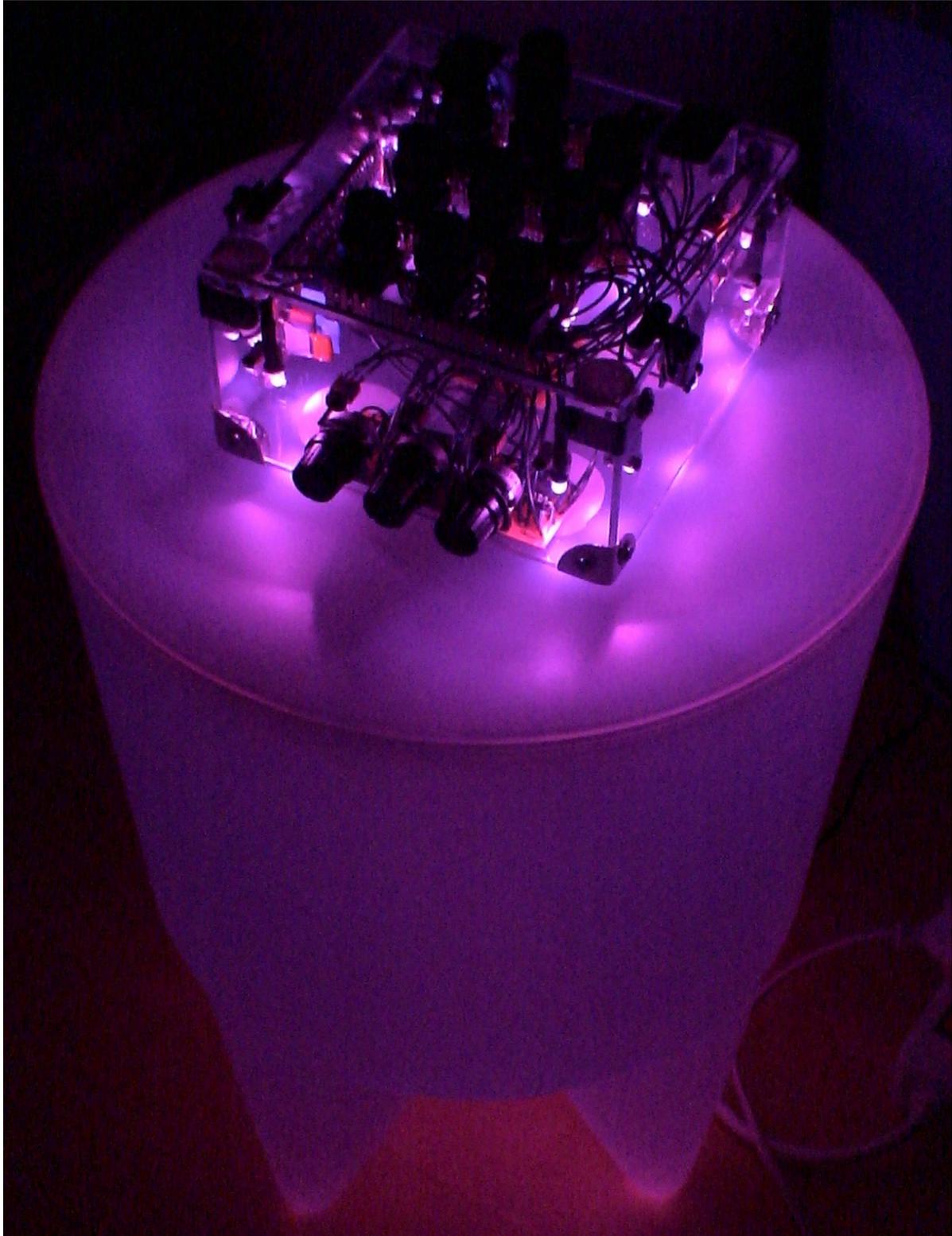
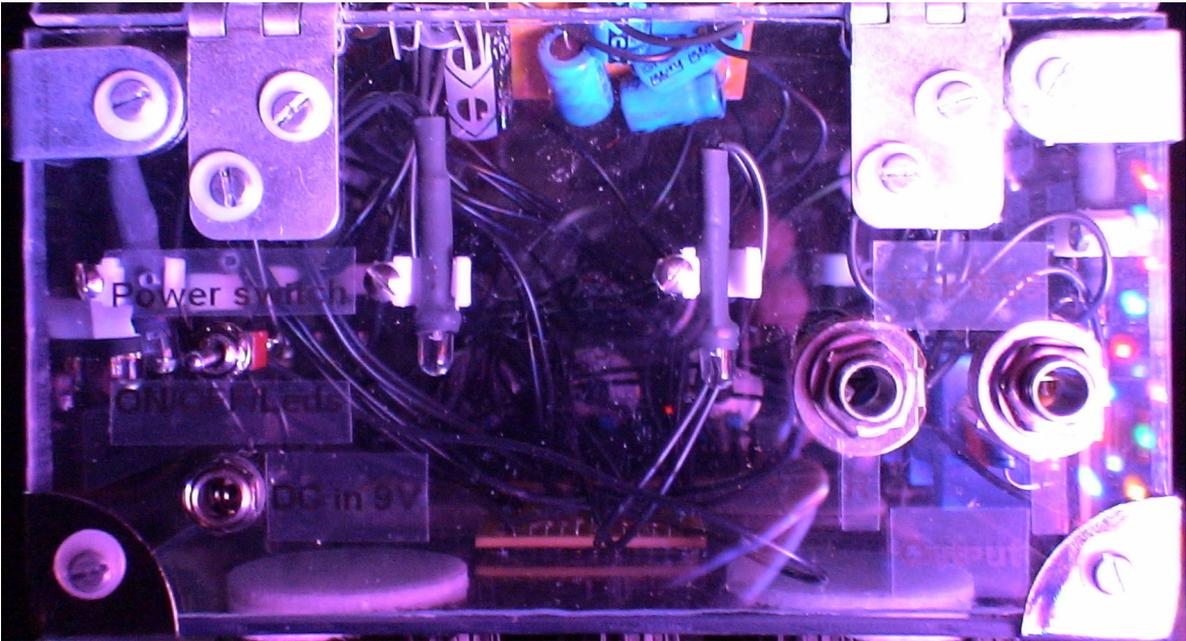


