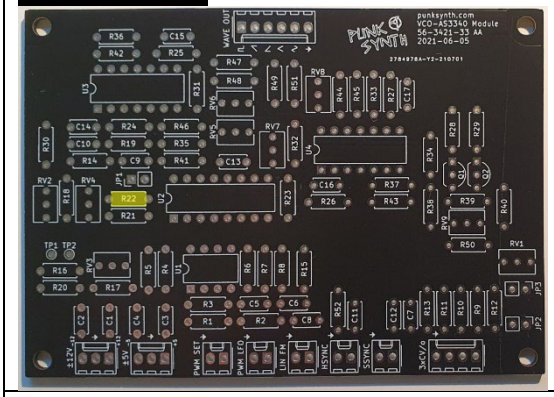
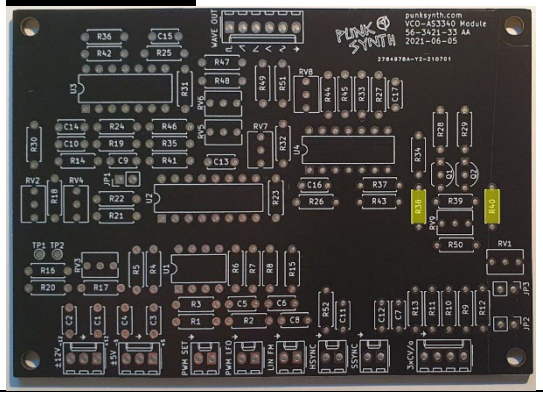
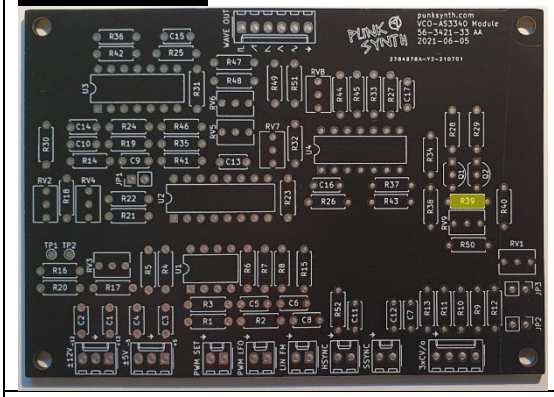
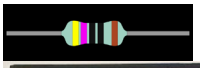
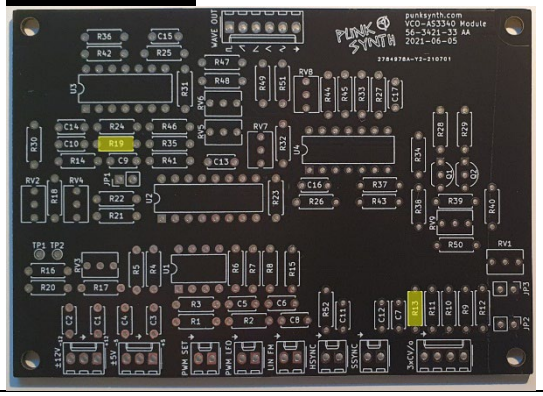
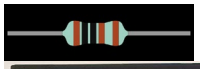
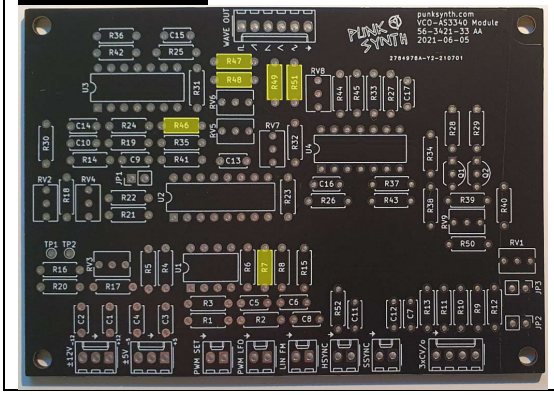
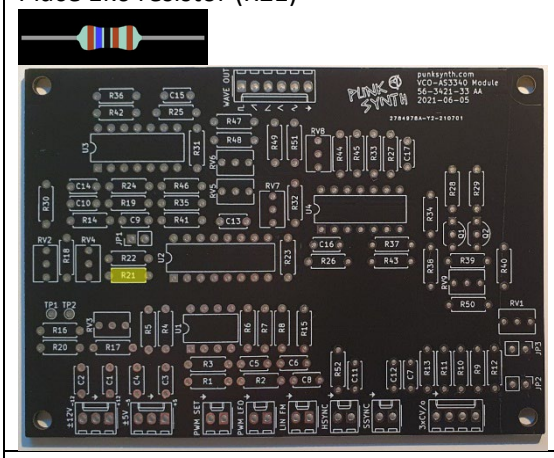
Build Instruction

