

THANK YOU FOR PURCHASING ERICA DTECH VCF KIT!

We were impressed about the sound of our Polivoks VCF clone, and we decided to turn it into the most versatile VCF around, including Resonance CV, filter curve and resonance slope adjustment and unique CV assign function. Dtech VCF uses original Russian ICs K140UD12 in the sound circuit and it ranges from deep, bassy sounds to something even more extreme than famous Polivoks. Schematics designed by my friend, genius engineer and musician Edward Dtech, PCB by Girts, Erica Synths. All technical solutions are subject of copyright and can be replicated only with permission from Erica Synths.

TECHNICAL CHARACTERISTICS:

Filter Mode: LP/BP

Input Level: 10V ptp

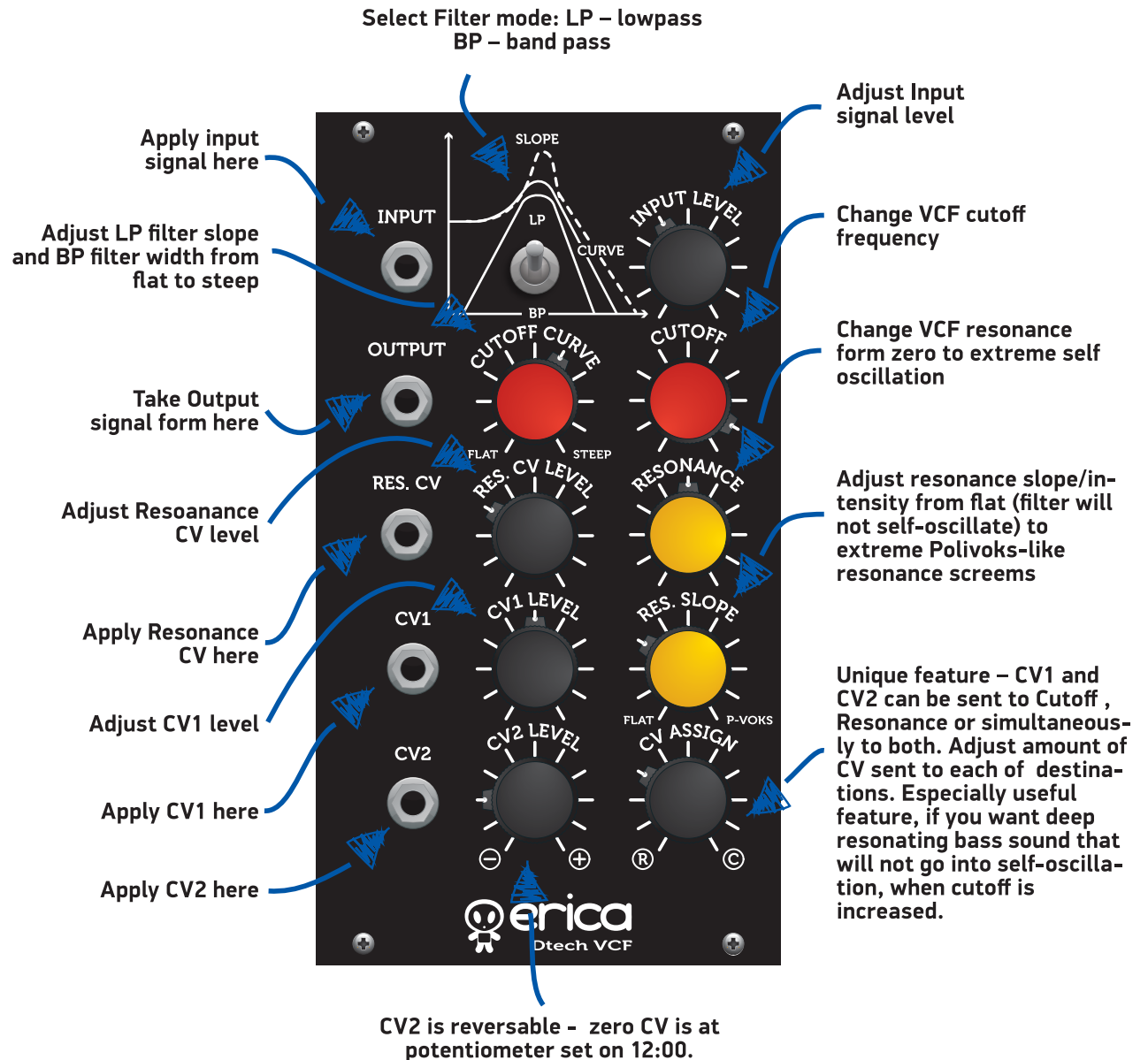
