FREQUENCY CENTRAL

Build documentation for:

INFINITELY MAYBE

Infinitely Maybe is a full featured randomness module, with a number of sources of randomness:

- White noise
- Pink noise
- Sample and hold circuit
- Random gates circuit

An onboard CV mixer allows you to mix two different sources into the sample and hold circuit. White noise is normalised to CV input 1, Pink noise is normalised to CV input 2

Infinitely Maybe has an onboard clock for triggering the sample and hold circuit. This may be overridden with an external clock if required via the clock in socket.

There is a built in LAG circuit, which enables the S/H OUT to slide between voltages at a predetermined rate. This function can be remotely controlled via the LAG IN

Finally, a random gates output is derived from the S/H Out. With the MAYBE knob at 0 a constant gate is available. The further you turn the MAYBE knob towards 10, the less likelihood of a gate is.

Main PCB	**Pots 'n' sockets PCB**
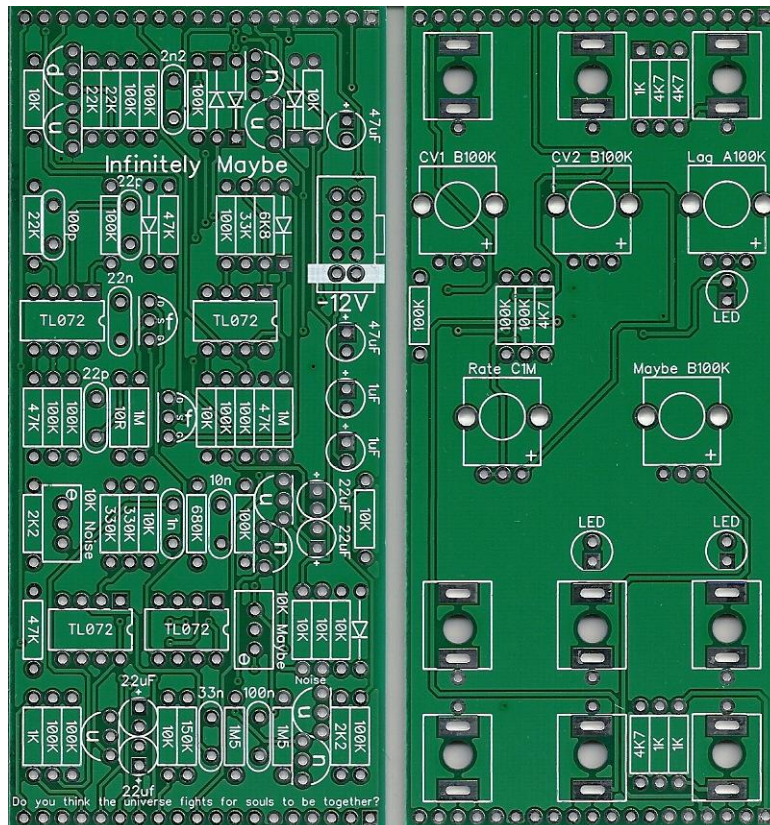
Key to PCB screen print:
n: This signifies NPN BC547 transistors. Note the correct pinout as shown by the half circles.
p: This signifies PNP BC557 transistors. Note the correct pinout as shown by the half circles.
f: This signifies 2N5485 FETs. Note the correct pinout as shown by the half circles.

The PCB shows the correct orientation for BC547/BC557/2N5485. Other transistor types can be used (eg 2N3904/2N3906), but please observe the correct pinout.

Please observe the correct polarity of the electrolytic capacitors.

