

FREQUENCY CENTRAL

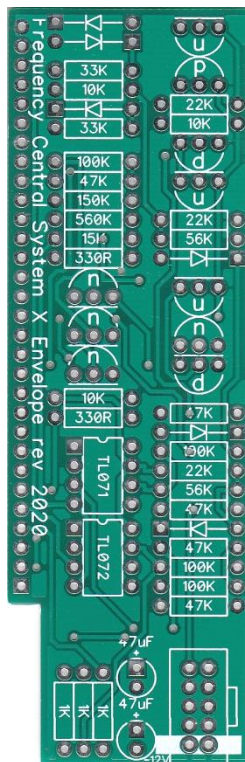
Build documentation for:

SYSTEM X ENVELOPE

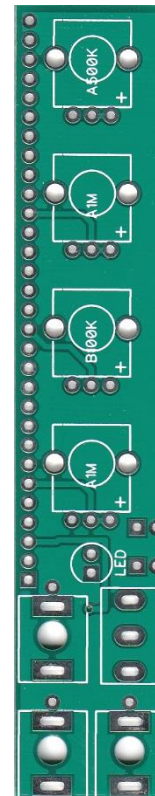
Rev 2020

Our updated take on this classic ADSR! Now even easier to build!

Main PCB



Control PCB



Key to PCB screen print:

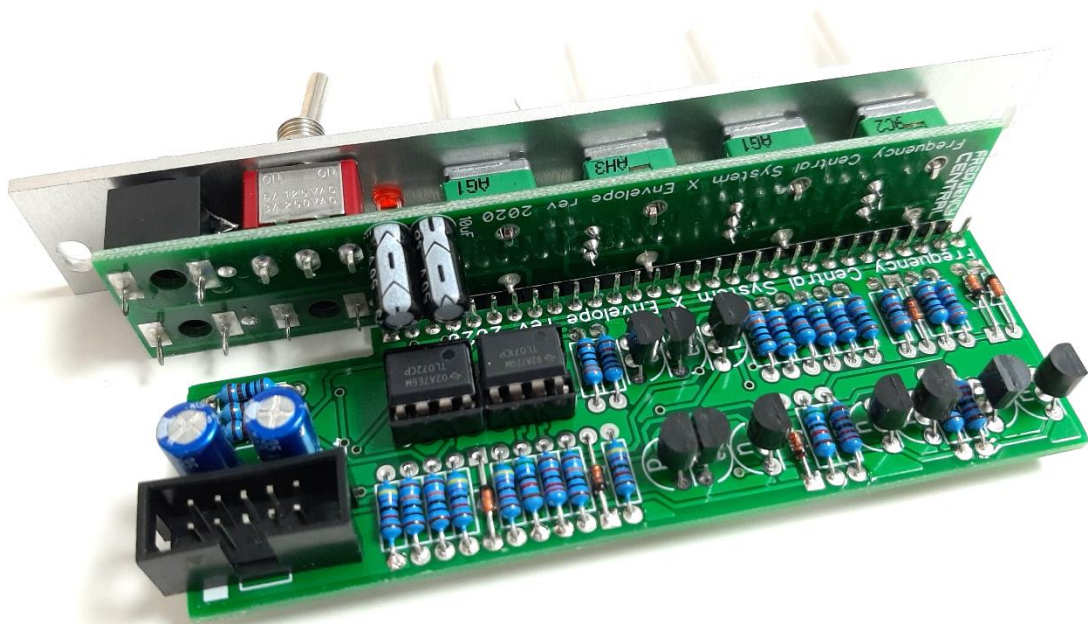
- n:** This signifies NPN BC547 transistors. Note the correct pinout as shown by the half circles.
- p:** This signifies PNP BC557 transistors. Note the correct pinout as shown by the half circles.

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

Bill of Materials

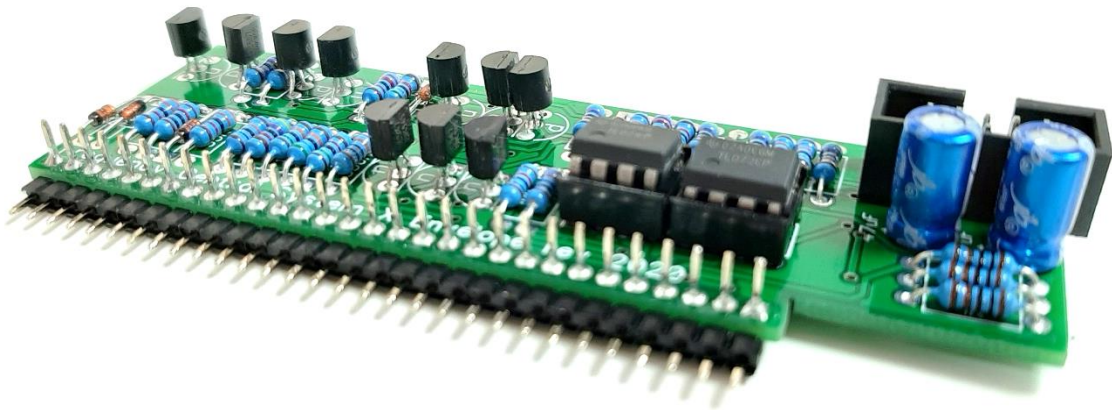
You will notice that all of the components listed below are also hyperlinks to where I buy each specific part from. You can also use the hyperlinks to find out more about what each component looks like. If you want to know even more, [Google](#) is your friend.