CV Level: 10V ptp

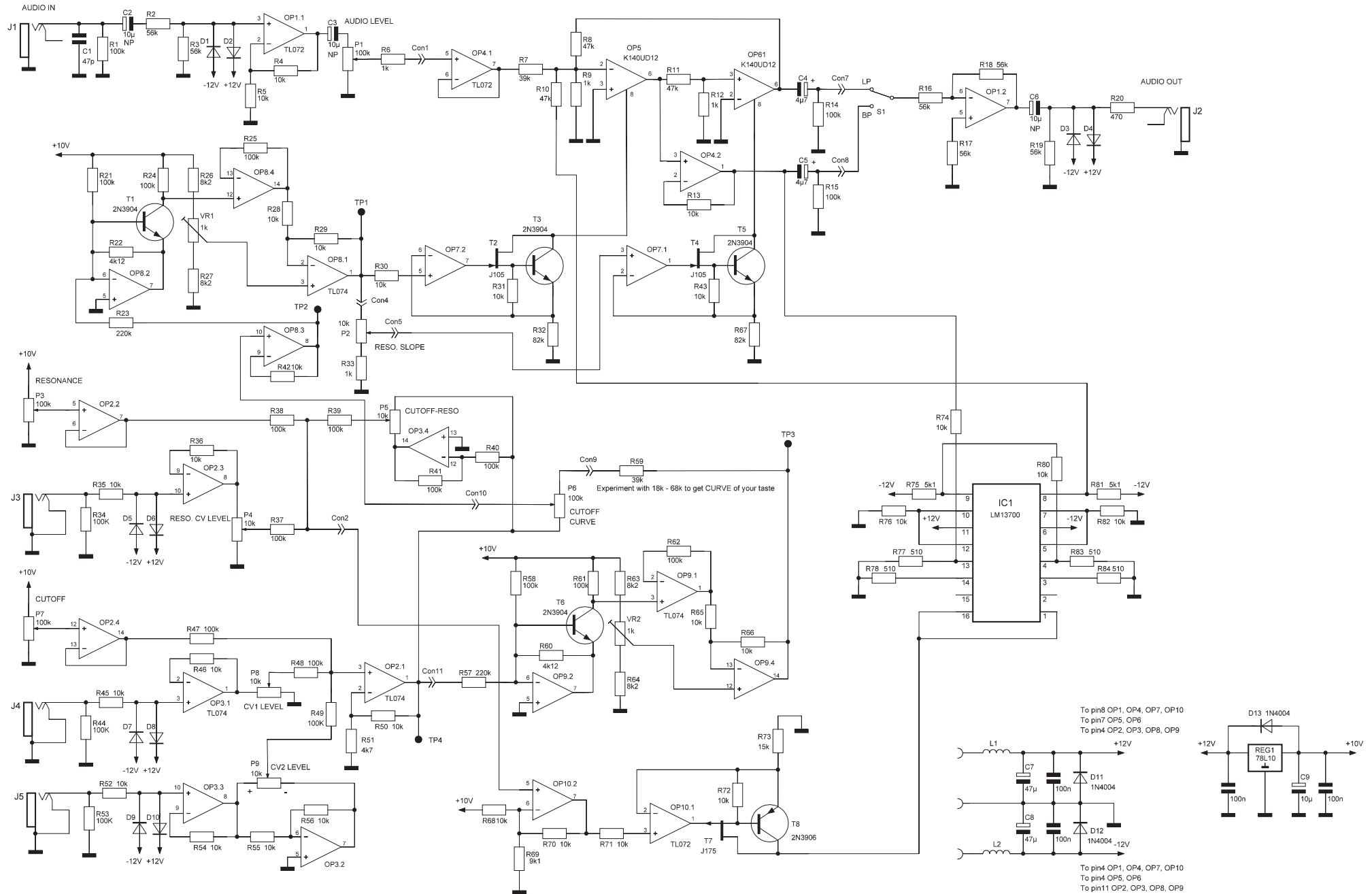
Tuning: 1V/oct

Power consumption: 62mA@+12V, 56mA@-12V

LPF: approx 12dB/oct @max slope setting, approx 6dB/oct @ min slope setting

BPF: 6dB/oct; slope varies bandwidth (BPF lower end frequency)





CAPACITORS

C1	47p	1	ceramic
C2, C3, C6	10μ (NP)	3	electrolyt >25V
C4, C5	4μ7	2	electrolyt >25V
C7, C8	47μ	2	electrolyt >25V
C9	10μ	1	electrolyt >25V
C10-C12	100n	3	ceramic
Cd	100n	19	creamic SMD 1206

SEMICONDUCTORS

D1-D10	1N4148	10	
D11-D13	1N4004	3	
IC1	LM13700	1	
OP1, OP4, OP7, OP10	TL072	4	
OP2, OP3, OP8, OP9	TL074	4	
OP5, OP6	K140UD12	2	comes with a kit
T1, T3, T5, T6	2N3904	4	npn
T2, T4	J105	2	N channel FET Farnell 1471024
T7	J175	1	P channel FET Farnell 2322634
