

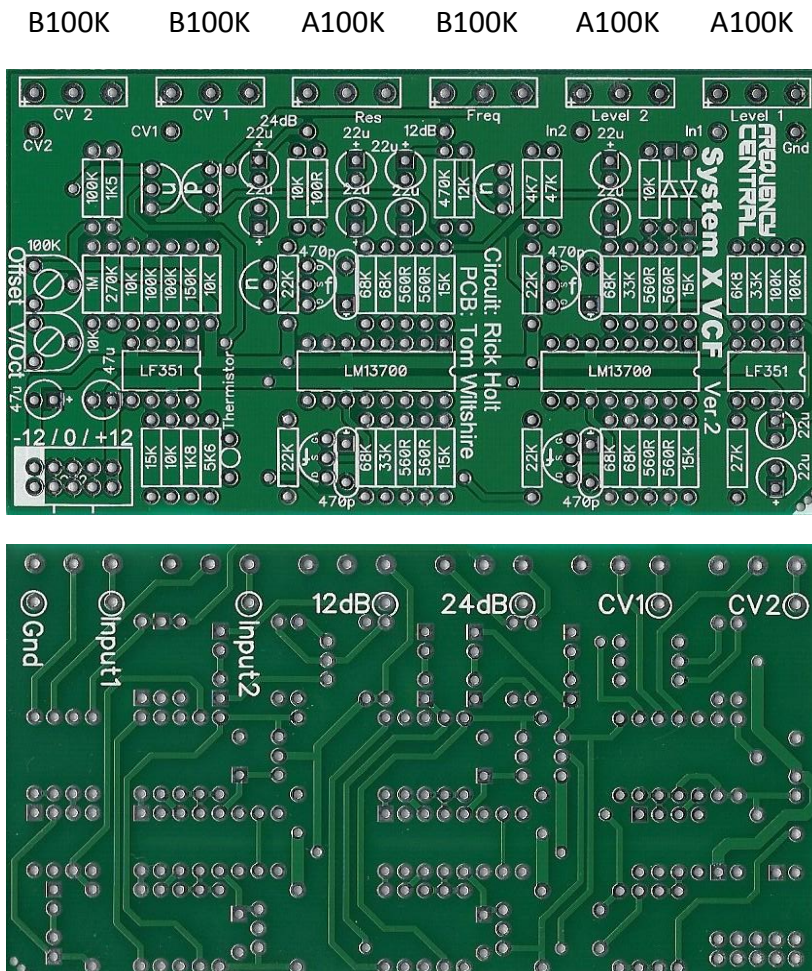
Build documentation for:

SYSTEM X FILTER

Based on the Roland System 100M VCF

FREQUENCY CENTRAL

Version 2 / April 2013



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. D, S, G is signified should you want to sub alternatives.
- Gnd:** Ground

Please observe the correct polarity of the 2 diodes and 12 electrolytic capacitors. The 10 x 22uF are configured in sets of 2 back to back (negative to negative).

The PCB shows the correct orientation for BC547/BC557/2N5485. Other transistor types can be used (eg 2N3904/2N3906/BF245), but please observe the correct pinout.

Thermistor (next to 5K6 resistor)

I use a 10K NTC available from Tayda, seems perfect:

<http://www.taydaelectronics.com/thermistors/10k-ohm-ntc-thermistor-5mm.html>

...but, you can just use a 10K resistor if 100% temperature stability isn't so important to you.

I can assure you, it's pretty accurate anyway without the thermistor.

Trimmers

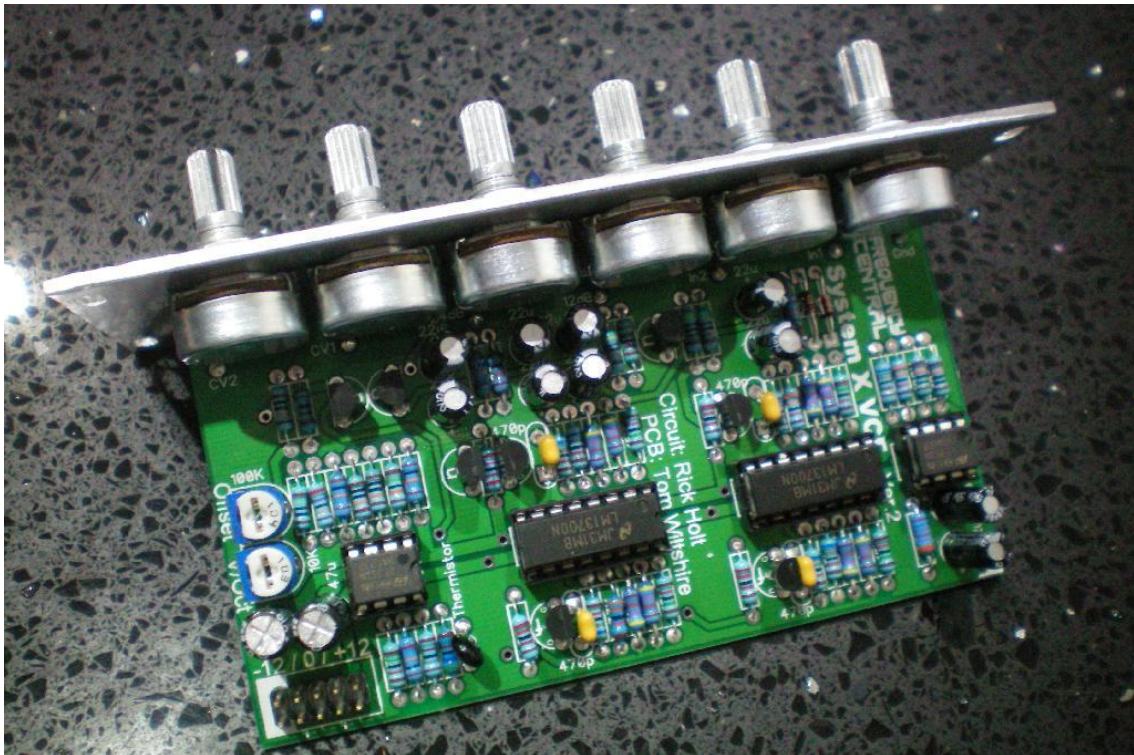
Offset - Trims the frequency up/down, should be just about fine in the mid position, but adjust to taste.

