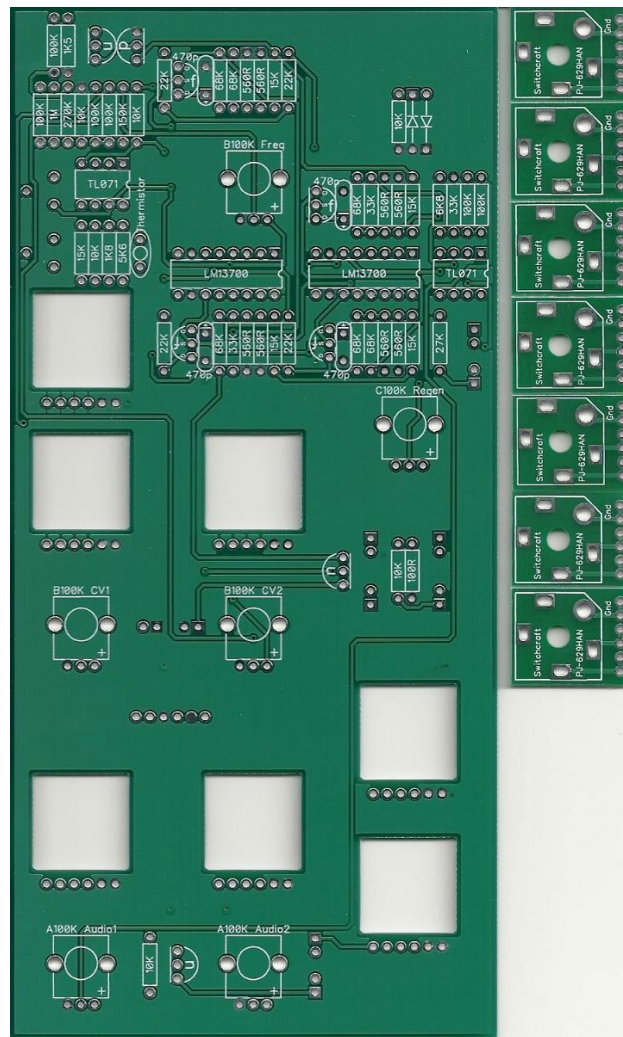


FREQUENCY CENTRAL

Build documentation for:

MU SYSTEM X LOWPASS FILTER

Based on the Roland System 100m VCF with additional 12dB/oct output. **MU System X Lowpass Filter** features: Main PCB, Sockets PCB x 7



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. 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

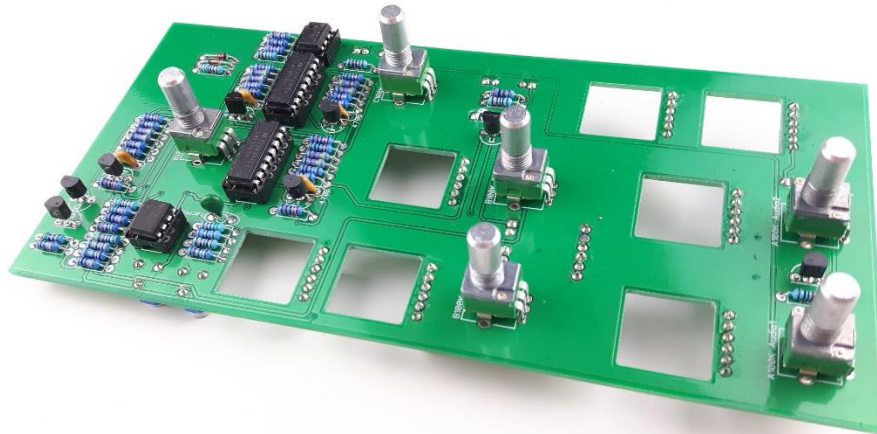
<p>100R x 1 560R x 8 1K5 x 1 1K8 x 1 5K6 x 1 6K8 x 1 10K x 6 15K x 5 22K x 4 27K x 1 33K x 3 68K x 6 100K x 8 150K x 1 270K x 1 1M x 1</p> <p><u>All resistors ¼ watt metal film</u></p>	<p><u>470pF x 4</u> <u>22uF electrolytic x 8</u> <u>47uF electrolytic x 2</u></p> <p><u>10K thermistor x 1</u></p>	<p><u>TL071 x 2</u> <u>LM13700 x 2</u> <u>BC547 x 3</u> <u>BC557 x 1</u> <u>2N5485 x 4</u> <u>1N4148 x 2</u></p> <p><u>8 pin socket x 2</u> <u>16 pin socket x 2</u></p>	<p><u>A100K x 2</u> <u>B100K x 3</u> <u>C100K x 1*</u> <u>(or these)</u> <u>(or C50K)</u></p> <p><u>10K trimmer x 1</u> <u>100K trimmer x 1</u></p> <p><u>6.3mm socket x 7</u></p> <p><u>Male 40 pin header x 2</u> <u>6 pin female header x 7</u></p> <p>DOTCOM 6 pin header</p>
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* Circuit calls for C100K. C50K is cool too. If you can't get C50K, use B100K instead.