Mounting and soldering resistors

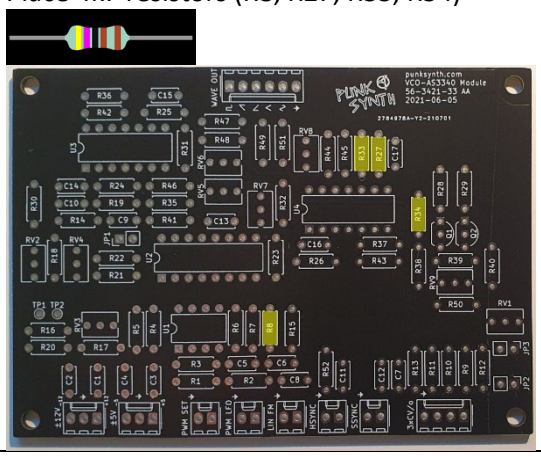
Start to place the resistors.

Place 20R resistor (R22)  	Place 220R resistors (R38, R40)  
Place 390R resistor (R39)  	Place 470R resistors (R13, R19)  
Place 1k resistors (R7, R46, R47, R48, R49, R51)  	

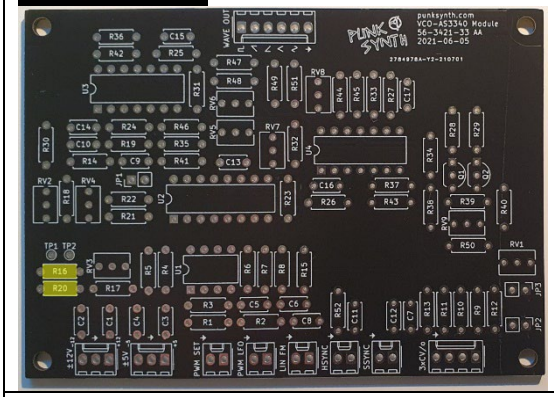
Place 1k6 resistor (R21)



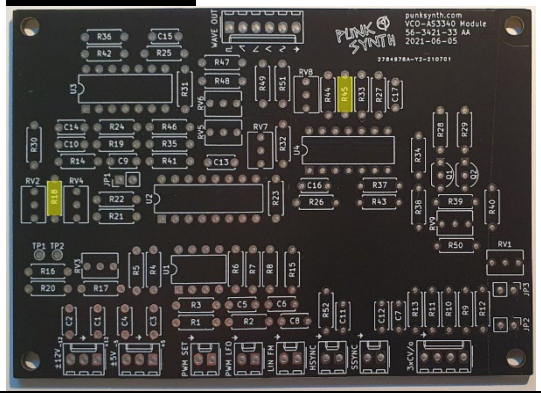
Place 4k7 resistors (R8, R27, R33, R34)



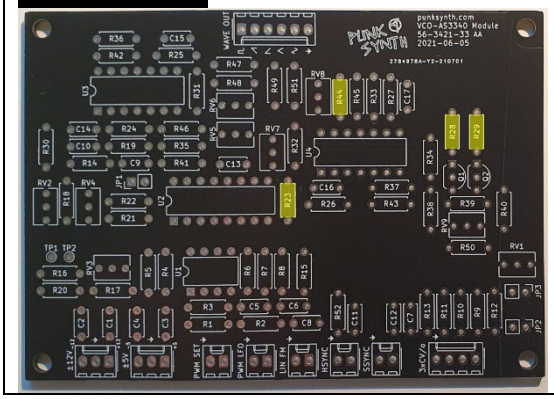
Place 5k6 resistors (R16, R20)