T8	2N3906	1	pnP
REG1	78L10	1	Voltage regulator TO9

RESISTORS

R1, R14, R15, R21,R24,R25, R34, R37-R41, R44, R47-R49, R53, R58, R61, R62	100k	20
R2, R3, R16-R19	56k	6
R4, R5, R13, R28-R31, R35, R36, R42, R43, R45, R46, R50, R52, R54-R56, R65, R66, R68, R70-R72, R74, R76, R80, R82	10k	28

R6, R12, R33	1k	3
R7, R59	39k	2
R8, R10, R11	47k	3
R20	470	1
R22, R60	4k12	2
R23, R57	220k	2
R26, R27, R63, R64	8k2	4
R32, R67	82k	2
R51	4k7	1
R69	9k1	1
R73	15k	1
R75, R81	5k1	2
R77, R78, R83, R84	510	4

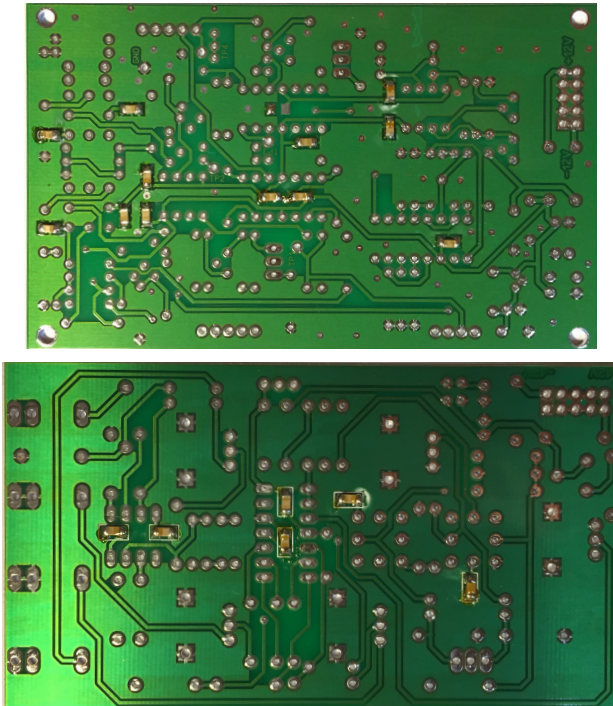
POTENTIOMETERS

P1	100k (LOG)	1	Alpha order from Tayda	A-1855
P2, P4, P5, P8, P9	10k (LIN)	5	Alpha order from Tayda	A-1847
P3, P6, P7	100k (LIN)	3	Alpha order from Tayda	A-1848
VR1, VR2	1k	2	multiturn, Farnell	9353178

