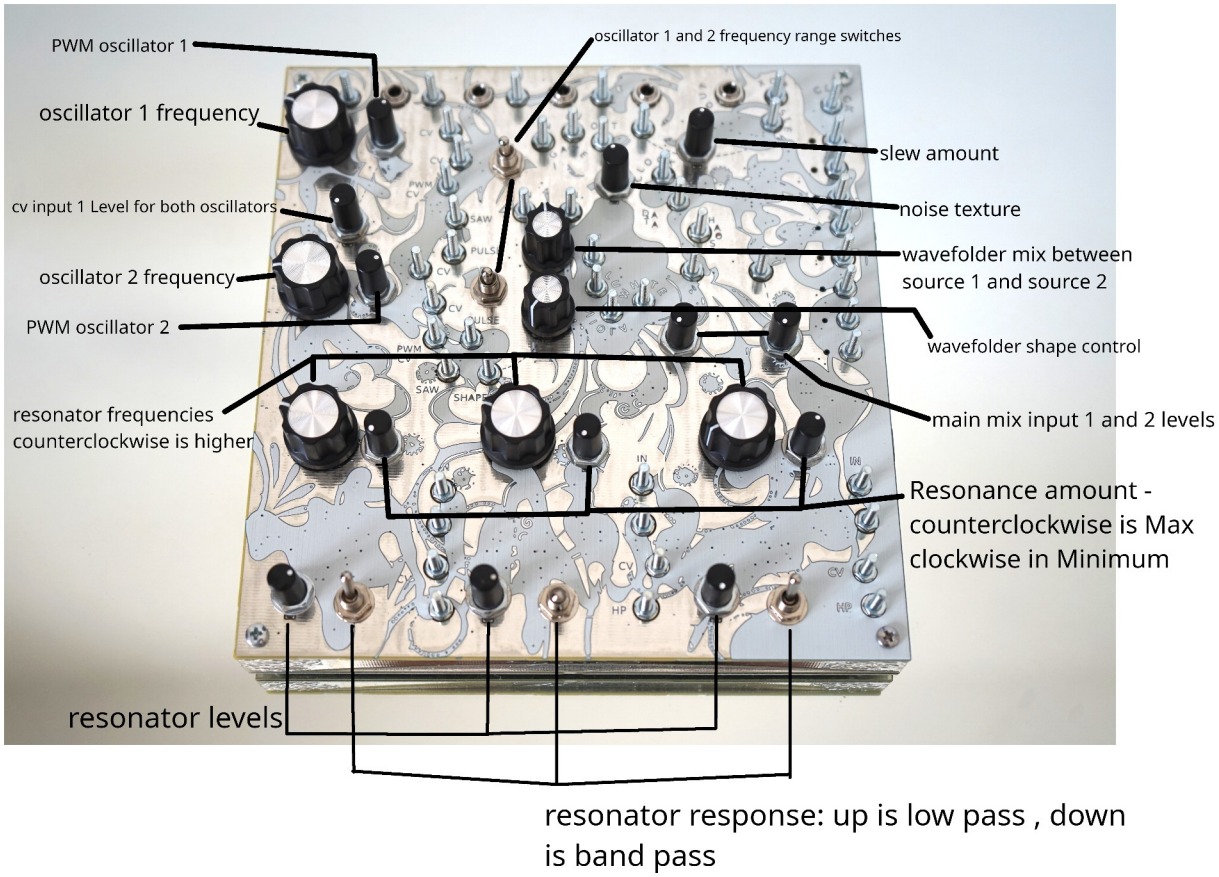