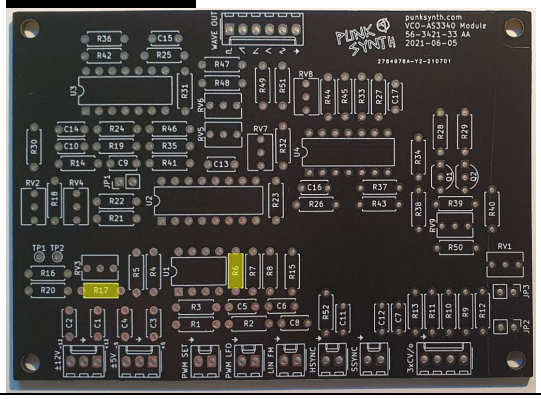
Place 9k1 resistors (R18, R45)

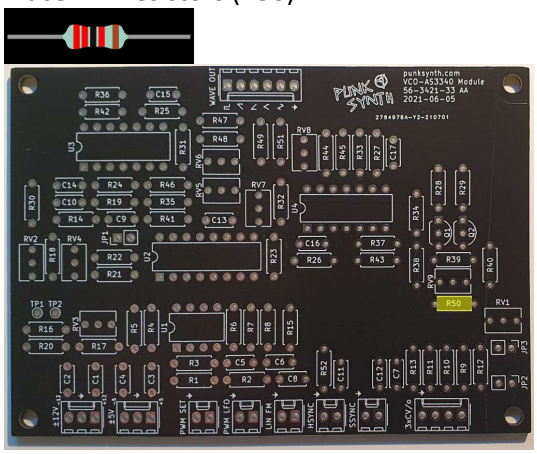
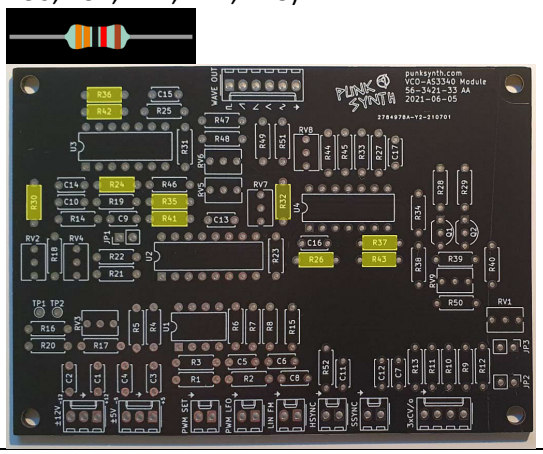
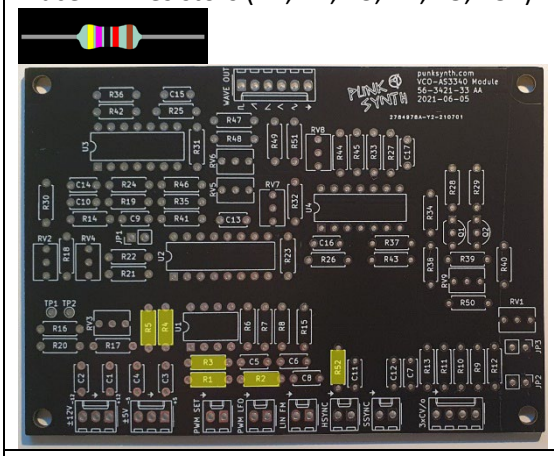
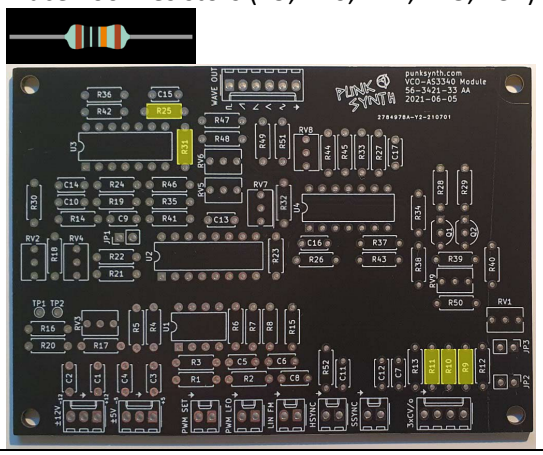
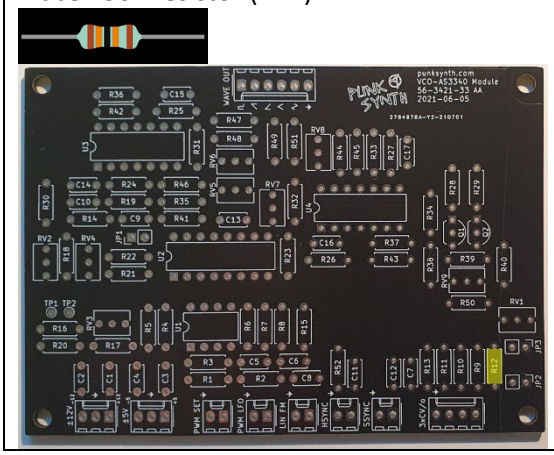
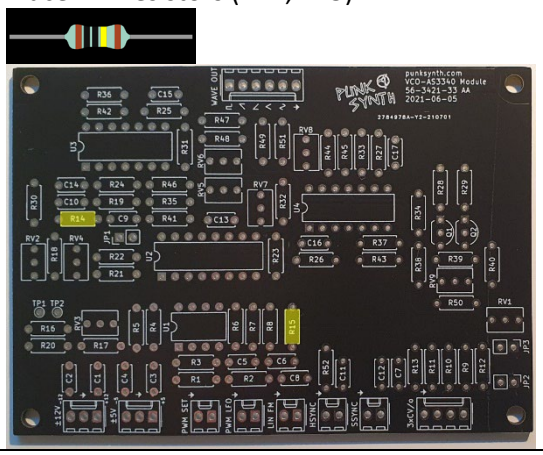


