FREQUENCY CENTRAL

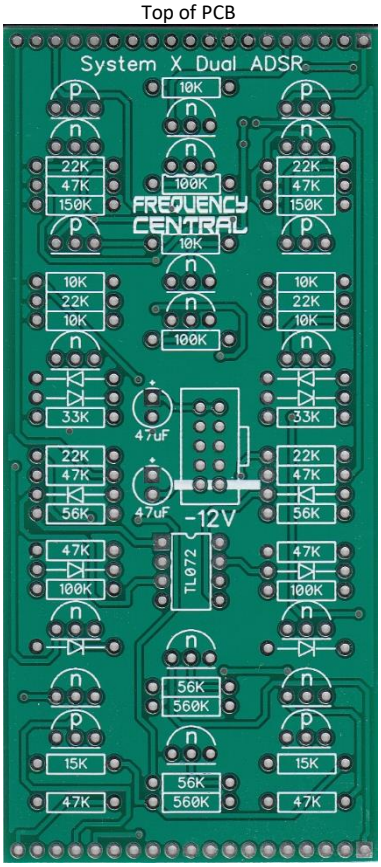
Build documentation for:

SYSTEM X DUAL ADSR

Because two is better than one! Now even easier to build!

Main PCB

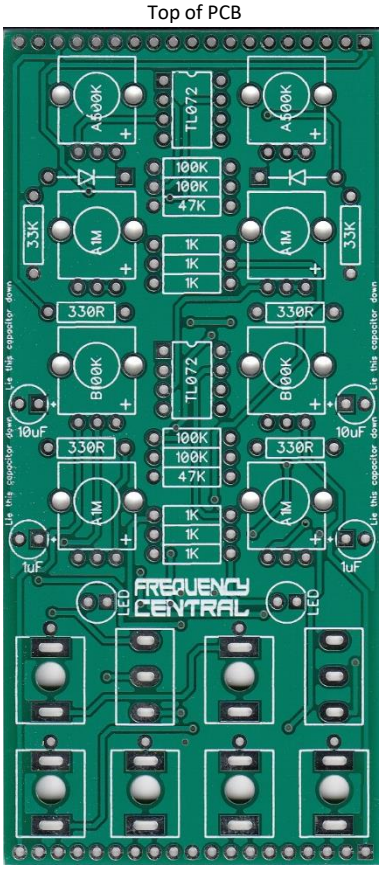
Top of PCB



Bottom of PCB

Control PCB

Top of PCB



Bottom of PCB

Key to PCB screen print:

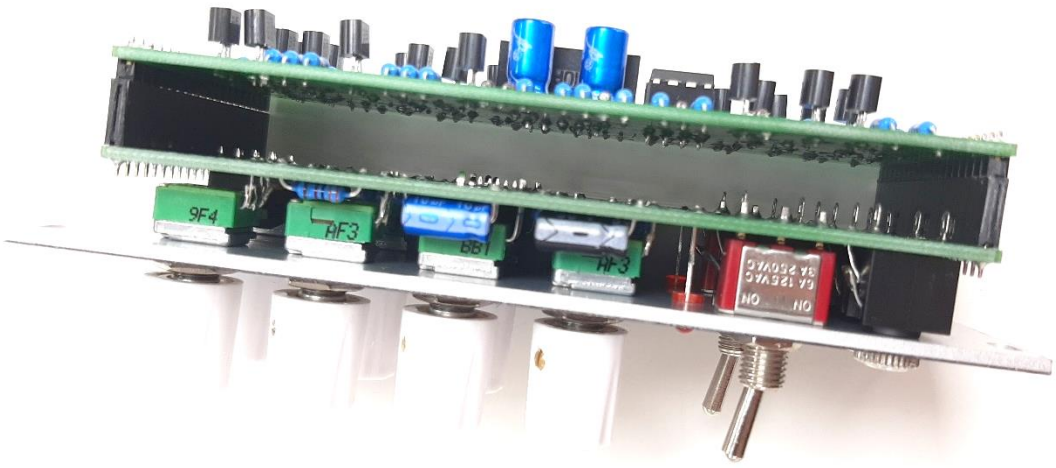
n: This signifies NPN BC547 transistors. Note the correct pinout as shown by the half circles.
p: This signifies PNP BC557 transistors. Note the correct pinout as shown by the half circles.
LED: The shorter leg goes through the square pad.

