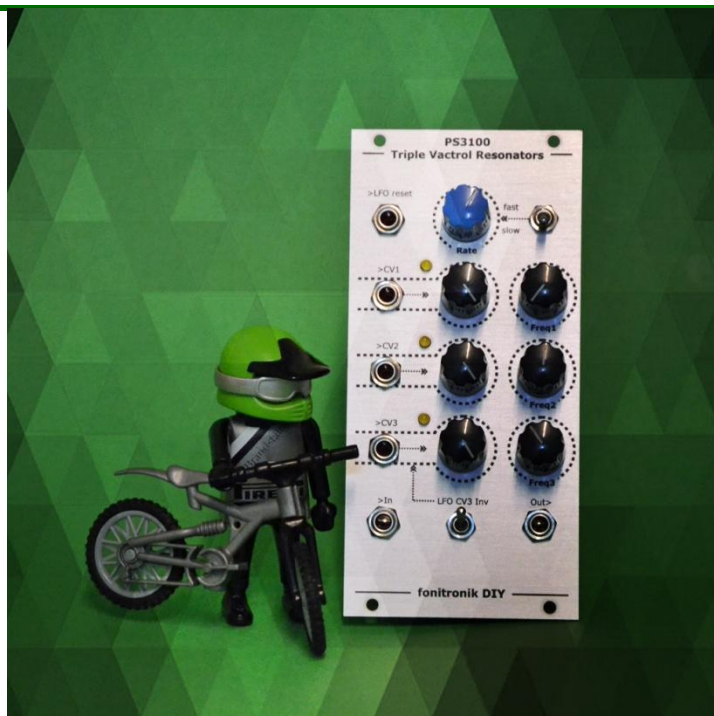


Triple Vactrol Resonators XS (Eurorack DIY)



Introduction

Here we go again. This is the latest iteration of my version of the PS3100 Resonators.

But what is it actually? Basically the module incorporates three voltage controlled band pass filters with fixed bandwidth (resonators), using the Dual-Vactrol-based core from the PS3100, and a simple triangle core LFO. By setting the BPFs to different center frequencies and modulating them, we get these nice resonating sounds. Depending on the source waveform and the modulation it might even resemble the human voice. The original purpose, however, was to make string patches sounding more vivid.

Features of the XS version (12HP)

Three Band Pass Filters each with

- CV input + attenuator potentiometer
- initial frequency potentiometer
- LED

One summed audio output

One common audio input

One LFO with

- reset (sync) input
- range switch (slow, fast)
- rate potentiometer
- output

The LFO is normalled to the 3 CV inputs, however, for the 3rd CV input the LFO signal can be inverted.

Specifications

The frontpanel measures: 12HP (Eurorack)

Mounting depth behind frontpanel incl. power plug: 40mm

Power consumption: TBA

BTW this is not meant as a beginners project. I do not provide step-by-step building instructions. I just assume that you already built quite a few projects and know how to read the BOM and schematics.