330R x 2	1uF x 1	TL071 x 1	A500K x 1
1K x 3	10uF x 1	TL072 x 1	A1M x 2
10K x 3	47uF x 2		B100K x 1
15K x 1		BC547 x 7	
22K x 3			SPDT toggle x 1
33K x 2		BC557 x 3	
47K x 5			3.5mm socket x 3
56K x 2		3mm red LED x 1	
100K x 4			90° male header x 1
150K x 1		1N4148 x 6	cut to size
560K x 1		8 pin IC socket x 2	Power header x 1
All resistors ¼ watt metal film.			Knobs x 4



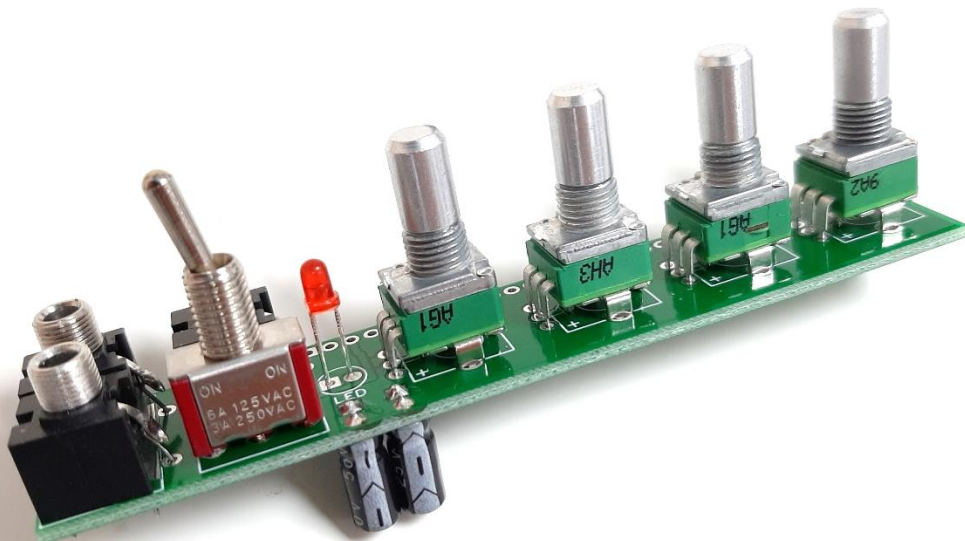
Main PCB assembly

1. Solder the diodes and all resistors. Watch the polarity of the diodes.
2. Solder the IC sockets
3. Solder the BC557– watch the polarity!
4. 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.
5. Solder both electrolytic capacitors
6. Cut 90° male header to size and solder into place. See photo below.



Control PCB assembly

1. Solder the 4 x pots, switch and 3 x sockets. Use the panel to ensure these line up nicely. You can use cut off resistor legs to make the ground connections of the sockets.
2. Solder the electrolytic capacitors.
3. Solder the LED. Use the panel to ensure that this line up nicely



Control PCB assembly

1. Slot the header from the assembled Main PCB into the Control PCB. Ensure a nice tight fit and solder into place
2. Bolt the pots, switches and the sockets to the panel using their nuts and washers.

Calibration

1. There is nothing to calibrate on this module – cool!
2. There is no #2

Troubleshooting

Not all DIY builds work first time. The vast majority of build issues are down to soldering inconsistencies. This is far more likely than a bad IC, for example. The first step of successful troubleshooting should always be to reflow all soldering to eliminate any dry joints (bad connections) or solder bridges (short circuits). This is also an opportunity to closely inspect your work – you might find some unsoldered pads, or an IC not inserted into its socket, for example. Next steps are to double check all resistor values are correct, and to check polarities of all diodes, transistors, ICs and electrolytic capacitors. This is not an exhaustive troubleshooting guide, but should address 95% of build issues.

RDH 23/12/20

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