



**Key to PCB screen print:**

**n:** This signifies NPN BC547 transistors. Note the correct pinout as shown by the half circles.

Please observe the correct polarity for all ICs, voltage regulators, diodes and electrolytic capacitors.

**Bill of Materials**

330R x 1 1K x 24 2K2 x 1 10K x 6 12K x 2 100K x 17 100K 1% x 3*  <u>All resistors ¼ watt metal film.</u>	<u>10nF x 2</u> <u>100nF x 2</u> <u>10uF x 1</u> <u>47uF x 2</u>	<b>TOOL V2 PIC</b>  <u>TL084 x 4</u> <u>TL072 x 1</u>  <u>BC547 x 2</u>  <u>1N4148 x 8</u>  <u>78L05 x 1</u>  <u>3mm red LED x 6</u>  <u>3mm green LED x 4</u>  <u>18 pin IC socket x 1</u> <u>14 pin IC socket x 4</u> <u>8 pin IC socket x 1</u>	<u>B100K x 7</u> metal shaft  <u>B100K x 4, 30mm sliders**</u>  <u>10K trimmer x 1</u>  <u>3.5mm socket x 14</u>  <u>SPDT toggle x 1 (on/on)</u>  <u>Tactile switch x 2</u>  <u>Push button x 4</u>  <u>Button caps x 4</u>  <u>Male header x 2 (cut to size)</u> <u>Female header x 2 (cut to size)</u> <u>Power header x 1</u>  <u>Knobs x 7</u>  <u>Slider caps x 4***</u>
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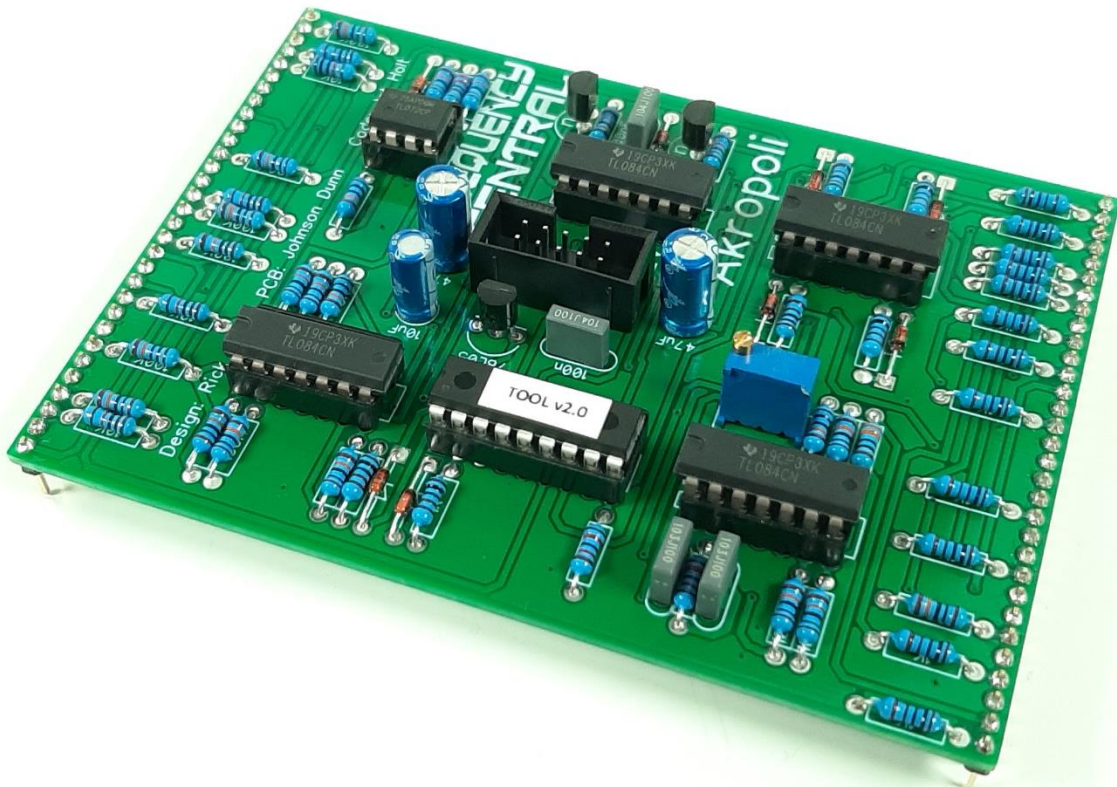
\* They don't have to be 100K exactly, they just have to be matched to each other, so for example if they are all 99.9K that's fine. Grab a bunch of 100K resistors, measure each one, make little piles of 100k, 99.9K, 99.88K etc. Before long one of the piles will have three resistors in it, that's your matched set! Should only take 5 minutes.

\*\* You can also order direct from Frequency Central when you order your PCBs/panel

\*\*\* Yes, [these](#), despite the description.

## Main PCB assembly

1. Solder the diode and all resistors
2. Solder all 6 IC sockets
3. Solder the non electrolytic capacitors
4. Solder the 78L05 and BC547s– watch the polarities!
5. Solder the box power header. Make sure the notch lines up with the screenprint legend. If in doubt, have a look at a power cable, and make sure when inserted into the header the red stripe lines up with the -12V screenprint.
6. Solder all electrolytic capacitors and the trimmer
7. Cut male headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.

