

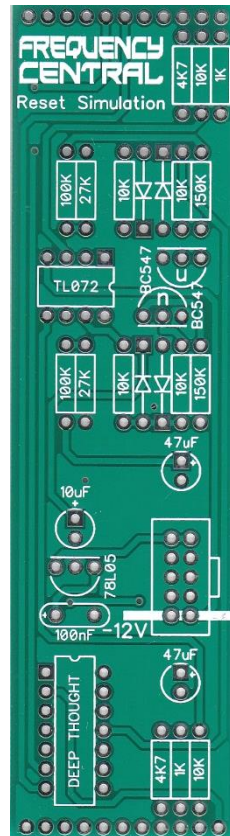
FREQUENCY CENTRAL

Build documentation for:

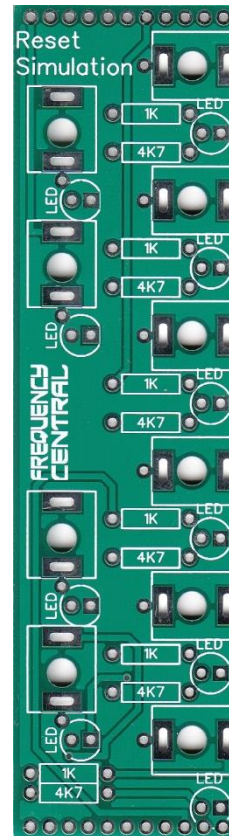
RESET SIMULATION

Boolean logic module featuring code by Jetroid

Main PCB



Control PCB



Reset Simulation is a Boolean logic module with two inputs, A and B, and 8 simultaneous outputs, NOT A, NOT B, AND, NAND, OR, NOR, XOR and XNOR. Each of the 8 outputs go high when their respective truth tables are satisfied by the A and B inputs. Legend has it that if the user can make all LEDs light up at the same time, the current simulation that we are living in will be replaced with another, slightly different simulation. Another legend has it that this has already happened multiple times. A further legend refutes both previous legends as the ramblings of a madman.

Key to PCB screen print:

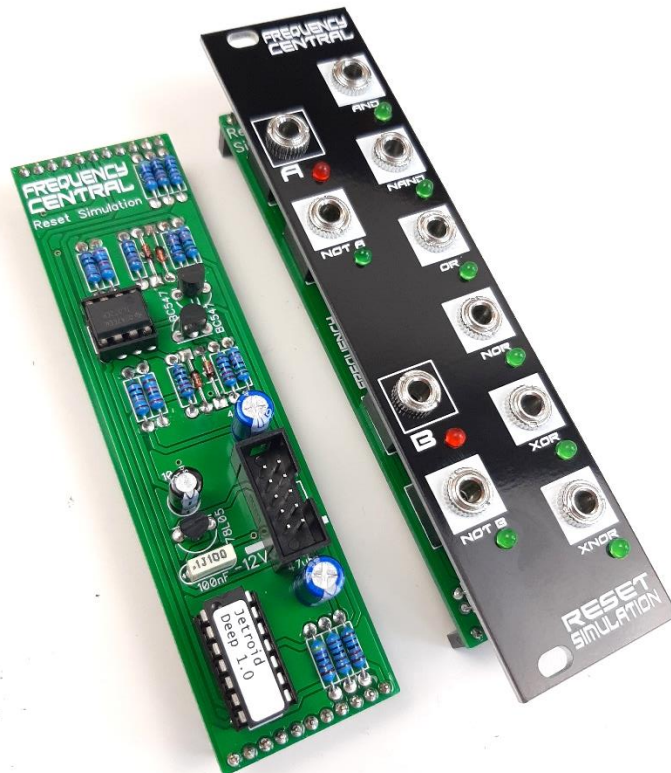
n: This signifies NPN BC547 transistors. Note the correct pinout as shown by the half circles.