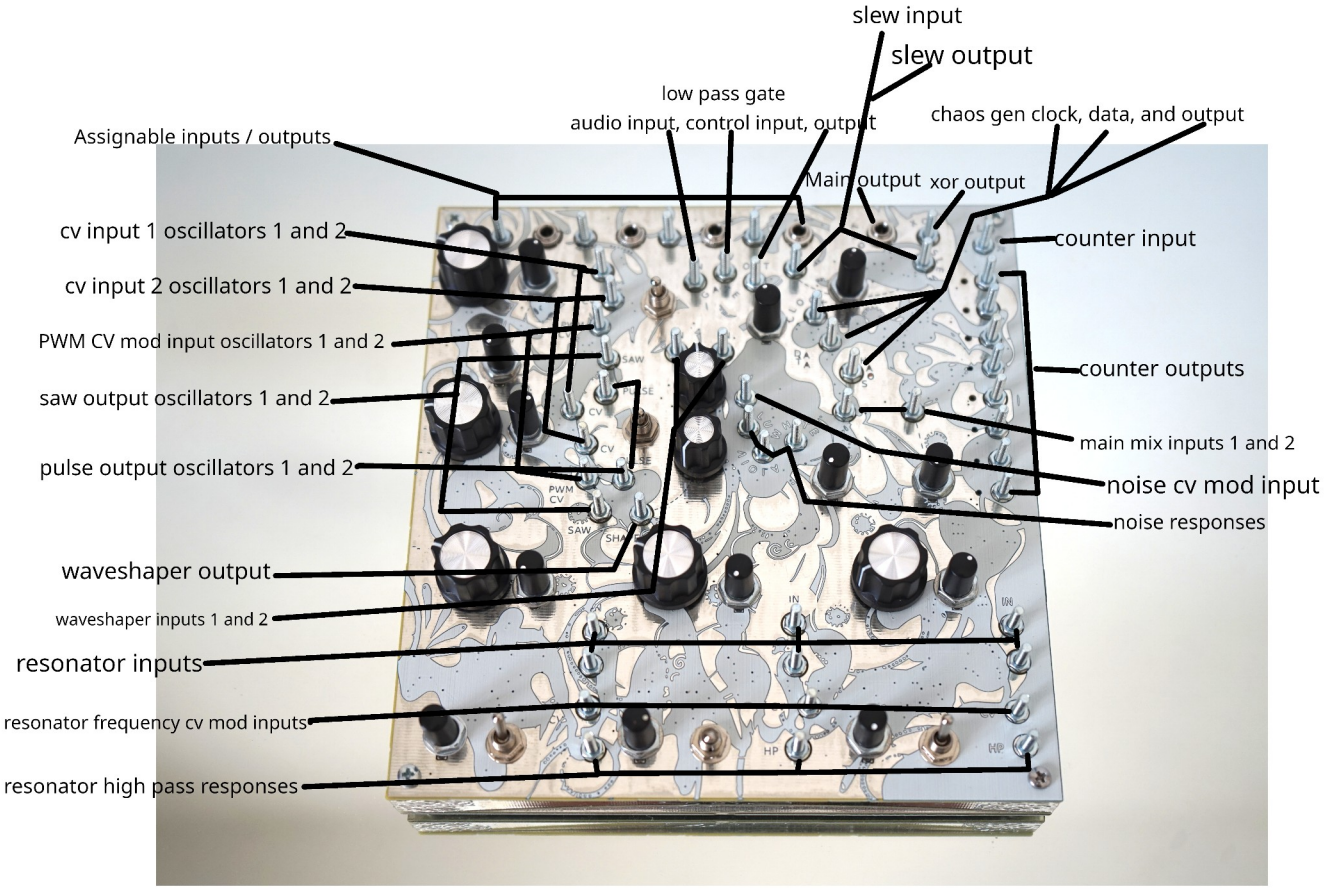
La Rosa de Poliphonia