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

Bill of Materials

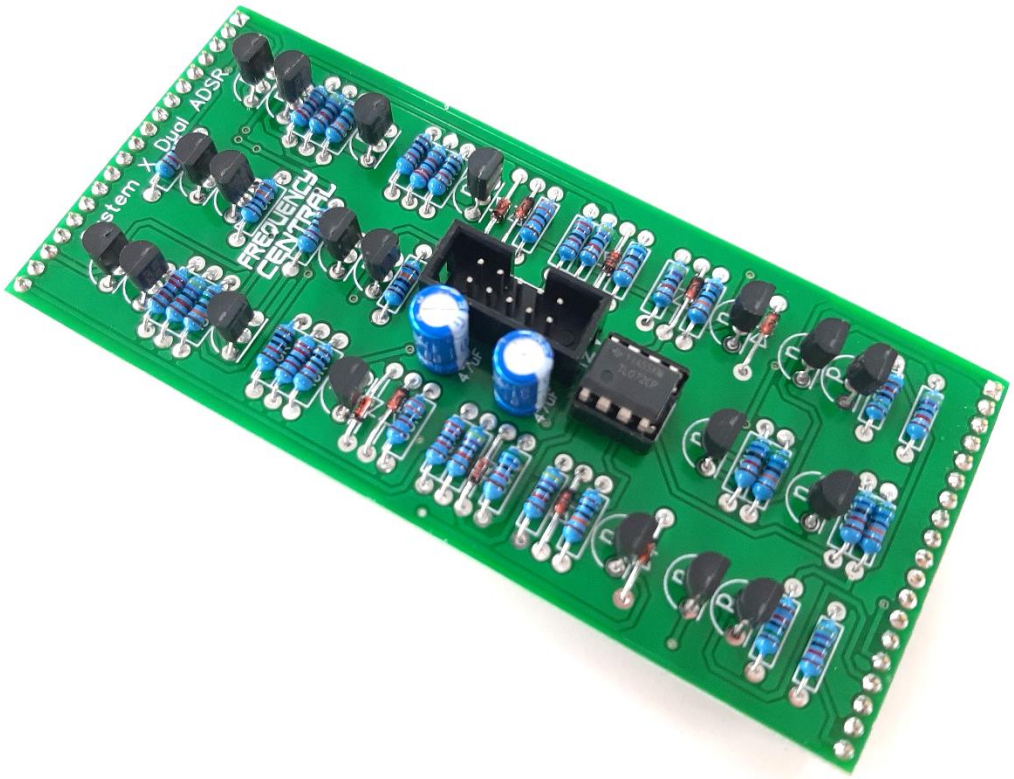
You will notice that all of the components listed below are also hyperlinks to where we buy each specific part from. You can also use the hyperlinks to find out more about what each component looks like. If you want to know even more, Google is your friend.

330R x 4 1K x 6 10K x 6 15K x 2 22K x 6 33K x 4 47K x 10 56K x 4 100K x 8 150K x 2 560K x 2 All resistors ¼ watt metal film.	1uF x 2 10uF x 2 47uF x 4	TL072 x 3 BC547 x 14 BC557 x 6 3mm red LED x 2 1N4148 x 12 8 pin IC socket x 3	A500K x 2 A1M x 4 B100K x 2 SPDT toggle x 2 3.5mm socket x 6 Male header (cut to size) Female header (cut to size) Power header x 1 Knobs x 8

