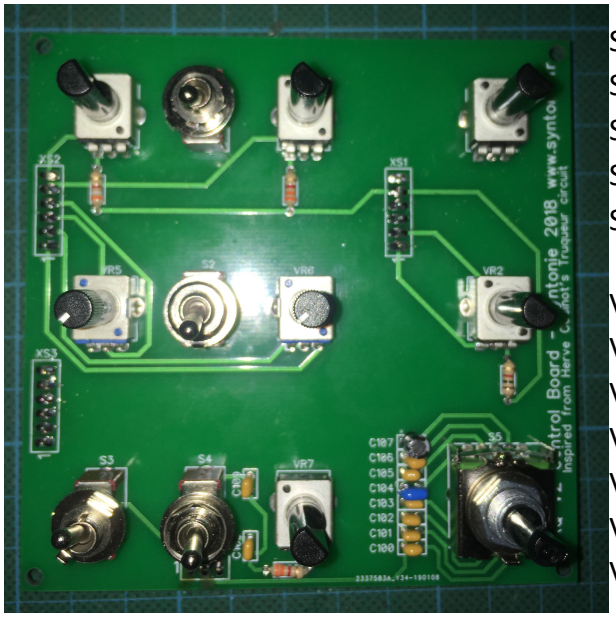
C100: 470pF (Ceramic, marked 471)
C101: 1nF (Ceramic, marked 102)
C102: 4.7nF (Ceramic, marked 472)
C103: 10nF (Ceramic, marked 103)
C104: 47nF (Ceramic, marked 473)
C105: 100nF (Ceramic, marked 104)
C106: 330nF (Ceramic, marked 334)
C107: 1uF (Electrolytic)
C108: 22pF (Ceramic, marked 220)
C109: 1nF (Ceramic, marked 102)

Again, you can bend the electrolytic capacitor so it sits parallel to the board, it will fit better between the controlboard and the front panel.

III. Hardware

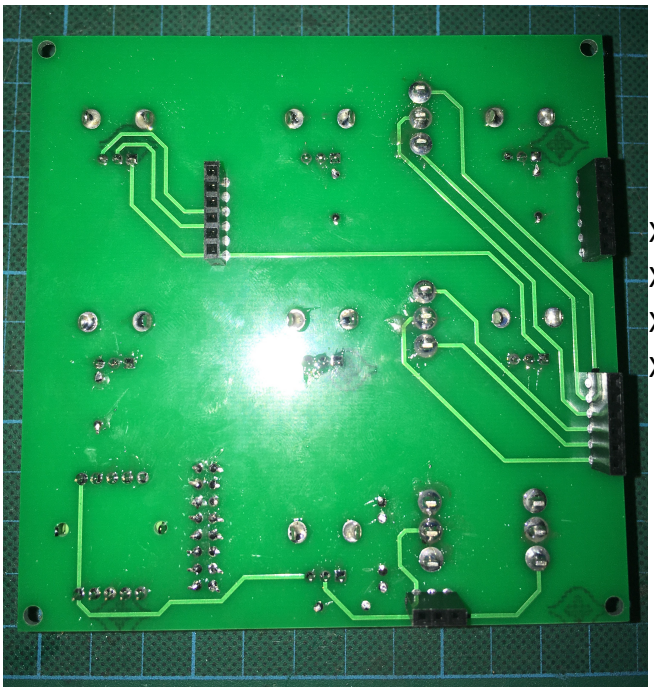


Place all the switches (mind that there is 3 ON-ON switches, 1 ON-OFF-ON switch and a rotary switch), place all the potentiometers, check for value under the body of the pot, and finally place the 4 connectors (on the solder side of the board):