controls diagram:



Patch Points Diagram:



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The polyphonic rose is a small desktop synthesizer that allows the user to create up to 5 layers of sound that are all derived from the same frequency. This could be called octave generation, but here the frequencies can go into the sub audible range, and so can even be used to create percussion layers or modulation layers extending beyond the 5 layers of audio. The layers can be mixed, faded in and out and selected in a way that the user can experiment with many divisions of the master frequency.

It is also an expansion on the resonator found in the anti rave synthesizer. In the rose however, there are 3 resonating filters tuned via capacitor selection to different frequency ranges, and in each of the resonators - all responses (high pass, band pass, and low pass) are available. There is also cv modulation possible via optical resistors which allow control of the resonator frequency.

The 3 resonators all have a capacitor switching system which is activated by the counter input. When a pulse is applied to the counter input the resonators begin switching capacitors, which essentially creates an analog delay in the range of microseconds allowing for interesting phase and comb filter like effects to be synthesized either on the internal signals or on external audio.

When the resonators are fed pulses derived from the counter input (ie counter output pulses) additive synthesis and organ like sounds are possible. And when the pulses go into sub audible range the resonators (with resonance turned up) give off “pinged” type of sounds ie: percussion.

The 3 switches at the bottom of the faceplate allow switching between bandpass (down position) and lowpass outputs (upwards position). The 3 outputs are hardwired into the main mix output located at the 3,5mm jack labeled “out” at the top right of the faceplate. Their levels are controlled by the 3 small Resonance. The resonators are not traditional filters that cover the full frequency range but rather share commonalities with eq style filters or twin t filters and so you might notice that they have optimized ranges in which their effect is heard more prominently. Sound might be cut out completely or passed fully without effect depending on the response curve chosen and the frequency of the input source.

Just above the resonators on the right side of the faceplate are two patch points with 2 small knobs which allow for 2 more audio sources to be mixed into the main output. Here you can send the waveshaper or xor gate for example. The 2 knobs control the input levels. If nothing is patched into the inputs, keep these knobs fully counterclockwise to avoid stray hums to be brought into the audio output.

To the left are the 2 oscillators. Each have a 3 way range selector switch. The oscillators respond to v/oct log curve cv, but use an ancient mosfet technology that sounds beautiful in its imperfection and does not give musical tuning across an entire 7 octave range as more modern IC’s can. The switches are useful for extending the musical tuning range or dropping the oscillators down into sub audible range. PWM is available on the pulse output of each oscillator via either the PWM knobs or CV input.

CV input 1 of each oscillator also passes through a single attenuator that attenuates cv input 1 for both oscillators. This can be useful for experimenting with equal tempered microtunings. CV input 2 on both oscillators is not attenuated.

The saw outputs of each oscillator are ideal for routing into the waveshaper located at the very center of the faceplate.

The waveshaper has 2 inputs (located just above the mix knob) which can be mixed together with the mix knob. Below the mix knob is the waveshaper amount (counter clockwise is maximum, clockwise is minimum) and below that to the left is the waveshaper output labeled “shaper” on the panel.

The two oscillators are also summed into an xor gate which is available at the top right of the panel just to the left of the counter input.

Finally there are the 5 utility sections which give some extra sound shaping / control possibilities: The noise section, the chaos generator, the low pass gate, the slew, and the 4 assignable inputs / outputs.

The slew generator has input, output, and a control knob. It will add a time lag to any signal that is input into it, and is useful for portamento or for making little slope / envelope shapes to give some contour to cv modulations.

The low pass gate is pretty self explanatory and just gates the input sound based on the control signal.

The noise section has 3 outputs with varying frequency ranges and volume characteristics. And has a knob that controls the texture or density of the noise.

The chaos generator produces a pseudo random cv source or sound wave depending on how you want to use the output. The output is determined by the clock signal, which determines the frequency of the voltage changes, and the data input, which synchonized with the clock will generate the pseudo random voltages.

And the assignable input / outputs at the top of the panel allow you to interface external sources into the crocodile patching system. It also allows for more intricate routings of the onboard sections, like for example if you want to route the main mix through the low pass gate.

The polyphonic rose uses a standard 12v dc center positive power supply with the plug being a 2,1 x 5,5mm type.

If it gets wet, turn it off immediately and wait for it to fully dry out before turning it on again. For any technical support don’t hesitate to get in touch info@twintropiques.com.