FREQUENCY CENTRAL

Build documentation for:

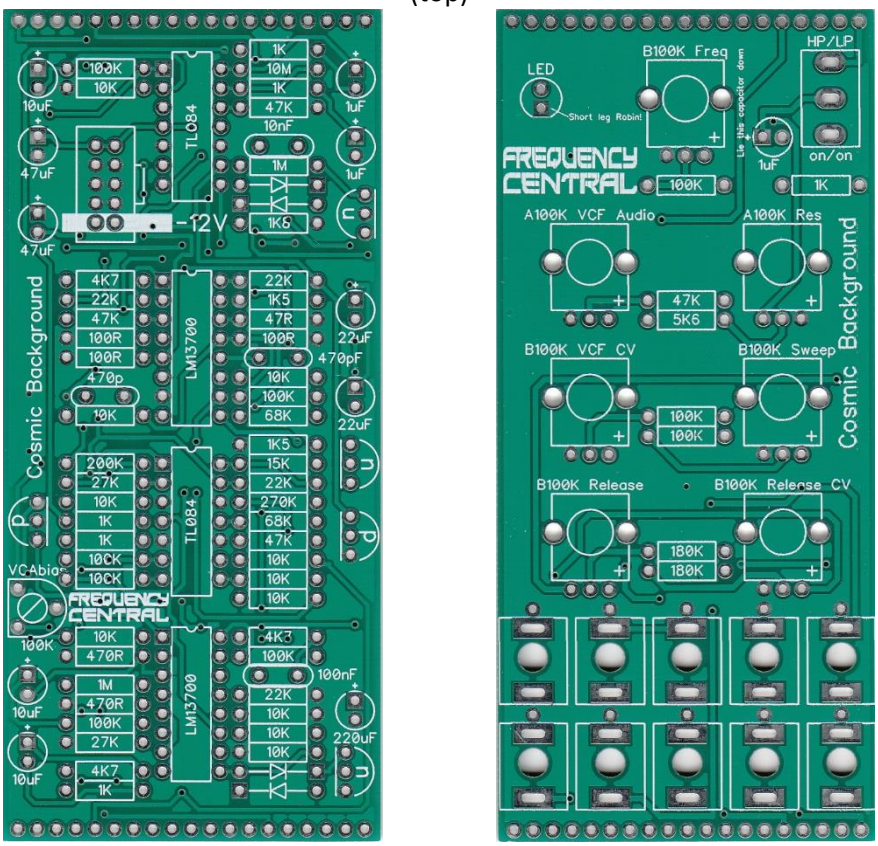
COSMIC BACKGROUND

100% analogue fully modular super flexible drum voice module

Main PCB

Control PCB

(top)



(bottom)

Key to PCB screen print:

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

p: This signifies PNP BC557 transistors. Note the correct pinout as shown by the half circles.

The PCB shows the correct orientation for BC547/BC557. Other transistor types can be used (eg 2N3904/2N3906), but please observe the correct pinout. Please observe the correct polarity of the electrolytic capacitors and diodes.

Bill of Materials			
47R x 1 100R x 3 470R x 2 1K x 6 1K5 x 2 1K8 x 1 4K7 x 3 5K6 x 1 10K x 11 15K x 1 22K x 4 27K x 2 47K x 4 68K x 1 100K x 9 180K x 2 200K x 1 270K x 1 1M x 2 10M x 1 All resistors ¼ watt metal film.	470pF x 2 10nF x 1 100nF x 1 1uF electrolytic x 3 10uF electrolytic x 3 22uF electrolytic x 2 47uF electrolytic x 2 220uF electrolytic x 1	LM13700 x 2 TL084 x 2 BC547 x 3 BC557 x 2 1N4148 x 4 3mm red LED x 1 14 pin socket x 2 16 pin socket x 2	A100K x 2 B100K x 5 SPDT toggle x 1 100K trimmer x 1 3.5mm socket x 10 Male 40 pin header Female 40 pin header 10 pin box header x 1 Big knob x 1 Small knob x 6