Place 10k resistors (R23, R28, R29, R44)



Place 18k resistor (R6, R17)

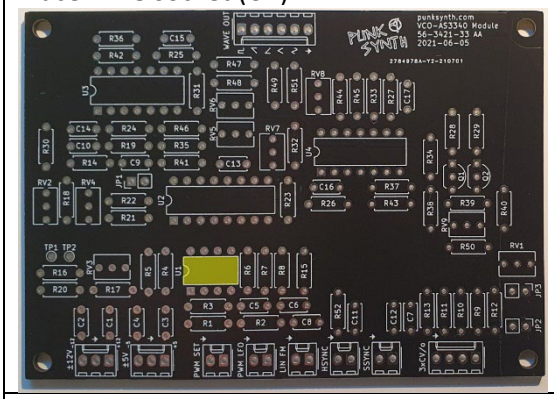
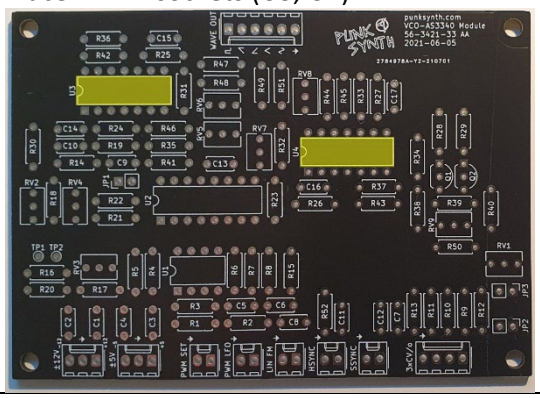
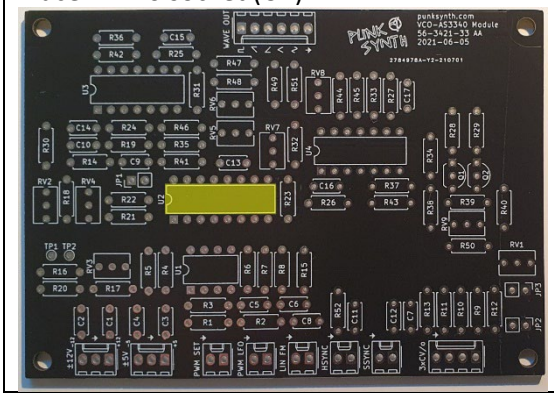


Place 22k resistors (R50) 	Place 33k resistors (R24, R26, R30, R32, R35, R36, R37, R41, R42, R43) 
Place 47k resistors (R1, R2, R3, R4, R5, R52) 	Place 100k resistors (R9, R10, R11, R25, R31) 
Place 130k resistor (R12) 	Place 1M resistors (R14, R15) 

Solder all resistors and trim the legs afterwards.