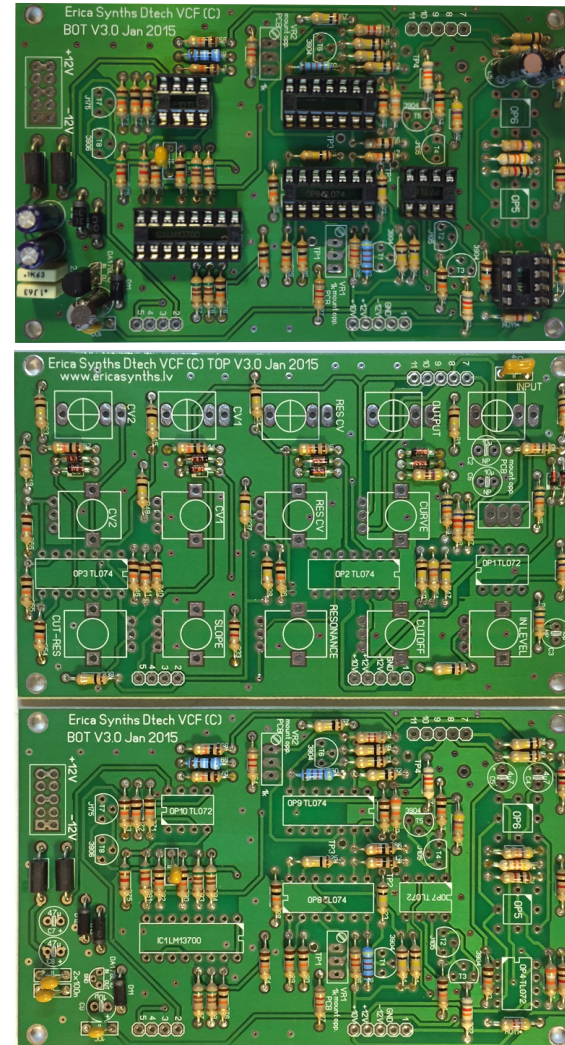
OTHER

J1-J5	Jack	5		Tnoniconn
L1, L2	Ferrite BEAD	2		may be replaced by 20ohm resistor
SW1	Toggle switch	1	Farnell	9473041
Con 1-8, Con 9-16	connectors	2		come with a kit
Power connector		1	eurorack standard	comes with a kit
Standoffs	20mm	4		come with a kit
Srews	M3x6mm	8		come with a kit

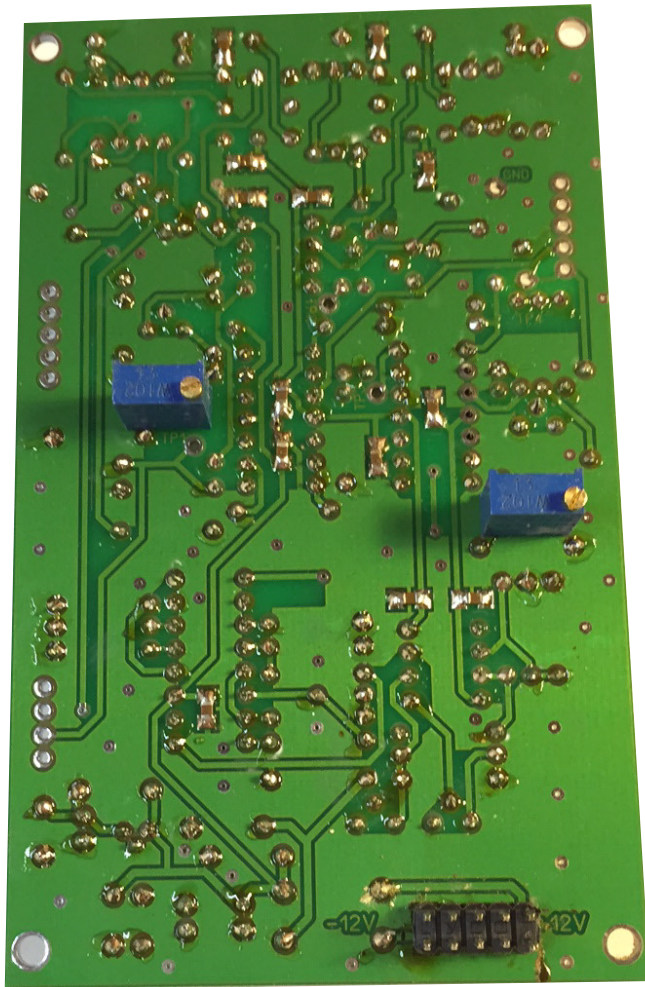
- 1 First solder 100n SMD decoupling capacitors.



