

If you are reading this, most probably, you are about to build Erica Synths DIY SWAMP module. The module is 35mm deep, skiff friendly, has solid mechanical construction and doesn't require wiring.

The SWAMP is random CV and audio generator inspired by famous Wiard Wobblebug module; it's often a heart of self-generating patches and brings controllable randomness in your modular system. Random sounds and CVs in the Wobblebug are generated by interaction between two linear CD4046-based VCOs (Tone and Woggle), where frequency of each VCO is controlled by sample and hold circuit that takes input CV from Woggle VCO output. In addition Tone and Woggle audio ringmodulated output – Ring - is available.

In SWAMP module we introduced numerous modifications and improvements to extend potentiometer range, added audio input, which, when connected, replaces internal Tone oscillator, replaced expensive dual vactrol, built S&H circuit around made in Riga S&H IC AS1100CK2, added audio waveform selection switches, CV output configuration jumpers and many more.

The SWAMP kit comes in three versions:

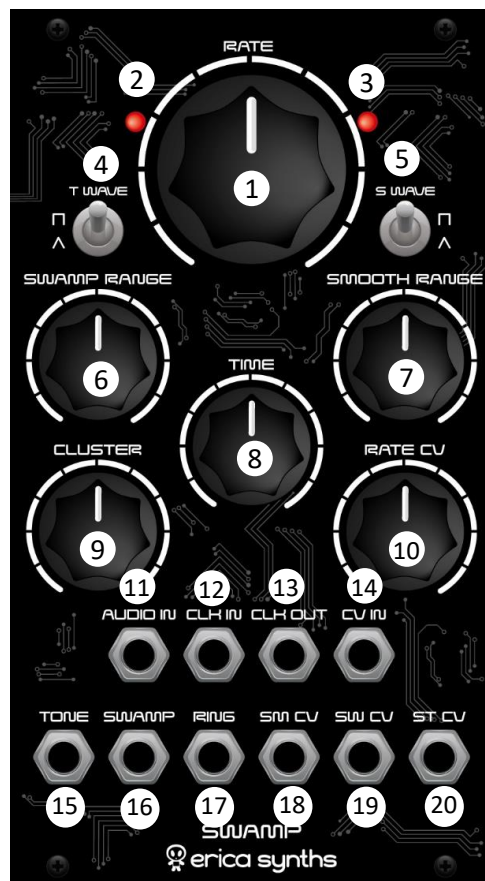
- 1) Set of 2 PCBs + S&H IC + mechanical parts (PCB connectors and spacer),
- 2) Set of 2 PCBs + S&H IC + mechanical parts (PCB connectors and spacer)+ panel,
- 3) Full kit.

FEATURES:

- Three random audio frequency outputs
- External audio input routed to ringmodulator
- Three random CV outputs
- Clock input and output to sync the module to your modular system
- CV control over internal clock for even more extreme randomness
- Skiff-friendly design

SPECIFICATIONS:

- | | |
|--------------------------|-------------------------------|
| • Audio output amplitude | 10Vptp |
| • CV output amplitude | 0-10V or -5V - +5V |
| • Panel width | 12HP |
| • Module depth | 35mm |
| • Power consumption | 60mA (max)@+12V,
39mA@-12V |



- 1 RATE knob sets internal clock rate or – the frequency of random changes of output CVs and audio
- 2 LED gives visual feedback on the internal clock rate
- 3 LED gives visual feedback on STEPPED CV output
- 4 5 WAVE switches select waveform on the TONE and SWAMP audio outputs. The middle position of the switch give you waveform that is crossfade between triangle and pulse
- 6 This knob defines the range of CV changes on SW CV output
- 7 This knob defines range of CV changes on SM CV output
- 8 This knob defines frequency of random changes on SW CV output
- 9 CLUSTER knob defines, how much of random change happen on SM CV and SW CV outputs
- 10 This is RATE CV attenuator – adjust, how much external CV will affect internal clock rate
- 11 This is external audio input. External audio signal replaces internal Tone oscillator and is ringmodulated with Swamp oscillator.
- 12 This is external clock input – you can sync SWAMP to the master clock of your modular system
- 13 This is clock output – you can sync other modules to SWAMP clock
- 14 This RATE CV input
- 15 16 These are TONE and SWAMP audio outputs
- 17 This is RING audio output – ringmodulated TONE (or external audio, if used) and SWAMP signal
- 18 This smooth fluctuating CV output
- 19 This SWAMP CV output
- 20 This is Stepped CV output – similar what you find in in S&H modules, but with adjustable parameters