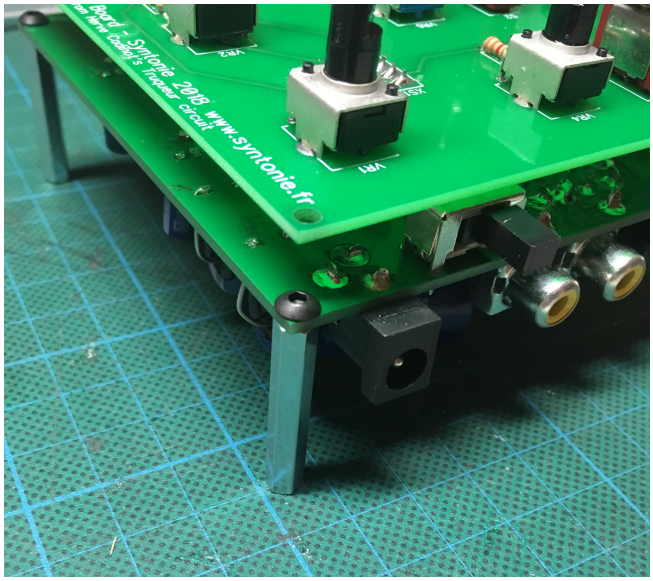
S1: Toggle ON-ON switch
S2: Toggle ON-ON switch
S3: Toggle ON-ON switch
S4: Toggle ON-OFF-ON switch
S5: Rotary switch

VR1: 1K linear (marked B102)
VR2: 1K linear (marked B102)
VR3: 100K linear (marked B104)
VR4: 100K linear (marked B104)
VR5: 100K logarithmic (marked A104, blue body)
VR6: 1M linear (marked B105, blue body)
VR7: 1K linear (marked B102)



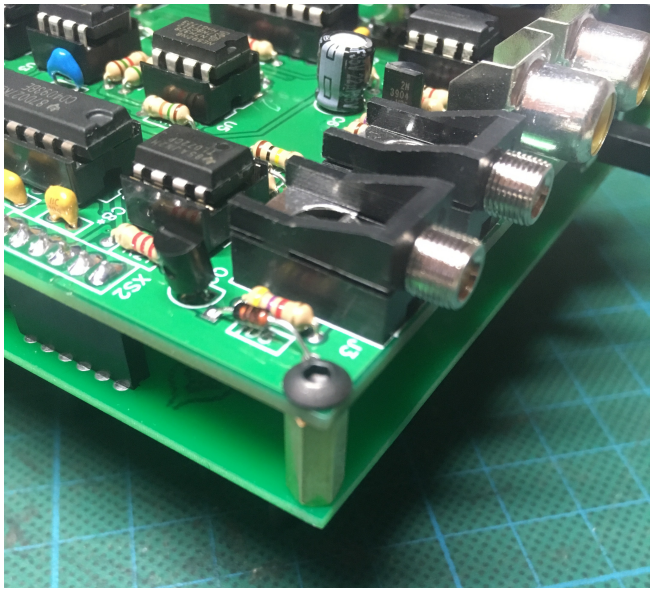
XS1: 6pin female connector
XS2: 6pin female connector
XS3: 6pin female connector
XS4: 3pin female connector

Now that everything is soldered in place, it's time to test the TRQ. Add the spacers to the mainboard with spacers on the components side, so the circuit doesn't touch what's underneath, as mentionned before, be careful not shorting the big caps. You can now plug the mainboard to the controlboard. Plug the PSU, turn the ON/OFF switch on, plug a source to J1, plug a monitor to J2. You should now have something displayed. Check with the user guide that every control work as it should, if not, check around associated components that there is no short/cold solder joints.