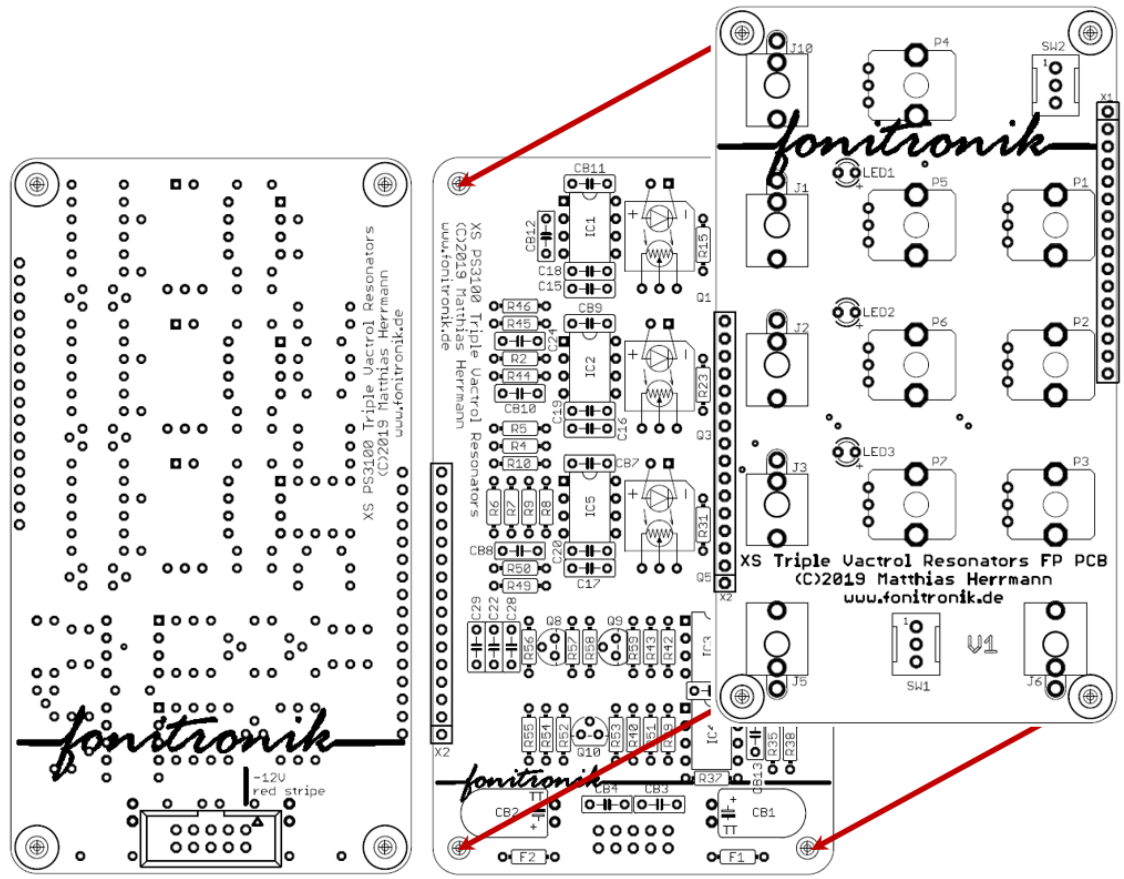
Layout/Design – 12HP Edition

General mounting instructions

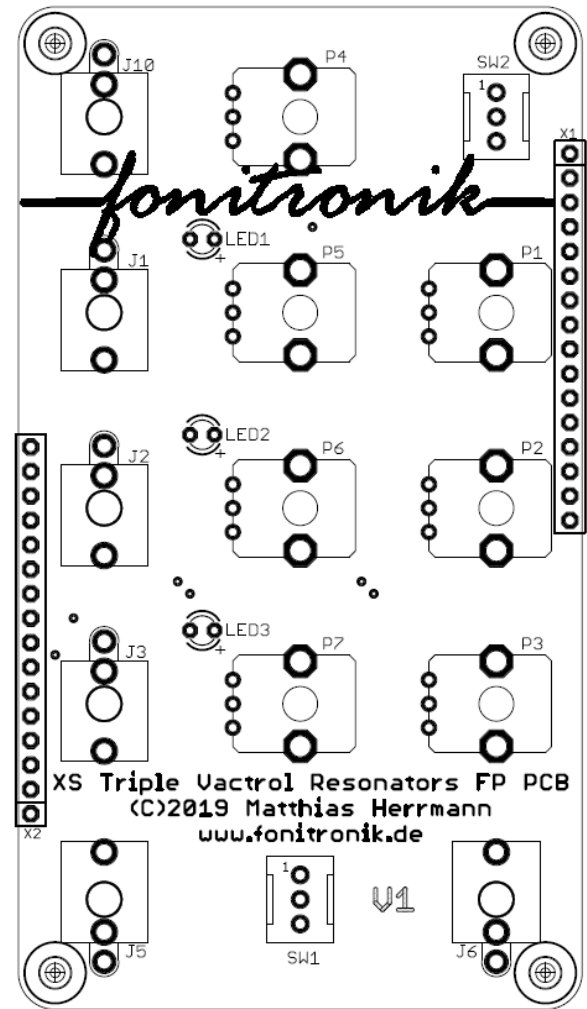
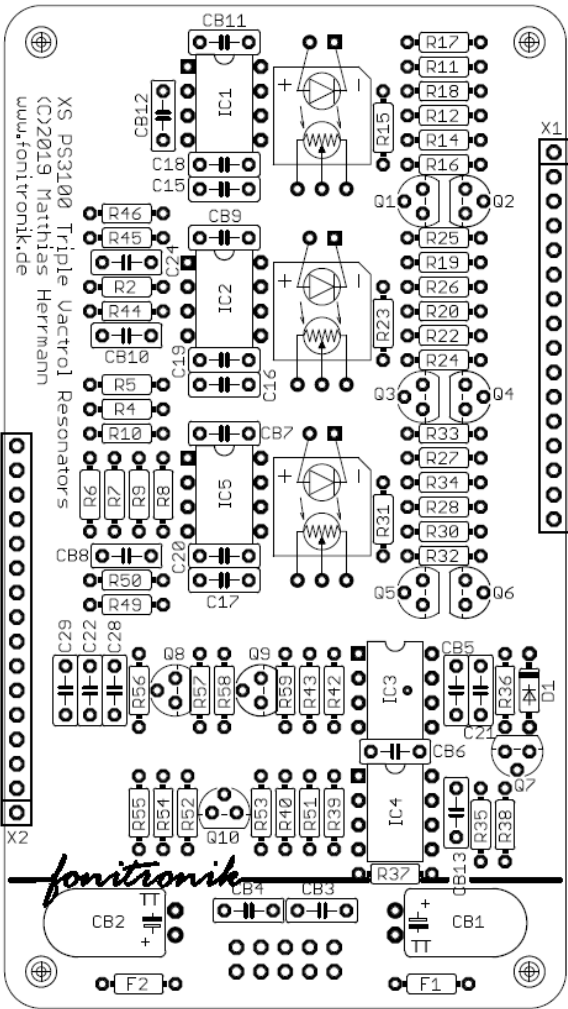
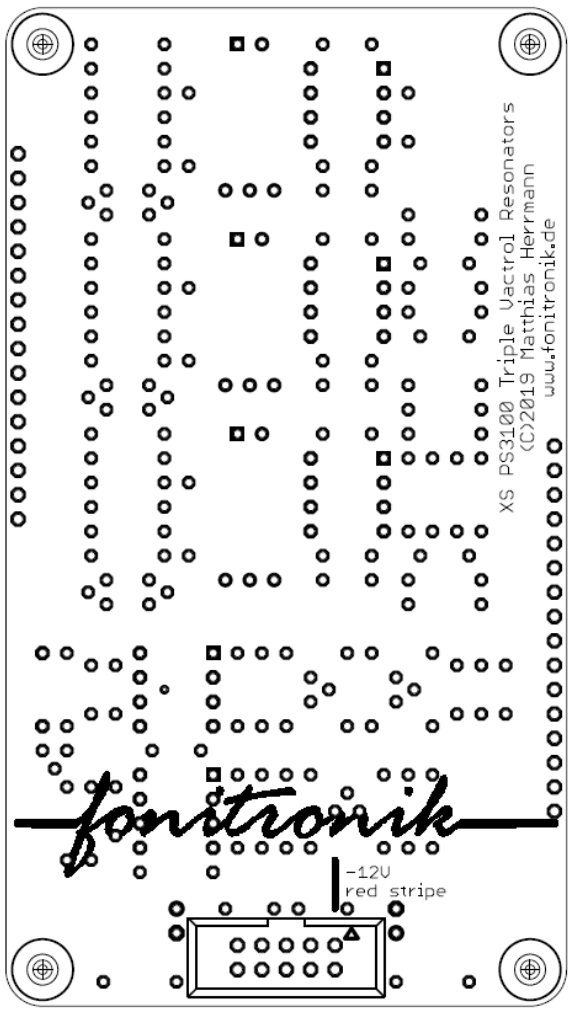
This project uses two PCBs, one board with the actual circuitry and an additional adapter PCB carrying the front panel components. The adapter PCB is used to mount the PCBs to the front panel.

The PCBs are connected using two 1x16 headers/receptables with 2,54mm pitch (.1in). For stability use four threaded distance sleeves (M3).