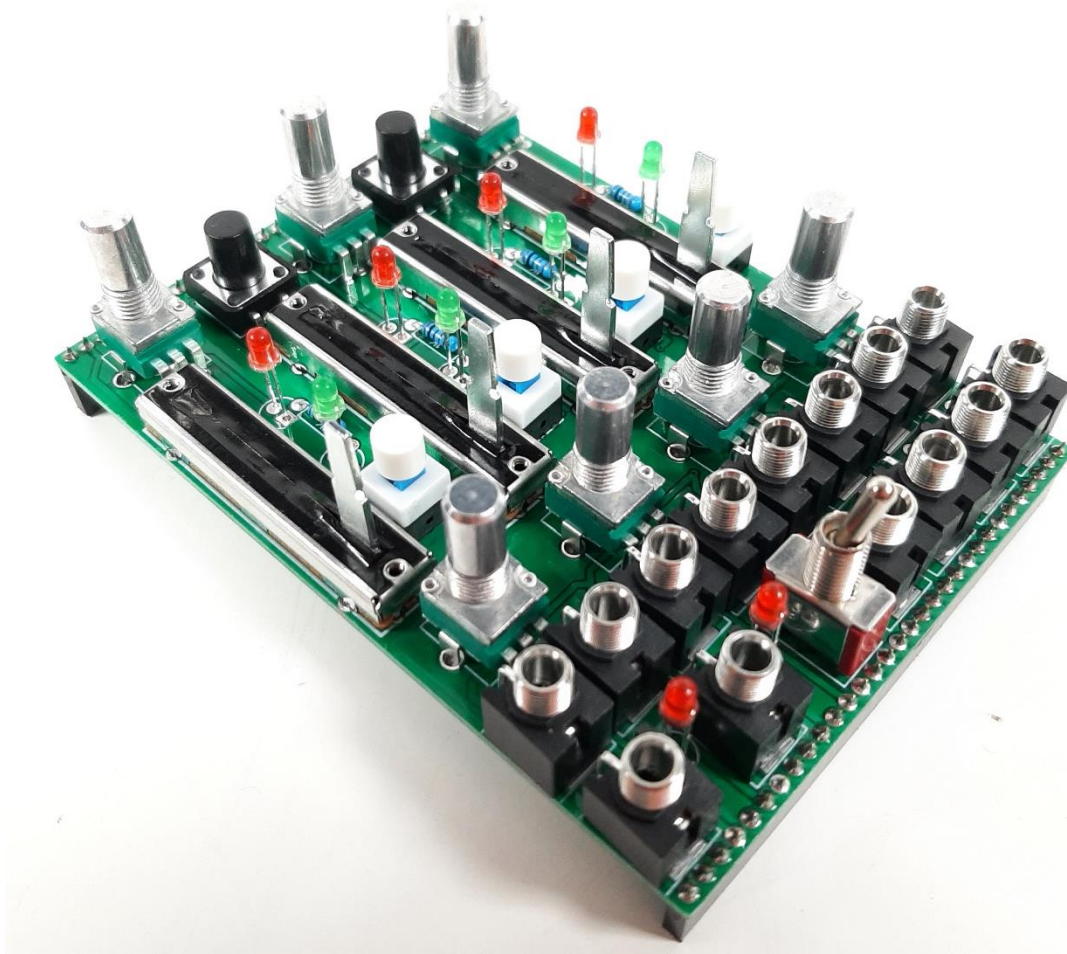
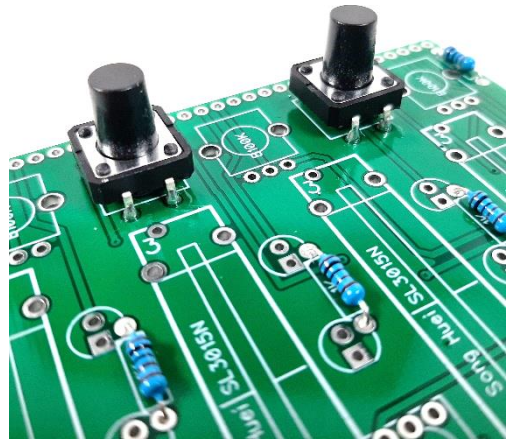




## Control PCB

**It's quite important to follow this sequence!**

1. Solder the 5 resistors
2. Place the PCB on a flat surface. Place the 2 tactile switches into their solder pad. Do not push them all the way through, they should sit proud of the PCB (see photo), their legs should not protrude through the other side. Solder them into place from the top of the PCB.
3. Push buttons
4. Sliders
5. Pots Solder the 7 x metal shaft pots. Use the panel to ensure these line up nicely.
6. Sockets Solder 14 x sockets and the toggle switch. Use the panel to ensure these line up nicely.
7. Cut female headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.
8. Solder the 10 x LEDs. Use the panel to ensure these line up nicely



Bolt the metal shaft pots and the sockets to the panel using their nuts and washers. Pop the knobs on the pots and the caps on the sliders. Looks nice huh?

### Calibration

1. Set all rotary pots fully anticlockwise
2. Set all sliders to 5
3. Plug a patch cable into Akropoli's CV Out
4. Using a [digital multimeter](#) (DMM), connect the black probe to the sleeve of the patch cable (ie ground), connect the red probe to the tip of the patch cable (I find a couple of [crocodiles](#) can help here)
5. Set the DMM to read DC voltage.
6. Adjust the trimmer on the back of Akropoli until the DMM reads 5.00V.

All done! Go be generative!



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<http://www.frequencycentral.co.uk/>