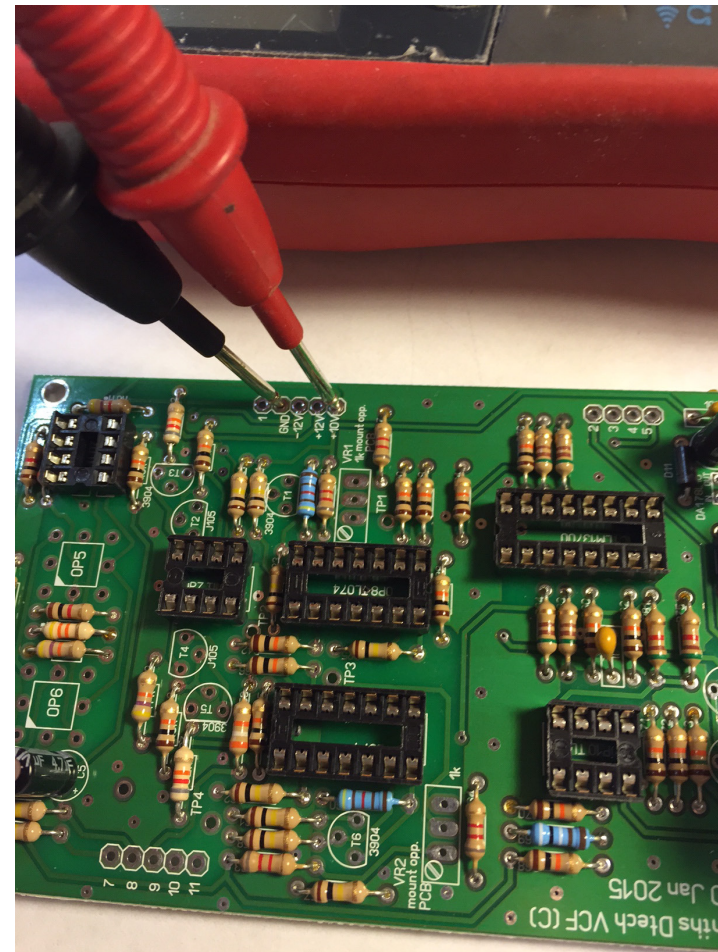
- 2 Solder all passive elements, diodes and then IC sockets.



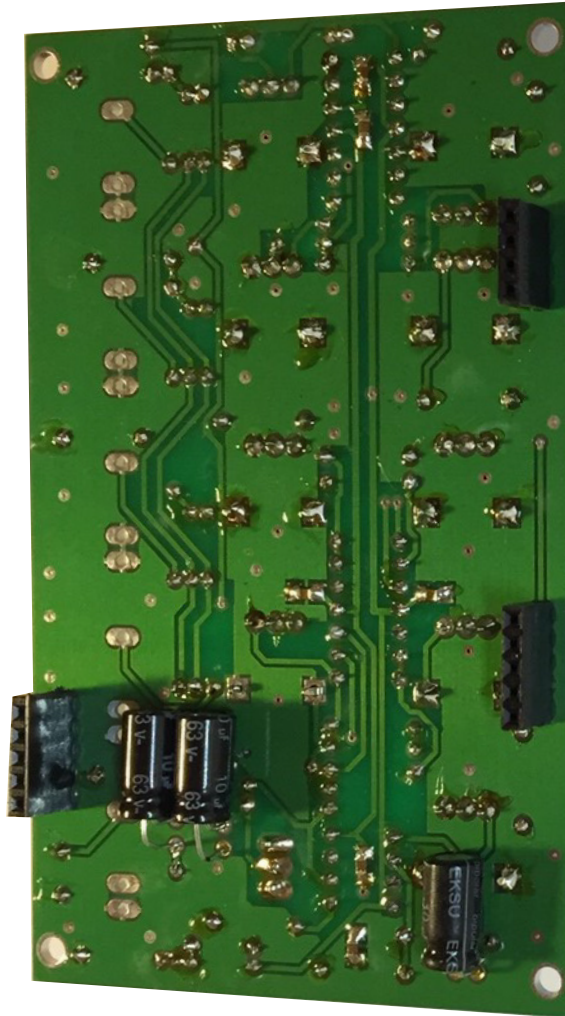
3 Turn the bottom PCB around and solder eurorack power connector and trim pots.