Mounting and soldering DIL sockets

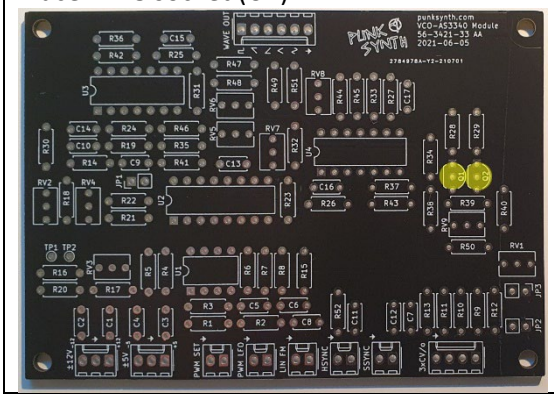
Start to place the sockets.

Place DIL 8 socket (U1) 	Place DIL 14 sockets (U3, U4) 
Place DIL 16 socket (U2) 	

Solder all sockets.

Mounting and soldering transistors

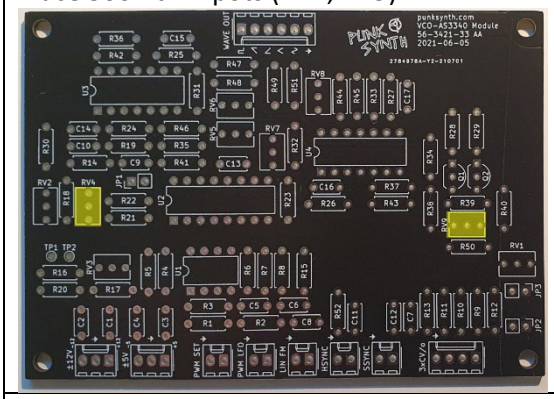
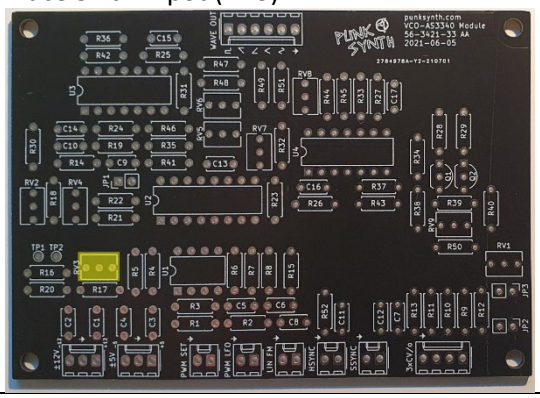
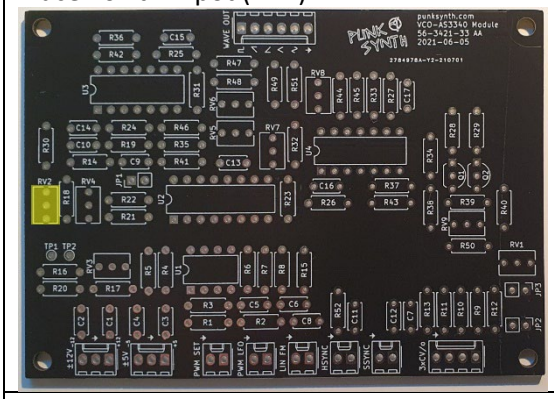
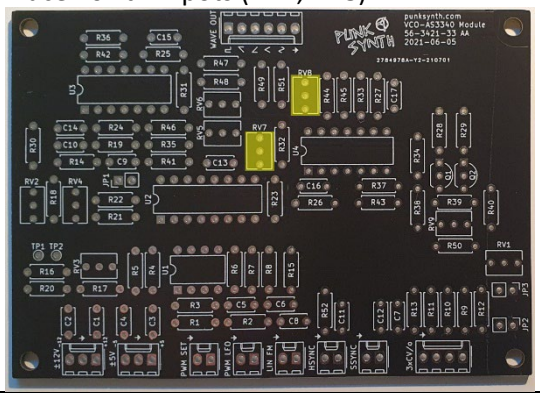
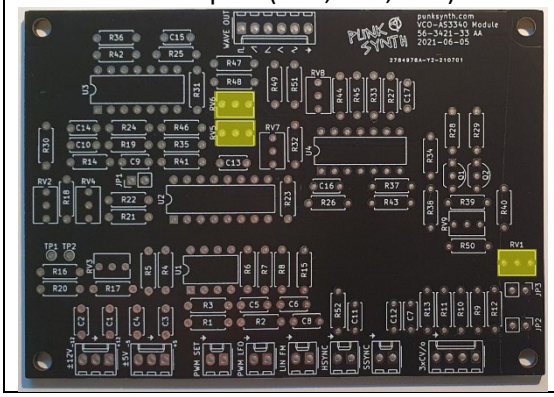
Start to place the transistors. Observe, these two transistors must be matchet!