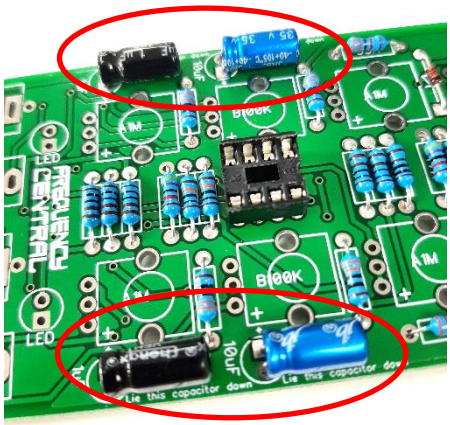


Main PCB assembly

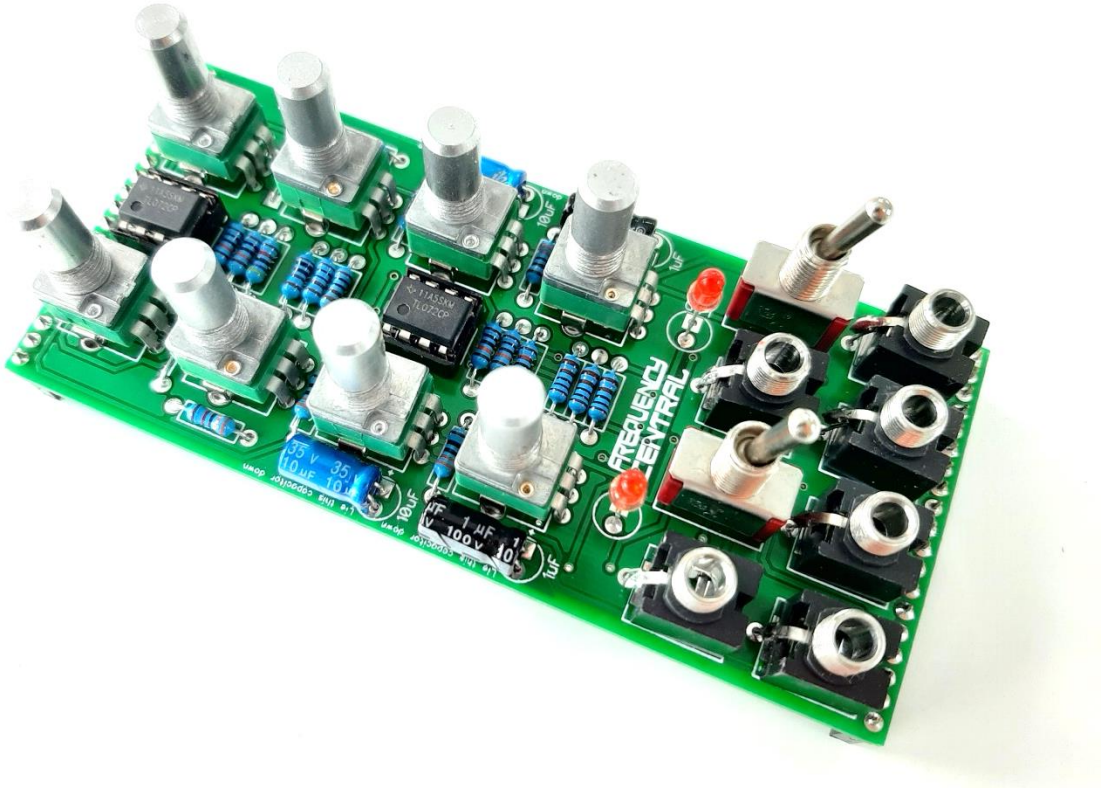
1. Solder the diodes and all resistors. Watch the polarity of the diodes.
2. Solder the IC socket and insert the IC.
3. Solder the BC547 and BC557 – watch the polarity!
4. Solder the box power header. Make sure the notch lines up with the screenprint legend. If in doubt, have a look at a power cable, and make sure when inserted into the header the red stripe lines up with the -12V screenprint.
5. Solder both electrolytic capacitors
6. Cut the male header to size and solder into place. Make sure that they stick out of the bottom of the PCB..



Control PCB assembly



1. Solder the diodes and all resistors. Watch the polarity of the diodes.
2. Solder the IC sockets and insert the ICs.
3. Solder the 4 electrolytic capacitors – you'll need to bend the legs over, as these components need to be laid down on their sides (see photos). Take special care to ensure the polarities are correct.
4. Solder the 8 x pots. Use the panel to ensure these line up nicely.
5. Solder the 2 x switches and 6 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.
6. Solder the LEDs (short leg = square pad)
7. Cut female headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.



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.