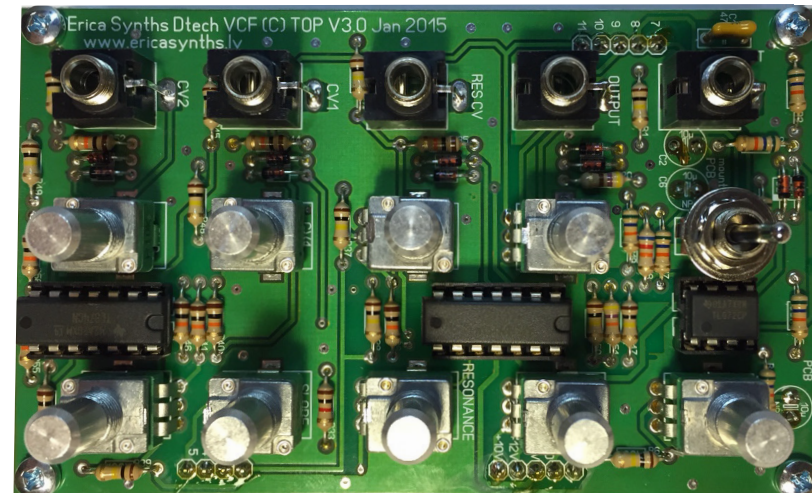
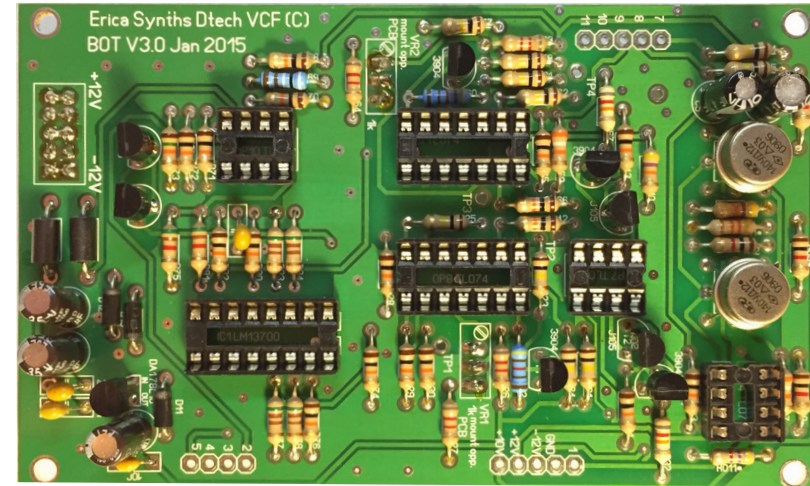
4 Now it's time for the initial test! Connect the power and measure, if you have +-12V and +10V on the connector! You will not get exactly 10V, but around that, depending on precision of the voltage regulator.



