

If you are reading this, most probably, you are about to build the Erica Synths DIY Multimode VCF! It's a multimode filter with a CV control over cutoff and resonance and simultaneous LP, BP and HP outputs for serious modular patches. The core of the VCF is highly stable, custom multimode VCF chip AS3320 (produced in Riga, btw).

The Multimode VCF kit comes in three versions:

- 1) Set of 2 PCBs + AS3320 IC + mechanical parts (PCB connectors and spacer),
- 2) Set of 2 PCBs + + AS3320 IC + mechanical parts (PCB connectors and spacer) + panel,
- 3) Full kit.

FEATURES:

- Simultaneous LP, BP and HP outputs
- CV control over cutoff and resonance
- Cutoff CV attenuverter
- Volume drop compensation, as resonance is increased
- High temperature stability
- Skiff-friendly design

SPECIFICATIONS:

- | | |
|-----------------------------|----------------------|
| • Audio input amplitude | 10Vptp |
| • CV amplitude (full sweep) | -5V - +5V |
| • Panel width | 10HP |
| • Module depth | 35mm |
| • Power consumption | 36mA@+12V, 36mA@-12V |



- 1 The big knob makes a difference! This is the filter cutoff frequency control.
- 2 This is the cutoff CV input
- 3 This is the resonance CV input
- 4 Adjust the input signal level with this knob!
This knob adjusts resonance level. The module has volume drop compensation, so with increasing resonance, the audio volume will not reduce
- 5 This is the cutoff CV attenuverter
- 6 This is the resonance CV attenuator
- 7 Patch the audio signal here!
- 8 These are the VCF outputs

ASSEMBLY

Take precautions with regard to electrostatic discharge (ESD) safety. Handling components should be done in an electrostatically safe environment. Use personal and workplace grounding. Any discharge (even a minor one) from your body to a component may permanently damage it.

Our PCBs have silkscreened both component values and designators nevertheless we highly recommend you to print out the files with the component placement before you start assembly of the module. And, please, at least take a look at this manual!

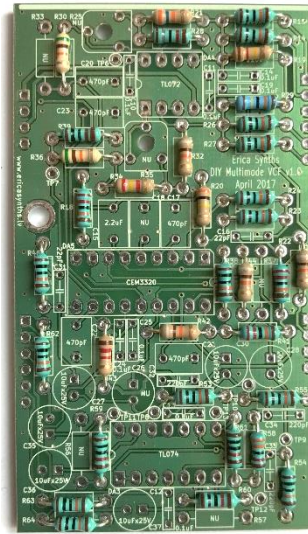
Some components are marked as NU (not used) – leave those unpopulated! Some components are marked as OPTION (those are for optional modifications) – leave those unpopulated for now.

- 1 Solder horizontally placed resistors and diodes on both PCBs (Controls board and Main board)! Pay attention on the orientation of the diodes! Solder the ferrite beads on the controls board!

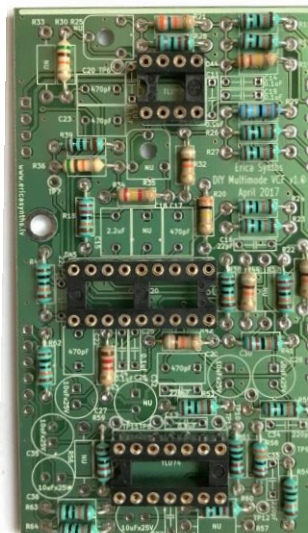
Controls board



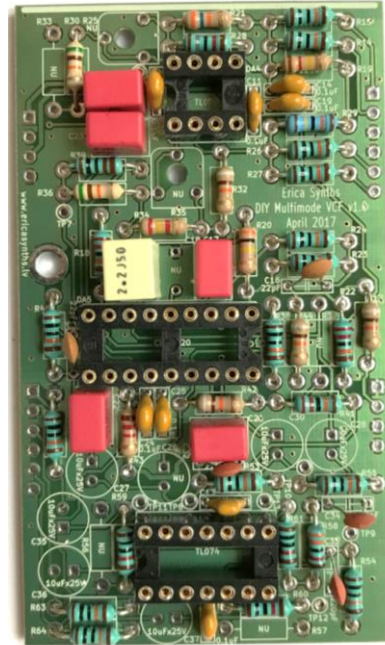
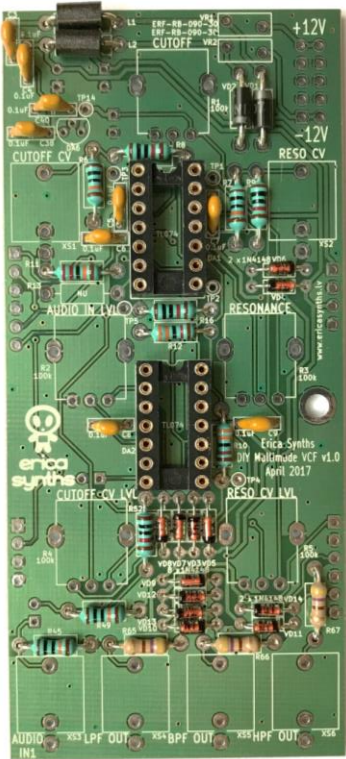
Main board