ASSEMBLY

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

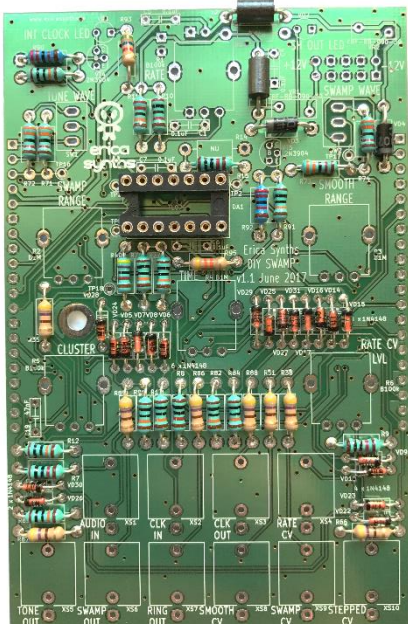
Our PCBs have silkscreened both component values and designators nevertheless we highly recommend you to print out files with component placement before you start assembly of the module. And, please, at least take a look on this manual!

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.

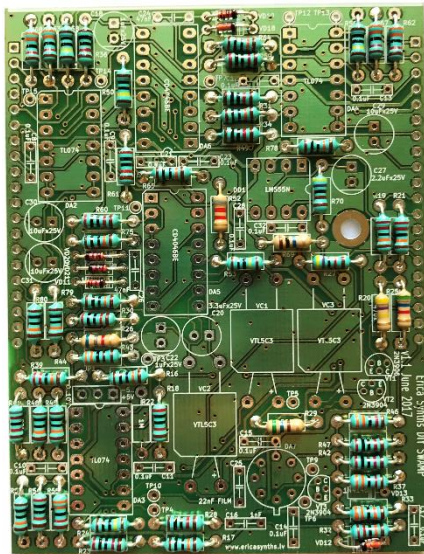
1

Solder resistors and diodes on both PCBs (Controls board and Main board)! Pay attention on orientation of diodes! Solder ferrite beads and IC socket on controls board!

Controls board

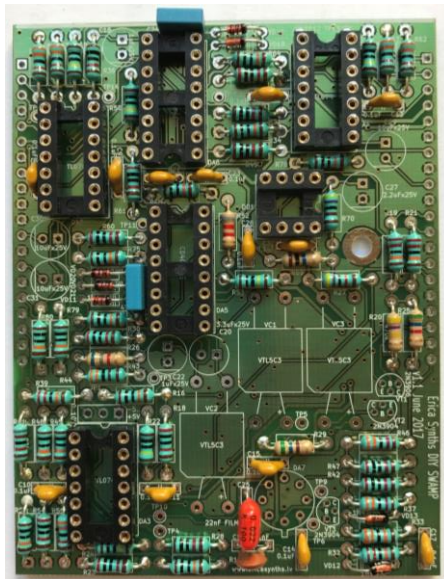


Main board



2

Solder IC sockets and ceramic and film capacitors of both boards! Also solder two transistors on the Control board! Please, resist temptation to solder resettable fuses on this side of the PCB – the are placed on the opposite side of the PCB!



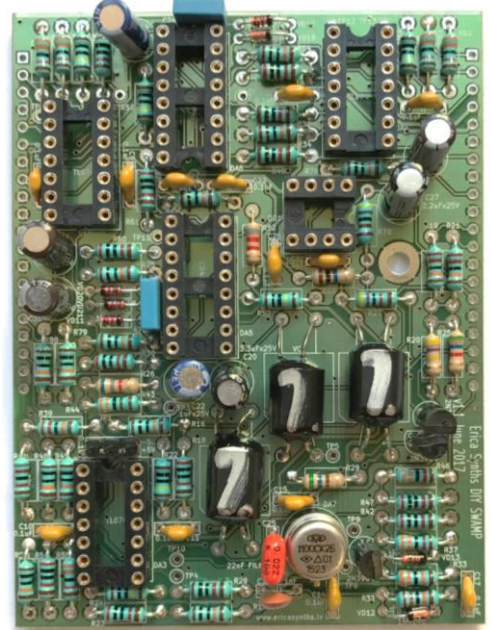
3

Solder electrolytic capacitors, transistors and trimpots on the Main board! Mind polarity of electrolytic capacitors and orientation of transistors! Don't mix up NPN and PNP transistors!