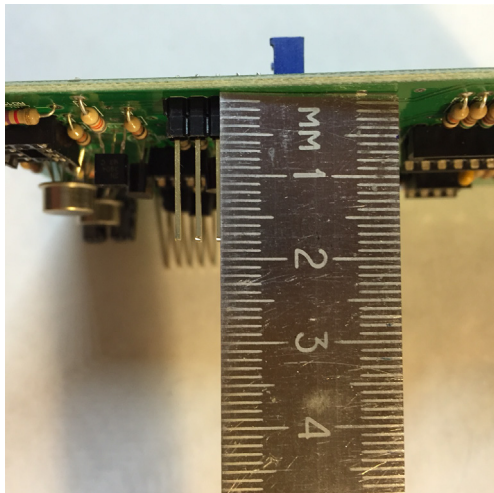
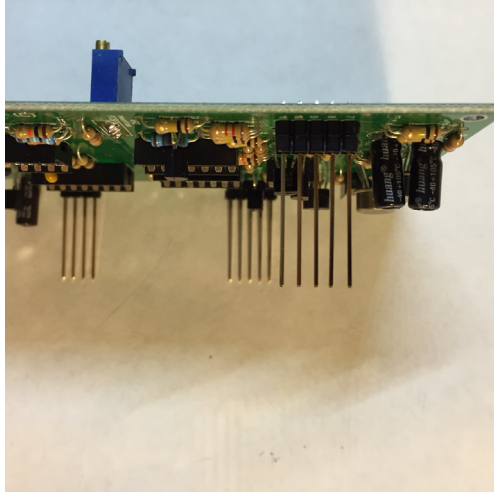
- 5 Turn the top PCB around and solder electrolytic capacitors. Bend capacitor legs and solder those horizontally. Solder connector sockets here, as well.



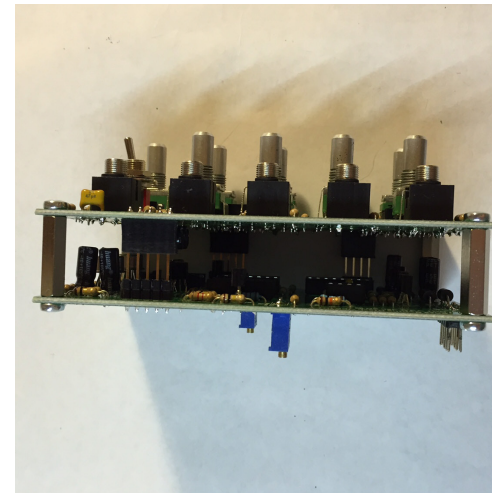
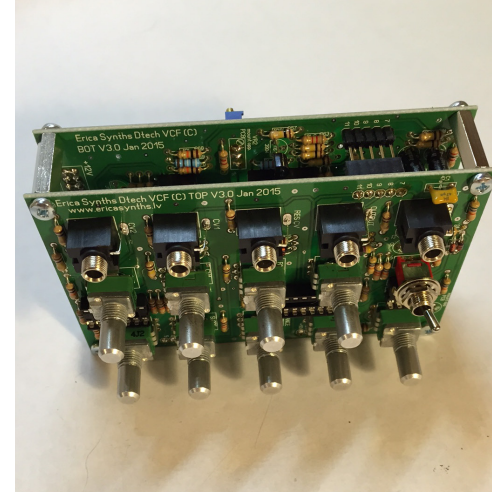
- 6 Solder all transistors and opamps on the bottom PCB and potentiometers, switch and jack sockets on the top PCB



7 Solder extended connector jacks on the bottom PCB! Use screwdriver to push down top spacer. Then cut connectors 18mm high.



8 Connect both PCBs and fix them with standoffs



CONGRATULATIONS! YOU HAVE COMPLETED HARDWARE PART!

Adjust front panel controls (typically all pots full CCW, CV address and CV2 on 12:00) so that you get 0.000V (or as close to 0, as possible) on TP4.

Adjust VR2 until you get +0,001V (or just above 0, main idea – get it slightly positive) on TP3.

Now adjust front panel controls (typically all pots full CCW, CV address and CV2 on 12:00) so that you get 0.000V (or as close to 0, as possible) on TP2.

Adjust VR1 until you get +0,001V (or just above 0, main idea – get it slightly positive) on TP1.

Calibration complete! Now you can install the front panel.

User manual by Girts Ozolins@Erica Synths .

Design by Edgars Rasins.

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In case of any questions, feel free to contact us through www.ericasynths.lv or via e-mail info@ericasynths.lv.

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