Bill of Materials			
10R x 1	22pF x 2	TL072 x 4	A100K x 1
1K x 4	100pF x 1		(or these)*
2K2 x 2		BC547 x 7	
4K7 x 3	2n2 x 1	BC557 x 1	B100K x 2
6K8 x 1	10nF x 1	2N5485 x 2	(or these)*
10K x 9	22nF x 1		
22K x 3	33nF x 1	1N4148 x 6	A100K**
33K x 1	100nF x 1		
47K x 5		8 pin socket x 2	C1M x 1
100K x 16	1uF x 2		
150K x 1	22uF x 4	3mm red LED x 3	10K trimmer x 1***
330K x 2	47uF x 2		
680K x 1			3.5mm socket x 9
1M x 2			
1M5 x 2			Male 40 pin header
			Female 40 pin header
All resistors ¼ watt metal film			power header (cut to size)
			Big knob
			Little knob

* I prefer the Song Huei tall trimmers because they have a longer shaft and a white notch.
** This is for the Maybe pot, it's marked as B100K on the PCB, but please use A100K.
** See below, although there are two trimmers marked on the PCB, we're only using one.

Main PCB assembly

1. Firstly, there's a little hack to do to eliminate the need for the Maybe trimmer.
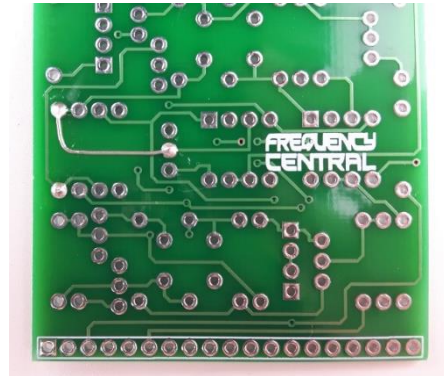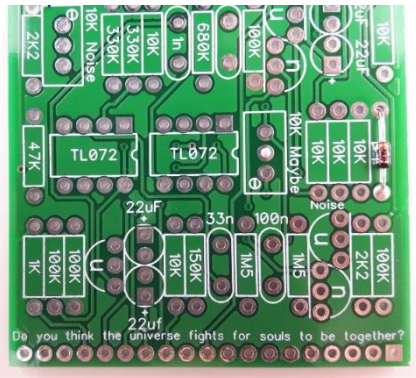

Insert diode as shown above, bend it's leg around to the trimmer's middle pad as shown.

2. Solder all resistors and the rest of the diodes

3. Solder all IC sockets

4. Solder all non-electrolytic capacitors

5. Solder all transistors and FETs

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

7. Solder all electrolytic capacitors and the single trimmer

8. Cut male headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.
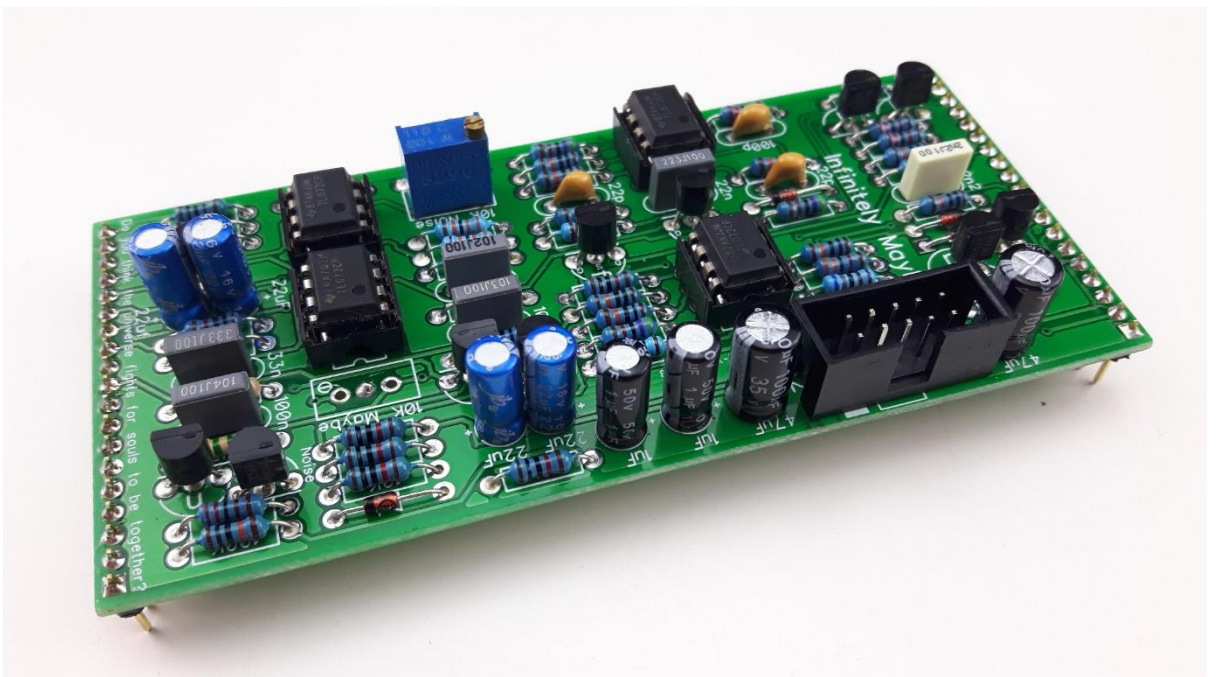
Pots 'n' sockets PCB