Pink NE555Synth by PJ Skyman

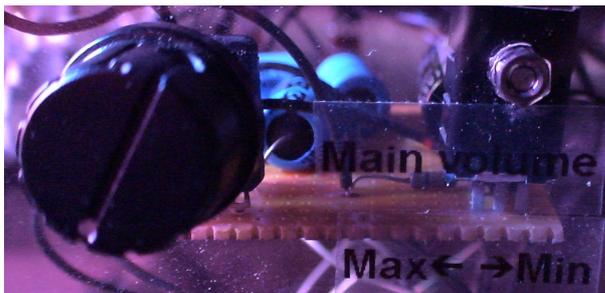
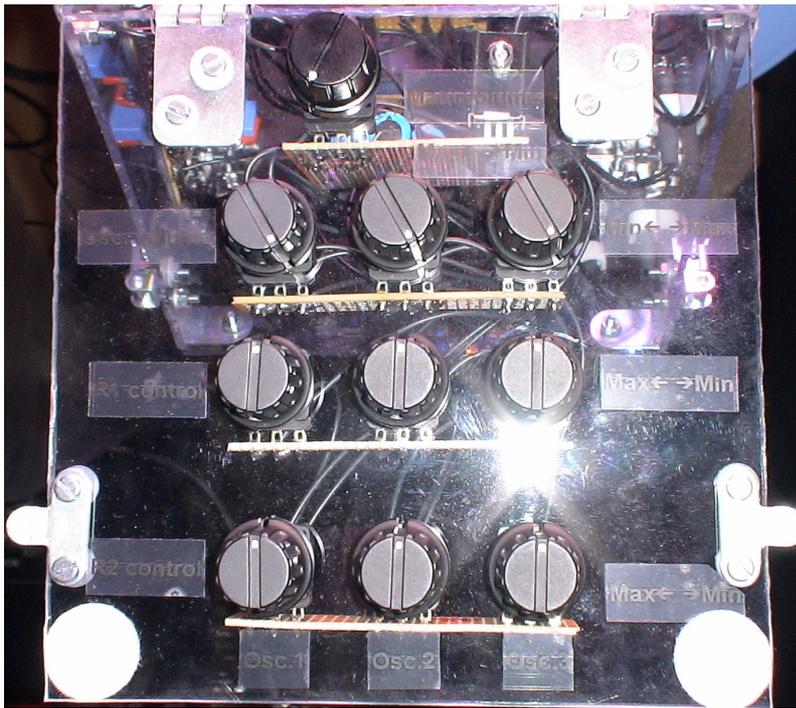