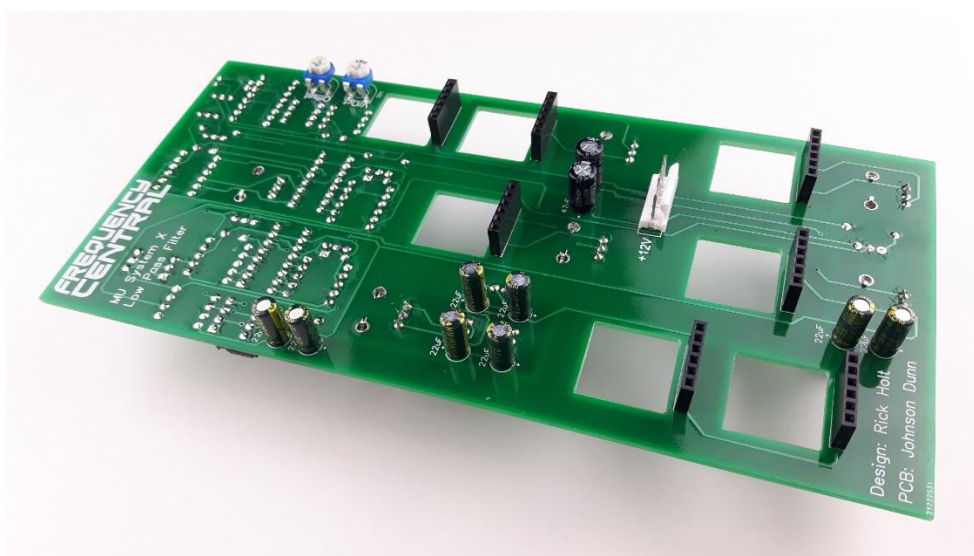
Main PCB assembly - FRONT

1. Solder all resistors.
2. Solder all IC sockets
3. Solder all non-electrolytic capacitors
4. Solder all transistors and the thermistor
5. Solder the 6 x Alpha pots. Make sure they fit snug to the PCB.



Main assembly – REAR

1. Solder all trimmers
2. Solder all of the 6 pin female headers. These will later accept the Socket PCBs
3. Solder the DOTCOM power header. Don't forget to make it 'keyed' by removing the second pin in (the PCB won't accept it otherwise – it's keyed too!)
4. Solder the electrolytic capacitors



Socket PCB

1. Solder the 7 sockets to the 7 Socket pcsb, socket sits on it's silkscreen footprint



Final Assembly

1. Present the pcb to the panel, and bolt the two together using the washers and nuts for the pots and switch
2. Cut 7 pieces of male header to be 6 pins wide. Place the long end of each into the 7 female headers.
3. Present each socket pcb assembly to the main pcb, bolt into place, making sure that the male headers line up with their places on the socket pcsb. Solder the male headers to the sockets pcsb.

Calibration

1. **V/Oct trimmer:** turn Resonance all the way to self oscillation. Patch a 1V/oct source into CV input 1, with the attenuator fully clockwise. Play octaves and adjust the V/Oct trimmer until they are spot on.
2. **Offset trimmer:** you want to tweak this so that the filter is fully open when the Cutoff pot is fully clockwise.

RDH 27/07/19

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