V/oct – This filter can be set up to track V/oct fairly accurately over around 5 octaves.

1. Send 1V/oct keyboard into CV input 1 and turn it's attenuator fully clockwise.
2. Play octaves, while adjusting the trimmer until you're close.
3. Play 2 octaves apart, adjust trimmer a little more...

Bill of materials

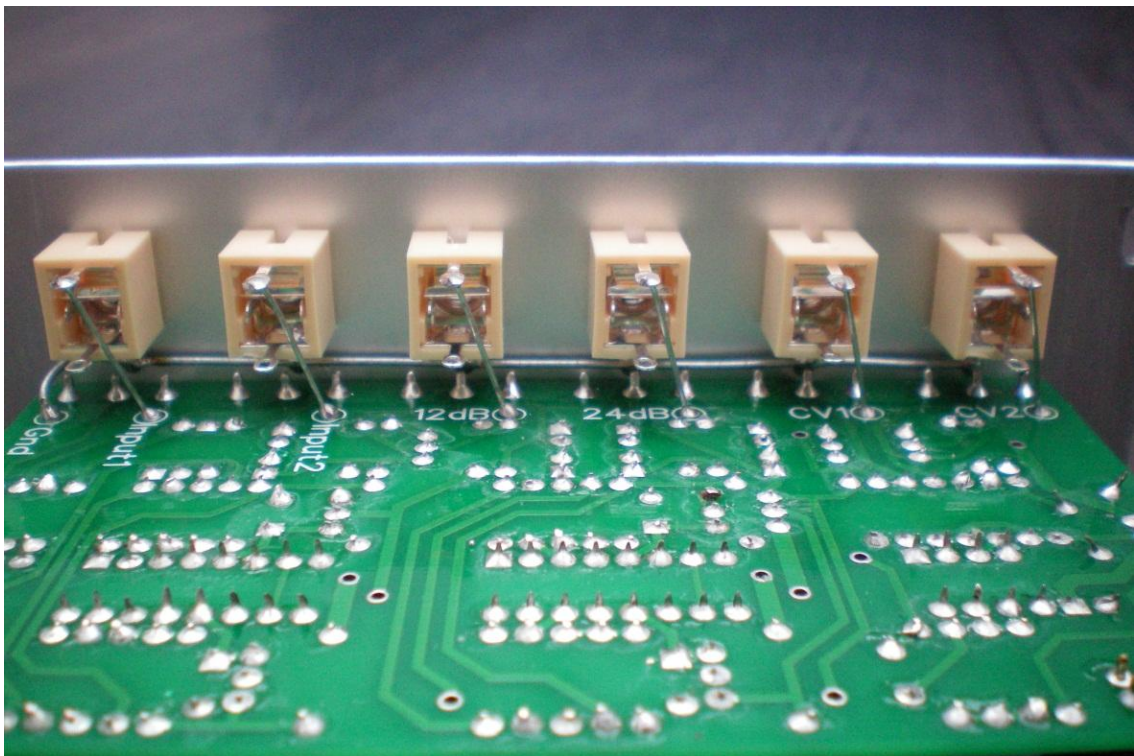
100R x 1	470pF x 4	LF351 x 2	A100K x 3
560R x 8	22uF x 10	LM13700 x 2	B100K x 3
1K5 x 1	47uF x 2	BC547 x 3	
1K8 x 1		BC557 x 1	All pots are 16mm
4K7 x 1	10K Thermistor	2N5485 x 4	Alpha.
5K6 x 1		1N4148 x 2	
6K8 x 1			10K trimmer x 1
10K x 5			100K trimmer x 1
12K x 1			
15K x 5			All trimmers are
22K x 4			6mm (Tayda)
27K x 1			
33K x 3			
47K x 1			
68K x 6			
100K x 5			
150K x 1			
270K x 1			
470K x 1			
1M x 1			



Underside of the PCB showing:

- Ground bus between sockets and PCB
- Connections between inputs/outputs and PCB

I use solid core for all of the above.



RDH 17th May 2013

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