Main PCB assembly

1. Solder all diodes and all resistors.
   Tip - don't mix up the 100R and 100K

2. Solder all IC sockets

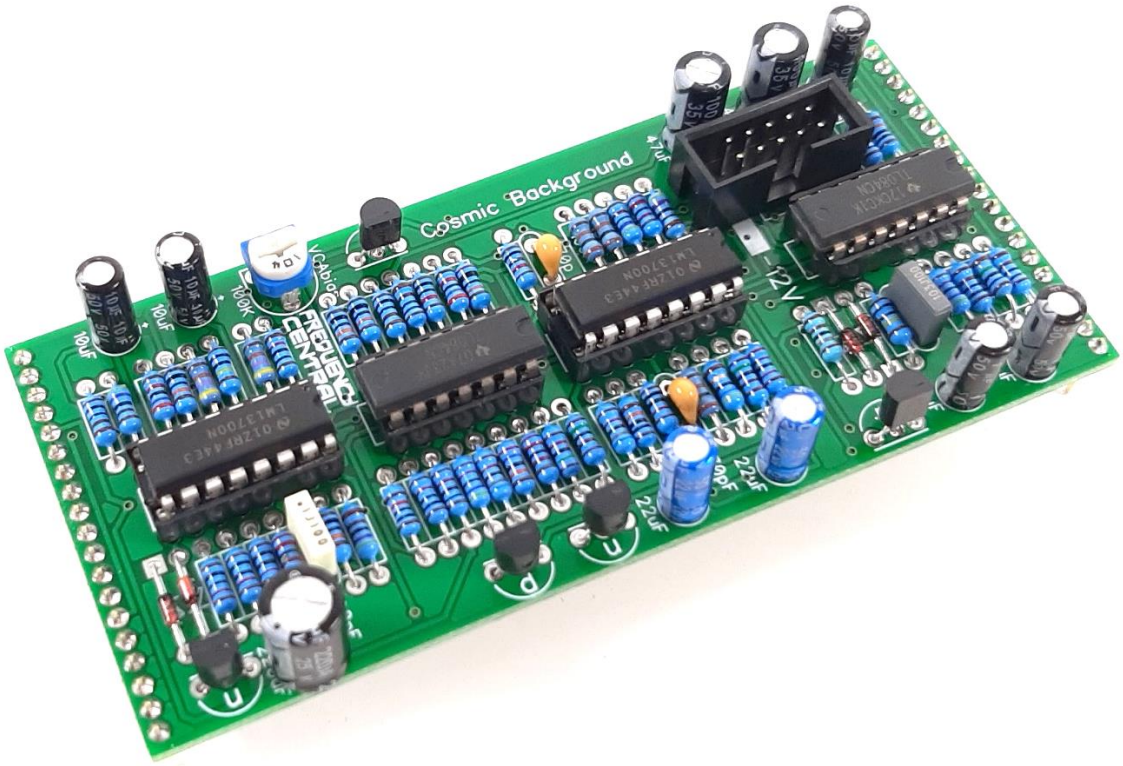
3. Solder all non-electrolytic capacitors

4. Solder all transistors and the trimmer

5. Solder the power header – if you're using box type, observe correct polarity

6. Solder all electrolytic capacitors

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 assembly

1. Solder all resistors

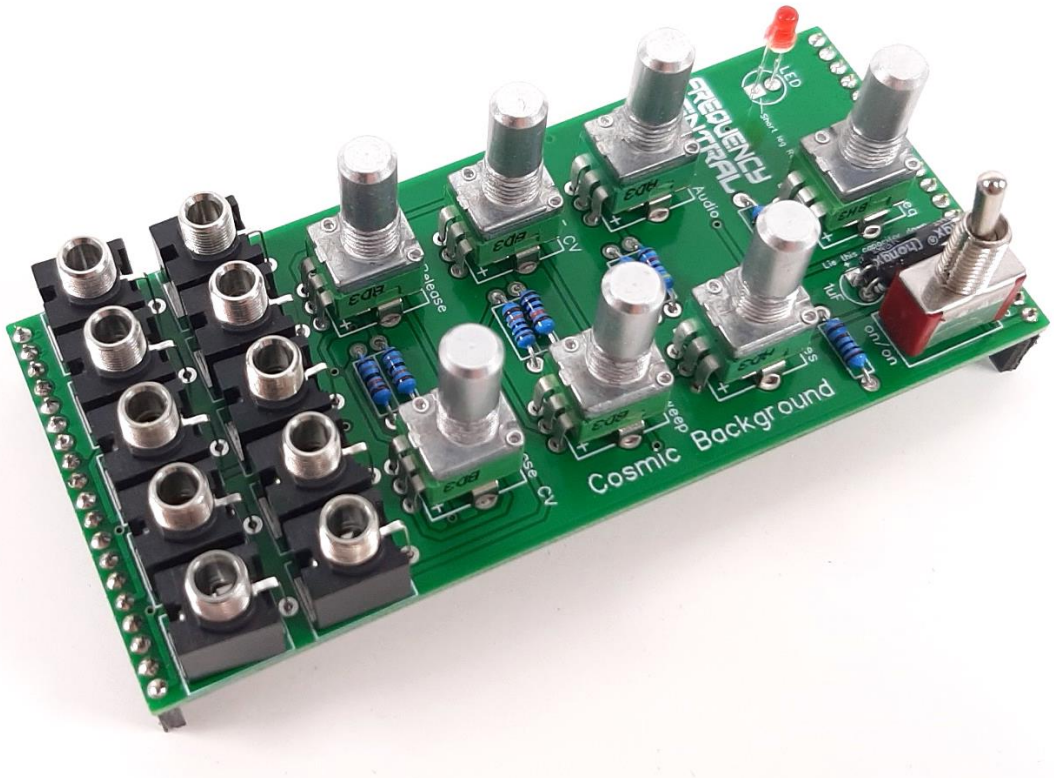
2. Solder the 1uF capacitor – remember to lie it down as shown in the photo below (this capacitor is tired).

3. Place all pots and the switch on the PCB, and fold over their mounting tabs at the rear of the PCB, then place the panel over them. This will assure that they are correctly positioned. Flip the whole lot over and solder the pots into place.

4. Place all sockets on the PCB, making sure the ground tabs line up with the PCB's ground pads, then place the panel over them. This will assure that the sockets are correctly positioned. Flip the whole lot over and solder the sockets into place.

5. Put the LED through its pads. Present the panel to the PCB, flip the whole lot over, make sure the LED stick though the holes in the panel, solder in place.

6. Cut female headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.



Note: Not all pots and sockets are equal in height. Providing you use the ones in the links provided, everything will line up perfectly.

Make sure that you plug the **Main PCB** into the **Pots 'n' sockets PCB** the right way around – Frequency Central logo should be the right way up.

Calibration

Adjust Bias trimmer to sweet spot, ie a nice clean undistorted VCA output with no DC thunk when a snappy ADSR is applied to a CV input. I do this without any audio at the inputs. The chances are that that the sweet spot is around the mid position.

RDH 04/02/22

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