Place DIL 8 socket (U1) 	

Solder all transistors.

Mounting and soldering trim potentiometers

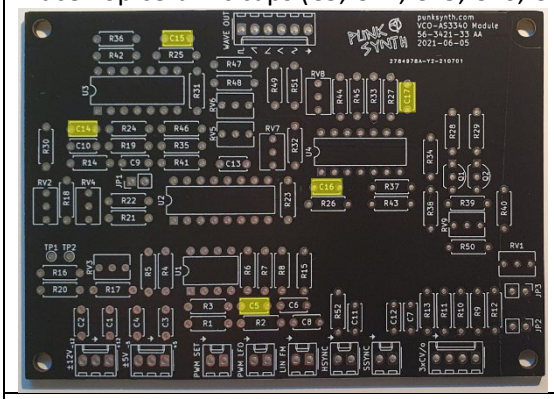
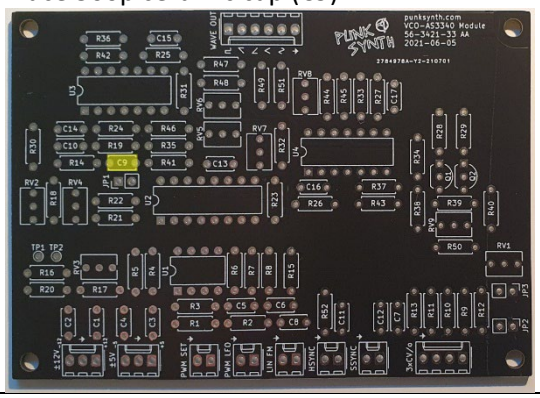
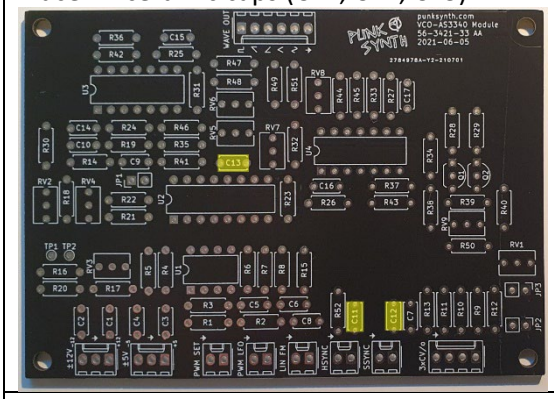
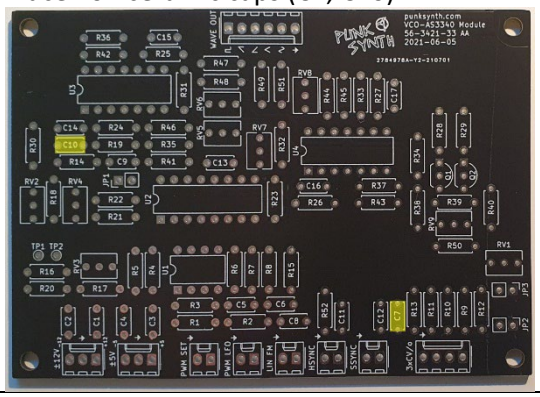
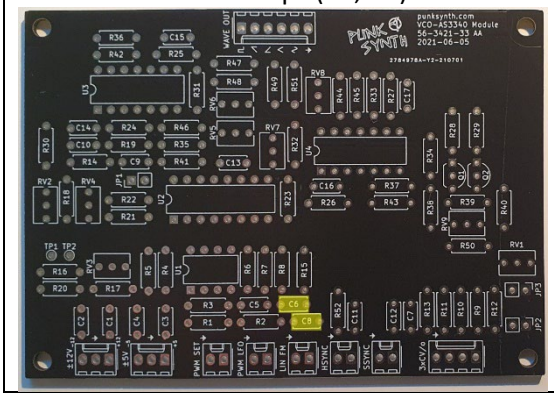
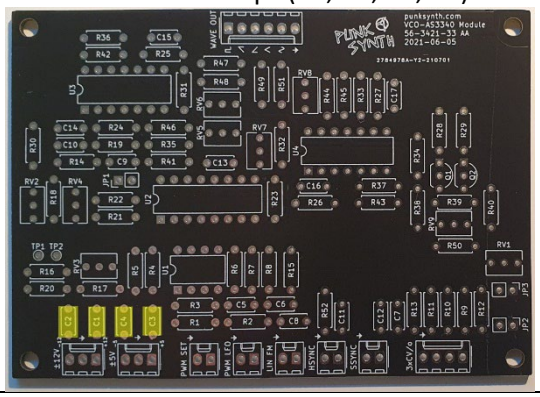
Start to place the trim potentiometers.