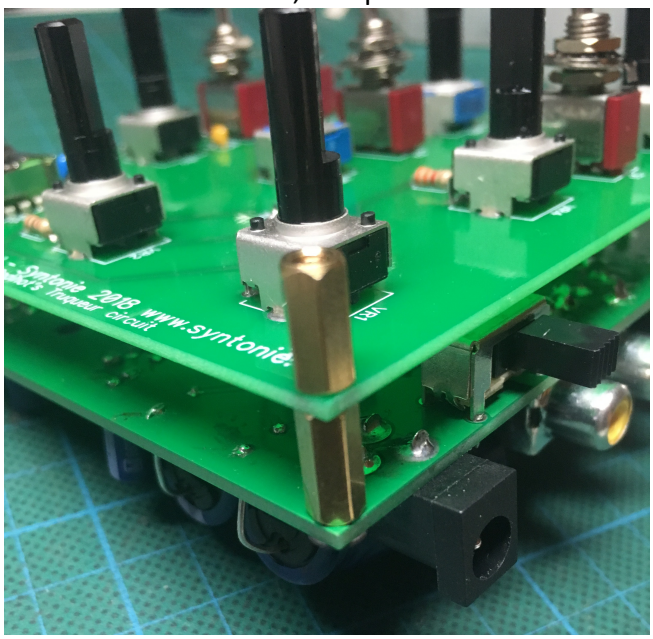


C. Enclosure assembly

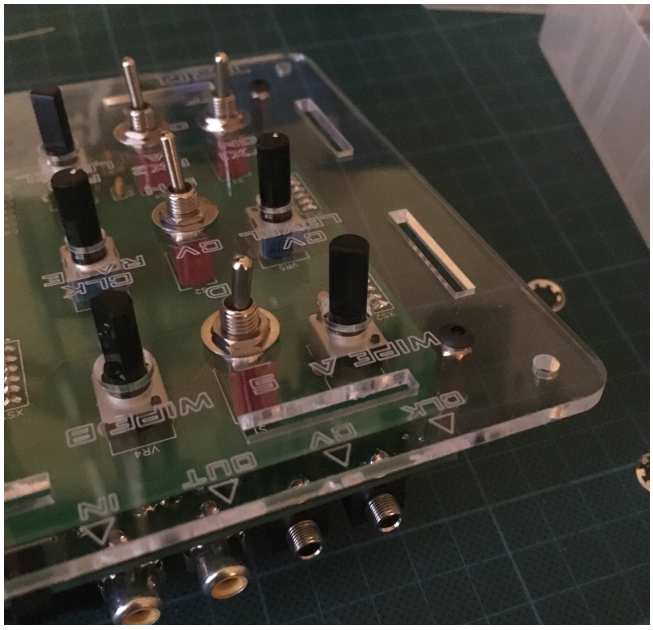
If you used the spacers in the part just before you can now remove them. Place the 11mm FF spacer between the two board, secure them with 6mm screws on the mainboard, components side.



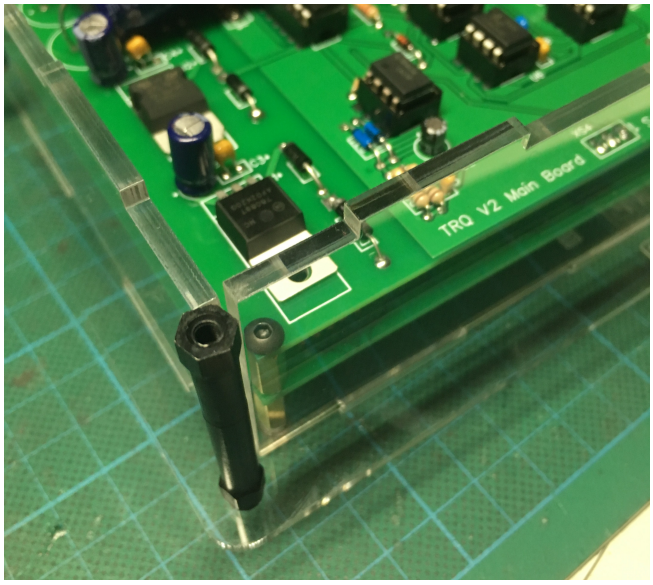
Place the 10mm MF spacers on the controlboard, components side.



Now, remove the nuts/washers from the 4 toggle switches (you can leave the one on the rotary switch), and place the faceplate on the circuit boards, secure them using 6mm screws. You can add the nuts/washers on the toggle switches (the ones with teeth arent't used since the boards are secured with screws).



Now, place the 45mm spacers in each corner of the frontplate using 6mm screws.
Add the lateral plates.



Add the bottom plate, and use the 8mm screws + rubber feet to secure it to the rest of the assembly.

FX1
ON
FX2
A
FX1
LEVEL
TRQ