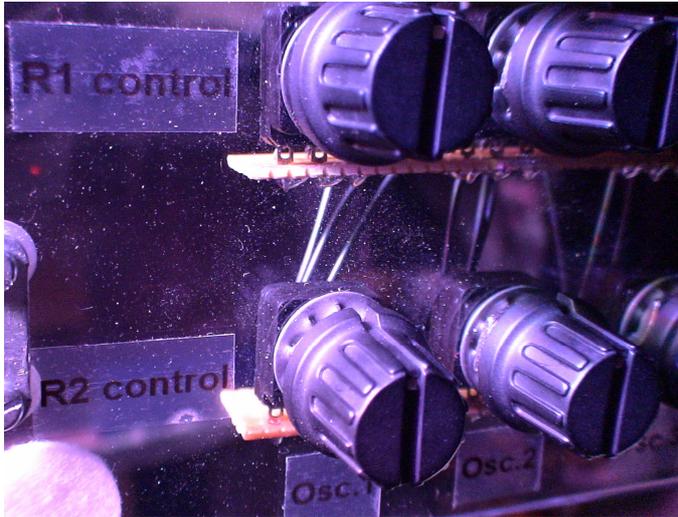
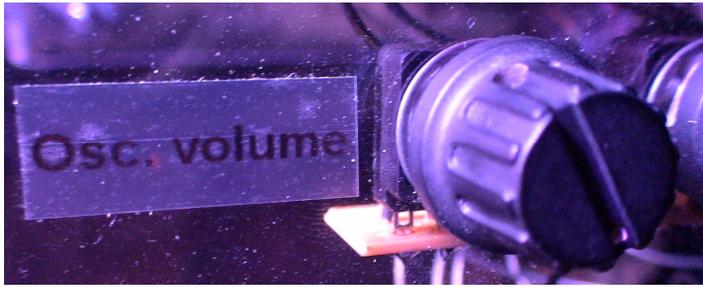
Rear :



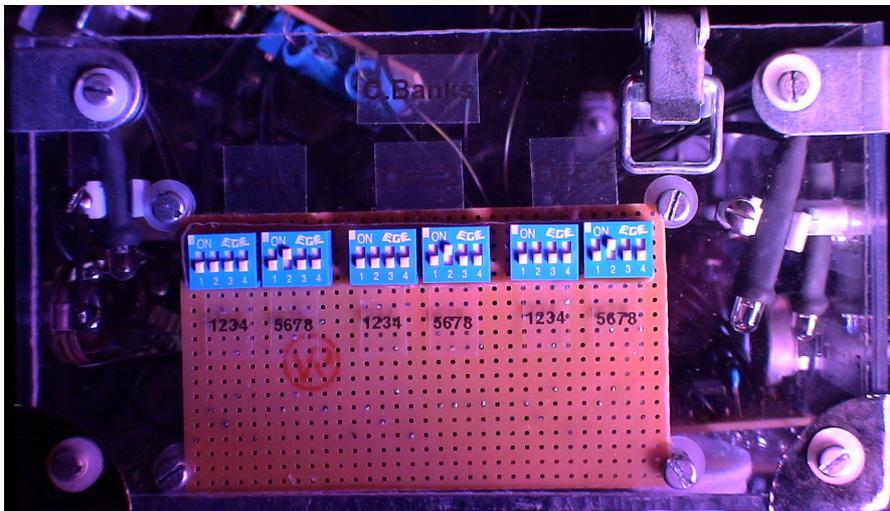


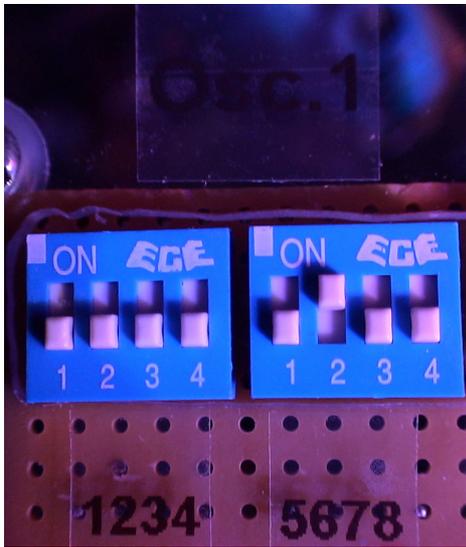
Top :





Left :