Place 500R trim pots (RV4, RV9) 	Place 5k trim pot (RV3) 
Place 10k trim pot (RV2) 	Place 20k trim pots (RV7, RV8) 
Place 100k trim pots (RV1, RV5, RV6) 	

Solder all trim potentiometers and trim the legs afterwards.

Mounting and soldering capacitors

Start to place the capacitors.

Place 10p ceramic caps (C5, C14, C15, C16, C17) 	Place 560p ceramic cap (C9) 
Place 1n ceramic caps (C11, C12, C13) 	Place 10n ceramic caps (C7, C10) 
Place 100n ceramic caps (C6, C8) 	Place 2u2 ceramic caps (C1, C2, C3, C4) 

Solder all capacitors and trim the legs afterwards.

Settings and tuning instructions

Equipment needed:

- Voltmeter capable of measuring mV range
- Oscilloscope

Pitch tuning

The tuning below sets the AS3340 to 1V/octave with 0V = C1 (32.7 Hz). The frequency can reach a broad range from -6V = C-5 (0.5 Hz) to 9V = C10 (16744 Hz).

The pitch tuning steps are as follows:

1. Connect ±12V power and ±5V power voltage.
2. Before tuning adjust the power voltage to -12.000V, +12.000V, -5.000V, and +5.000V.
3. Connect oscilloscope to WAVE OUT connector. Set the probe to the saw tooth wave (pin 2) and probe ground to the AGND (pin 6).
4. Set the voltmeter probes between TP1 and TP2. Adjust RV3 until voltage is 0mV.
5. Put the jumper over JP1. Adjust RV2 until the pitch (frequency) is key C6 = 1046.5 Hz. Remove the jumper.
6. Set the jumper over JP2. Adjust RV1 until the pitch (frequency) is key C6 = 1046.5 Hz. Remove the jumper.
7. Set the jumper over JP3. Adjust RV4 until the pitch (frequency) is key C1 = 32.7 Hz. Remove the jumper.
8. Done!

Waveform level setting

The level for each waveform shall be ±5V (10 Vpp (Vpp is voltage peak to peak)).

The waveform level setting steps are as follows:

1. Connect the oscilloscope to WAVE OUT connector. Set the probe to the pulse wave (pin 1) and probe ground to the AGND (pin 6). The default PWM is set to 50%.
2. Set the jumper over JP2 to get key C6 = 1046.5 Hz.
3. Adjust RV5 until level is ±5V.
4. Move the oscilloscope probe to sawtooth wave (pin 2).
5. Adjust RV6 until level is ±5V.
6. Move the oscilloscope probe to inverted sawtooth wave (pin 3). Double check that the level is ±5V. (The adjustment was done in point 5).
7. Move the oscilloscope probe to triangle wave (pin 4).
8. Adjust RV7 until level is ±5V.
9. Move the oscilloscope probe to sine wave (pin 5).
10. Adjust RV8 until level is ±5V.
11. If the sine wave is not symmetric, adjust RV9 until symmetry is reached.
12. Done!