- 2 Solder the IC sockets on both boards! Also solder the resettable fuses (if you have rectangular resettable fuses, you should solder them later on the opposite side of the PCB – they are too high to fit on this side of the board).



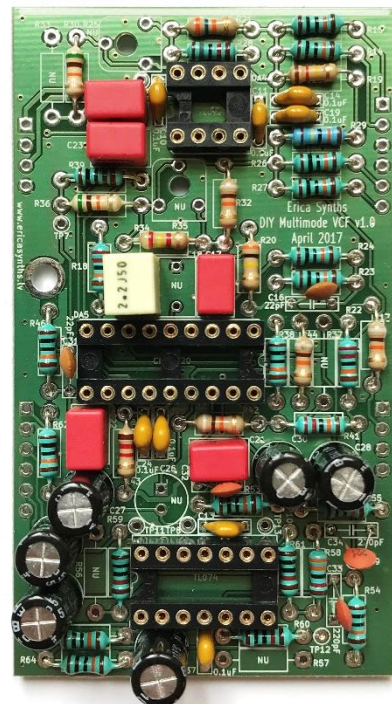
3 Solder the capacitors on both boards!



4 Solder, the voltage regulator, the potentiometers and jacks on the controls board!



5 Solder the electrolytic capacitors on the Main board! These are non-polarized capacitors, so polarity doesn't matter.



6

Turn the controls board around and solder the electrolytic capacitors, the PSU connector, the board connectors (female) and resettable fuses (round ones that come with a kit are ok to fit on the top side of the board).



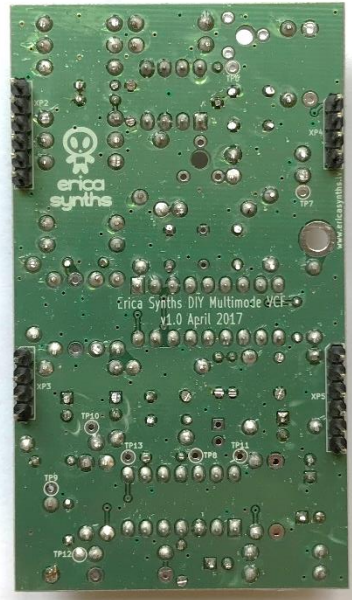
Negative lug of electrolytic capacitor is marked with a stripe!



Notice that two non-polarized capacitors should be soldered horizontally!

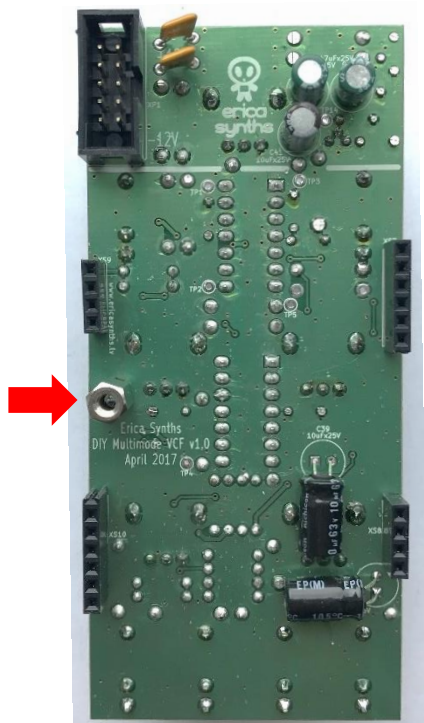
7

Solder board connectors (male) on the main board!



8

Use the M3x6 screw to attach the spacer to the Control PCB! Connect both PCBs together and secure the bottom one with the other M3x6 screw! For all our modules with 2 PCBs the white stripes on both PCBs have to match.



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Install the front panel and potentiometer knobs! **Congratulations! You have completed the Erica Synth's Multimode VCF module!** It does not need calibration and will work straight away.