1. Solder all resistors

2. 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.

3. Place all pots 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. Put all 3 LEDs through their pads – be careful here as there are two different orientations. Present the panel to the PCB, flip the whole lot over, make sure the LEDs stick though the holes in the panel, solder in place.

5. Cut female headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.
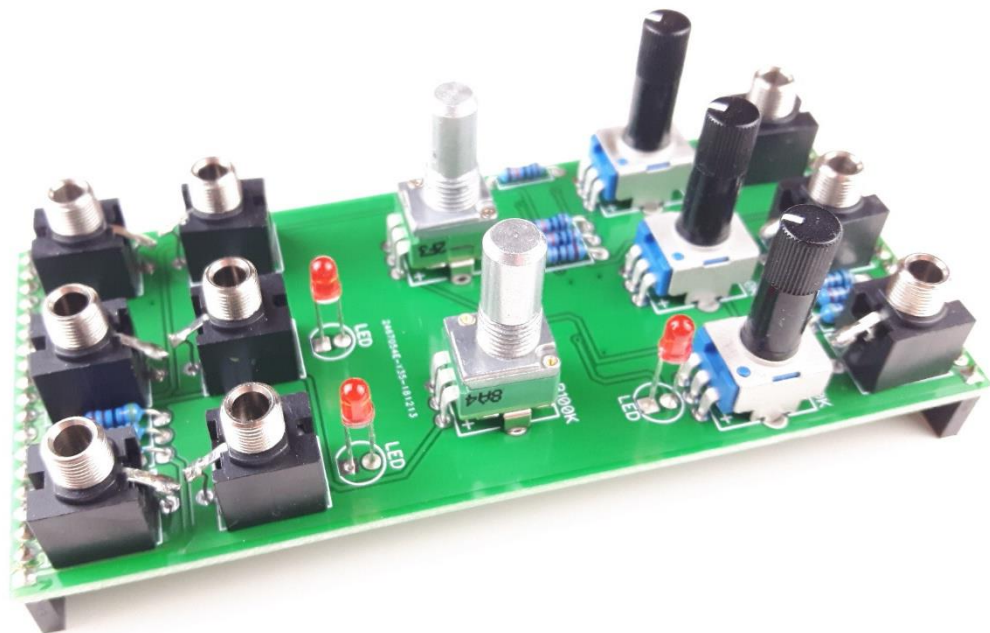
Note: Not all pots and sockets are equal in height. Providing you use the ones in the links provided, everything will line up perfectly.

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

Calibration

10K Noise: Turn both CV inputs to maximum, this sends white and pink noise to the sample and hold circuit. Turn the slew knob to minimum. Plug the SH Out into a filter set to self oscillate, or a VCO, so you can monitor the random voltages the SH Out gives out. Adjust the noise trimmer so the noise level is as loud as it can be without causing the S/H output to slew. If it's too loud, you'll notice SH will slew or slide a little between voltages.

You're done! Go do something random.