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

Bill of Materials

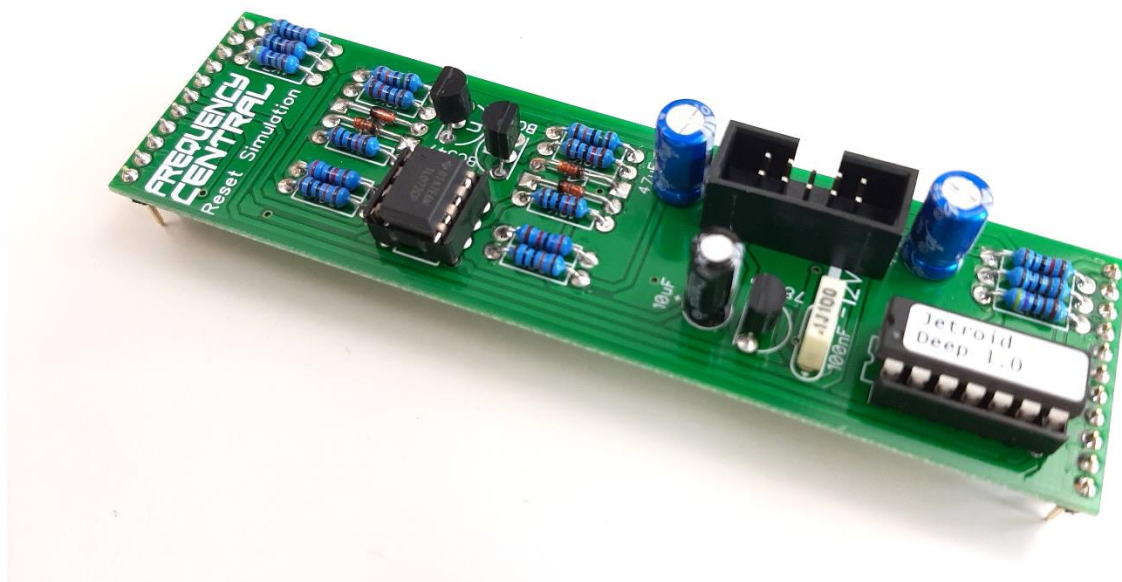
You will notice that all of the components listed below are also hyperlinks to where I buy each specific part from. You can also use the hyperlinks to find out more about what each component looks like. If you want to know even more, [Google](#) is your friend.

<p>1K x 8 4K7 x 8 10K x 6 27K x 2 100K x 2 150K x 2</p> <p>All resistors ¼ watt metal film.</p>	<p>100nF x 1 10uF x 1 47uF x 2</p>	<p>DEEP THOUGHT PIC x 1</p> <p>TL072 x 1</p> <p>BC547 x 2</p> <p>1N4148 x 2</p> <p>78L05 x 1</p> <p>3mm red LED x 2</p> <p>3mm green LED x 8</p> <p>8 pin IC socket x 1</p> <p>14 pin IC socket x 1</p>	<p>3.5mm socket x 10</p> <p>Male header x 1 (cut to size)</p> <p>Female header x 1 (cut to size)</p> <p>Power header x 1</p>
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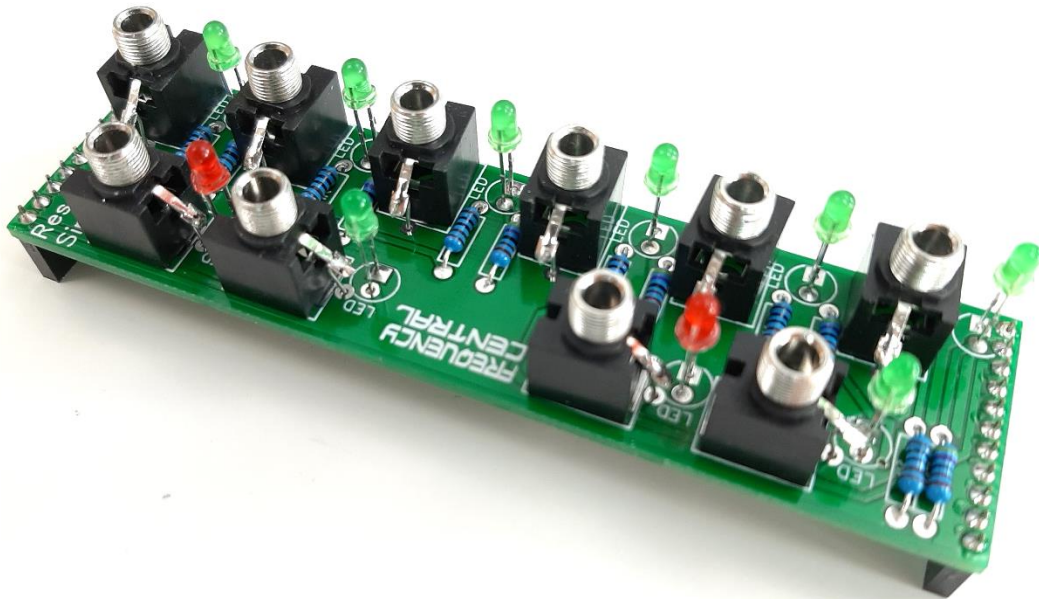
Main PCB assembly

1. Solder the diodes and all resistors
2. Solder the IC sockets
3. Solder the non electrolytic capacitor
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
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 the 10 x sockets. Use the panel to ensure these line up nicely. You can use cut off resistor legs to make the ground connections.
2. Cut female headers to size and solder them into place. Make sure that they stick out of the bottom of the PCB.
3. Solder the 10 x LEDs. Use the panel to ensure that these line up nicely



Bolt the sockets to the panel using their nuts. Looks nice huh?

Calibration

1. There is nothing to calibrate on this module – cool!
2. It now would be logical to power up the module and patch.

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 15/10/20

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