Look out for something like this:



Overlays – 12HP Edition

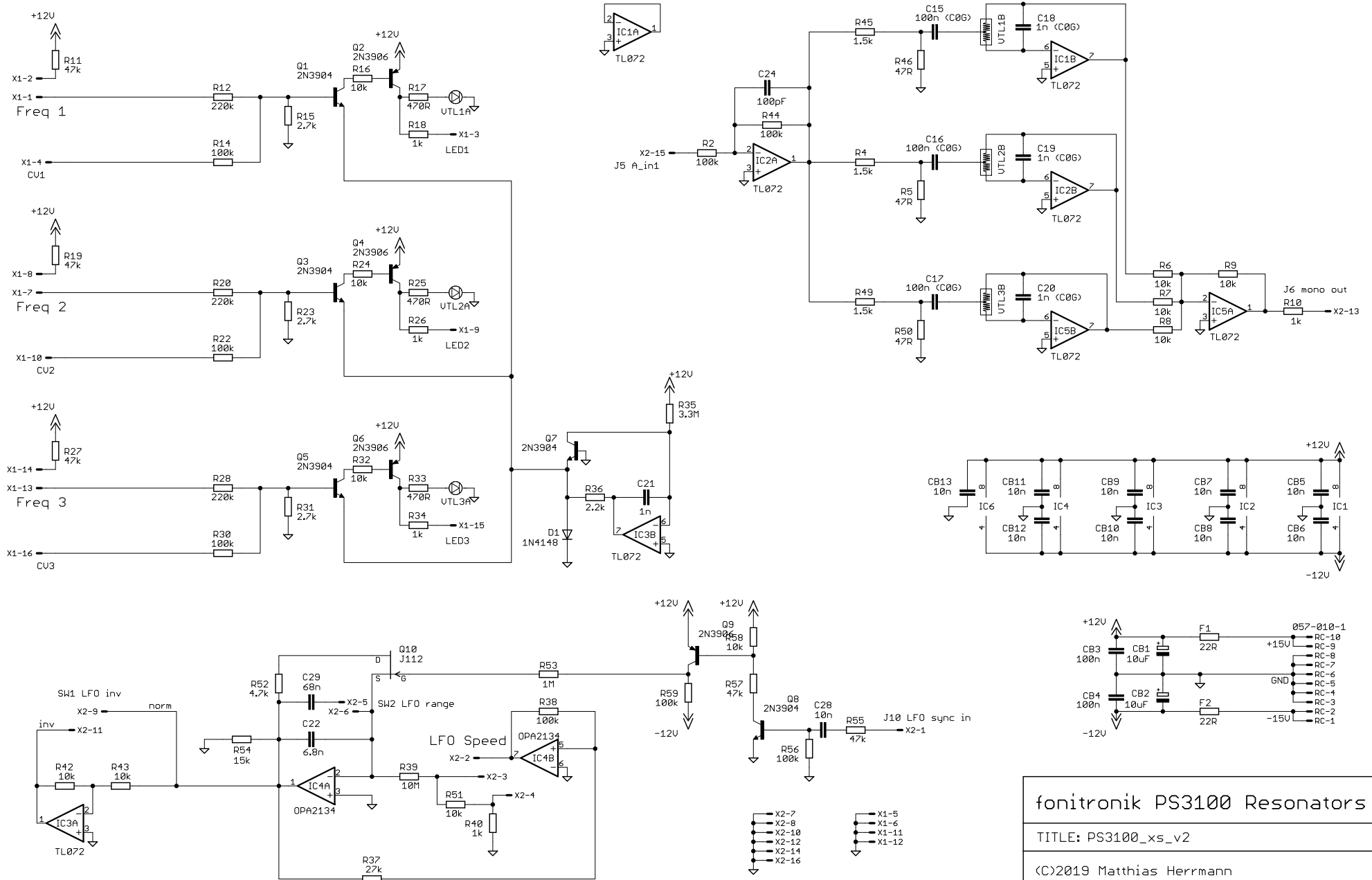


BOM – 12HP Edition

Qty	Value	Parts	Description
MAIN PCB			
Resistors			
2	10R	F1, F2	or ferrite beads
3	47R	R5, R46, R50	
3	470R	R17, R25, R33	
5	1k	R10, R18, R26, R34, R40	
3	1.5k	R4, R45, R49	
1	2.2k	R36	
3	2.7k	R15, R23, R31	
1	4.7k	R52	
11	10k	R6, R7, R8, R9, R16, R24, R32, R42, R43, R51, R58	
1	15k	R54	
1	27k	R37	
5	47k	R11, R19, R27, R55, R57	
8	100k	R2, R14, R22, R30, R38, R44, R56, R59	
3	220k	R12, R20, R28	
1	1M	R53	
1	3.3M	R35	
1	10M	R39	
Capacitors			
1	100pF	C24	
1	1n	C21	
3	1n (COG)	C18, C19, C20	or mylar
1	6.8n	C22	
1	68n	C29	
1	10n (film)	C28	
9	10n	CB5, CB6, CB7, CB8, CB9, CB10, CB11, CB12, CB13	
2	100n	CB3, CB4	
3	100n (film)	C15, C16, C17	or mylar
2	10uF, 35V	CB1, CB2	

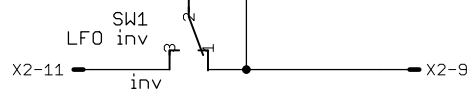
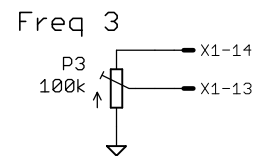
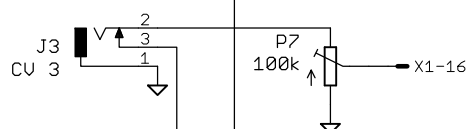
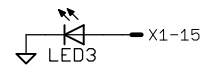
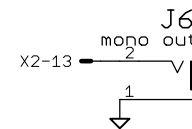
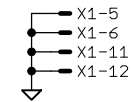
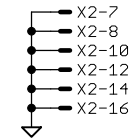
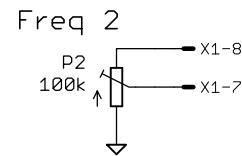
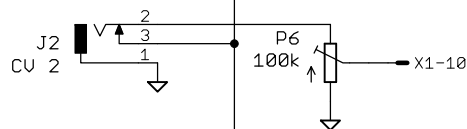