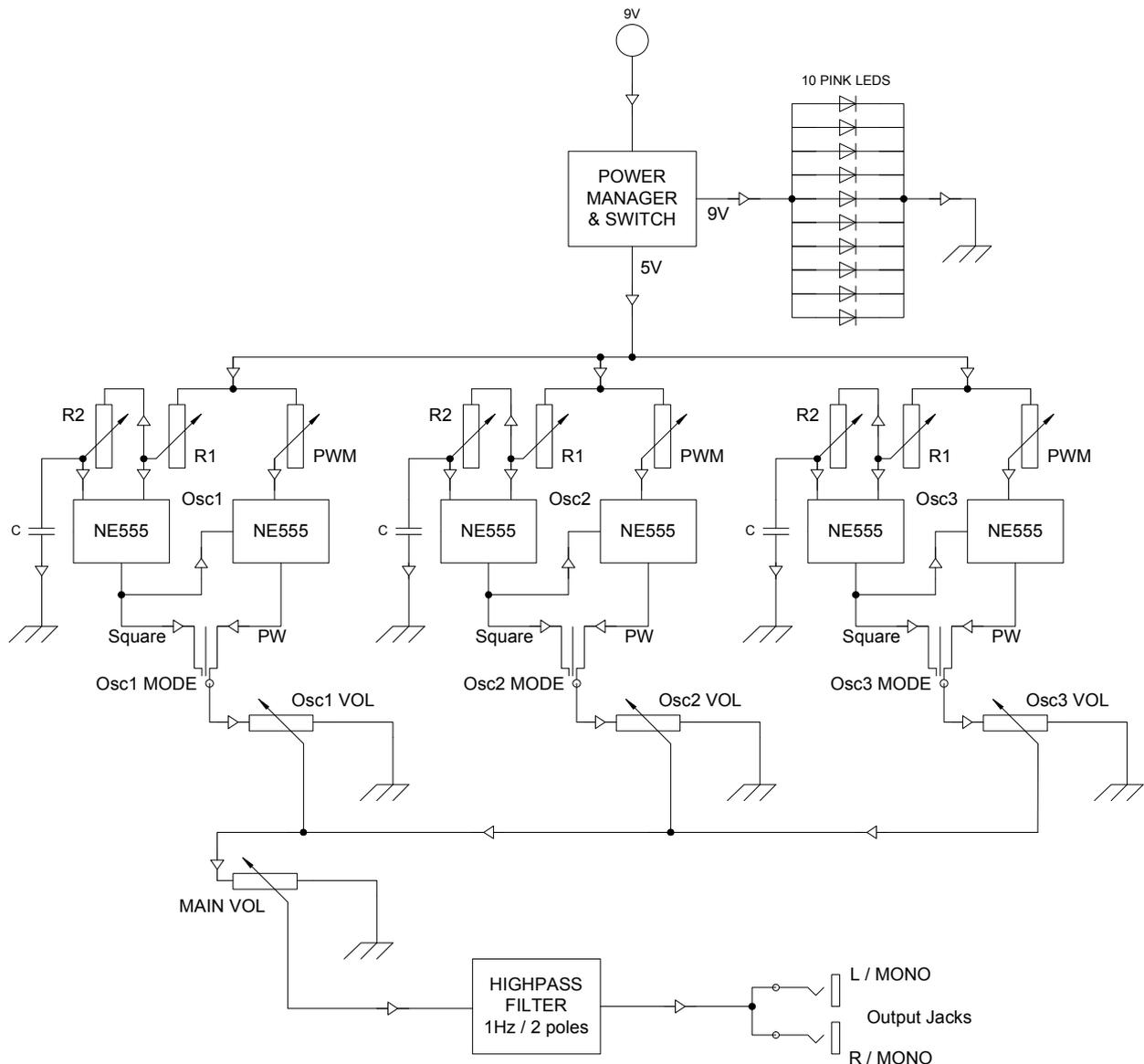


Front :





Simplified diagram :



Please also refer to the joined file with complete schematics for more details. I used a classic configuration with the left NE555 (oscillator) bistable and the right (pulse width modulator) monostable.

It's possible to use NE556 instead of two NE555. Here there's only 3 oscillators in parallel, but another similar model has 6 of them (see and listen on <http://www.pjskyman.com/album3.html>, bottom of page to see this first 6-oscillator prototype and listen to "03 - À écouter sans substance particulière" which is exclusively composed with this first prototype).

A 5 V voltage is good for NE555 chips, regulated with a 7805 voltage regulator. Use a AC/DC adaptor that can deliver 9 V or more if you plan to add leds in the box, 6 V otherwise is correct. The overall consumption is below 300 mA, plus about 20 mA by led. Warning for the heating of the 7805 chip !

Three-position switches for the oscillator mode permit : 1. simple square out, 2. mute, and 3. pulse width out.

The C-banks are banks of 8 switchable capacitors that allow frequency choose with a pseudo-octave spirit. Values of them are : 1=10 μ F, 2=4.7 μ F, 3=1 μ F, 4=470nF, 5=100nF, 6=47nF, 7=10nF, 8=1nF. You can switch more than one capacitor at the same time.

Since NE555 chips produce exclusively positive signals between 0 and 5 V, you **MUST** average the signal around 0 V with a passive highpass filter made with resistor and capacitor.

Usually, R1 and R2 controls adjust the frequency (and with the activated capacitors in the C-bank), and PWM control adjusts the pulse width of the signal only if the oscillator is on pulse width mode. Generally, the oscillators tend to be automatically harmonized, like the sympathetic strings effect of a guitar. With high frequencies, a strange but beautiful phenomenon of harmonic frequencies is listenable when you adjust the PWM.

Please keep in mind that this NE555Synth project is very experimental with strange musical effects ! Note that the values used for the different components are not always the perfect values and need to be adjusted. By example, oscillator volumes are very exponential and need to be improved in future versions of NE555Synths. Try by yourself different values of each component if you can in order to obtain good behaviors for each knob.

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