4

Solder 3 vactrols and S&H IC 1100CK! Make sure the key of the IC matches the silkscreen! Insert ICs in relevant sockets! Mind direction of ICs!



Negative lug of electrolytic capacitor is marked with a stripe!



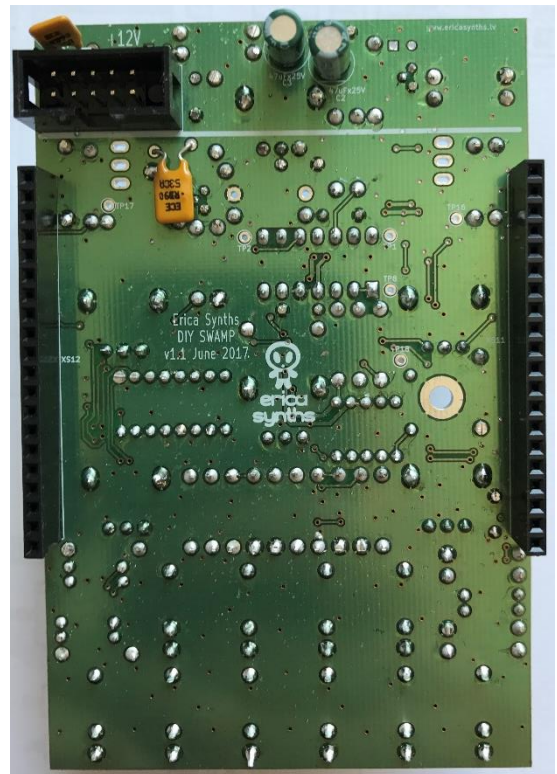
5

Solder potentiometers and jacks on the Control PCB! Do not mix values of potentiometers!



6

Turn the Control PCB around and solder board connectors and PSU connector. Then solder two electrolytic capacitors and resettable fuses. Note that one fuse is bent down horizontally!



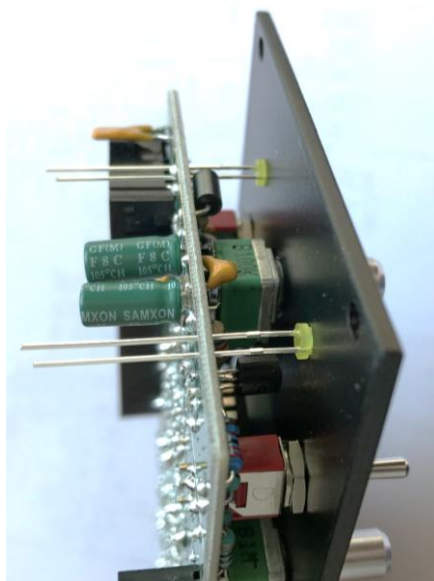
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Insert the TL074 IC! Solder two switches and place LEDs in relevant places. **Do not solder LEDs yet!**



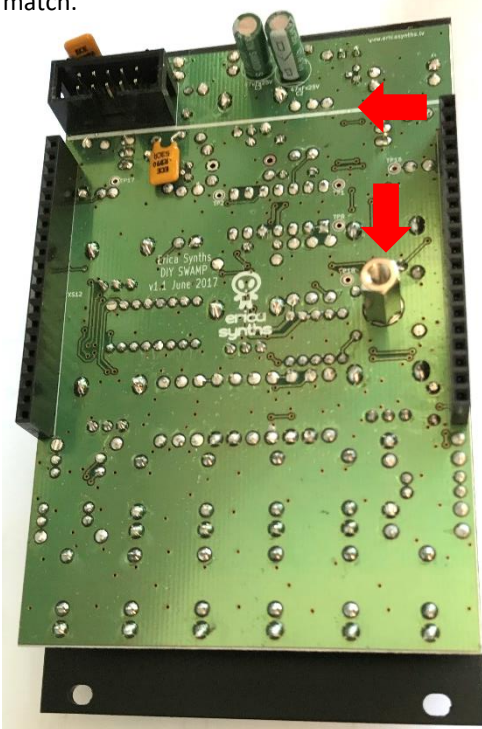
8

Put the front panel on and push LEDs into their places. Now you can solder them.



9

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



10

Install the front panel and potentiometer knobs! **Congratulations! You have completed Erica Synths SWAMP module!** It does not need calibration and will work straight away.