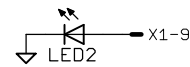
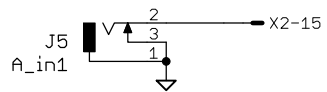
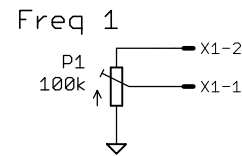
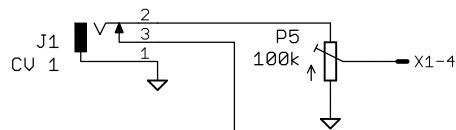
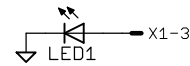
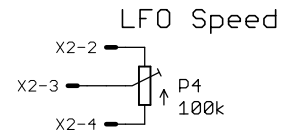
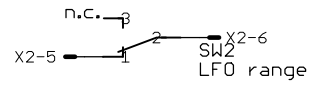
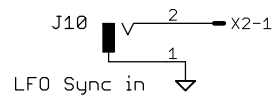
Qty	Value	Parts	Description
MAIN PCB			
Semi's			
1	1N4148	D1	
5	2N3904	Q1, Q3, Q5, Q7, Q8	
4	2N3906	Q2, Q4, Q6, Q9	
1	J112	Q10	or J111
4	TL072	IC1, IC2, IC3, IC5	or compatible
1	OPA2134	IC4	
3	VTL5C3/2	VTL1, VTL2, VTL3	Dual Vactrol
Connectors			
1	Header 2x5	RC	Euro Powerheader
2	Header 2x10	X1, X2	female
ADAPTER PCB			
2	Header 1x16	X1, X2	male
6	PJ398SM sockets	J1, J2, J3, J5, J6, J10	Thonkiconn
7	100k (lin)	Alpha 9mm pot (vertical)	
3	LED	2mA low current (YMMV)	See table below
2	SPDT Switch	on-on (PCB terminals)	Sub-Mini
LEDs & Resistors			
Parts	LEDs	Value	
R18, R26, R34	2mA low current (5 mcd)	1k	
	20mA super bright (7800 mcd)	15k	
	20mA ultra bright (14000 mcd)	47k	

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TITLE: PS3100_xs-FP_TH Interface PCB

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