

GENERAL INFO:

Liquid Foam sends and receives 0-5v gate signals of various width, so be careful when patching with other banana jack instruments, please do not feed negative voltages in any of its inputs. The external clock input is protected from overvoltages and negative voltages so it can receive a wide span of different signals. Keep in mind that when any clock transition signal is present at the external clock input the sequencer will advance one step, so if your external gear spits out a clock transition signal every quarter note your synced sequence will be 4x faster than the master sequence.

CLOCK:

The speed of the sequence is set by the rate knob. the upward arrow indicates the clock input jack, the downward one indicates the clock output jack. When an external clock is detected at the clock input jack the internal timing instantly synchronizes to the external one. If the external clock stops or the jack is pulled off the internal clock will start to drive the sequence again after a couple of seconds.

VCO PITCH:

Inputs **A**, **B**, and **C** will take gate signals from the sequencer or the lfo and create 7 different pitches according to the relation between them. **pitch** knob sets the master pitch and when turned completely counterclockwise it will silence the oscillator. From low to high pitch the gate combinations are: A, B, AB, C, AC, BC, ABC.

LFO:

The **LFO** outputs a rectangle wave and its pulsewidth can be manually adjusted with the width knob, apart from the obvious rate knob there's a led indicator and a jack output. The LFO output is normalled to sequencer B input, more on that later.

SEQUENCER A:

Sequencer A consists of four outputs and in its basic state just one of them can be high on any given clock step. The LEDs gives visual feedback of the clockwise rotation of the active gate. If a gate signal is applied to input **X** and/or **Y** the rotating pattern will change its course and different combinations of high gates will be available, thus permitting the creation of more complex patterns and melodies.

SEQUENCER B:

Sequencer B is tied to the relation between the clock speed and the **LFO** rate and width: every clock step it checks the **LFO** state and if it is high then it will pass a gate through its four outputs, in a similar fashion to sequencer A but rotating counter-clockwise. This means that by controlling the **LFO** parameters the four gates can be all low, all high or anything in between.

ENVELOPE GENERATOR:

The decay-only envelope generator is triggered every time a gate signal is patched to the **A B C** inputs, the length of the envelope is controlled by turning the **decay** knob. If a gate signal is present at the **eg inv** input the curve of the envelope gets inverted and the **offset** knob sets how much the inverted signal will affect the filter cutoff frequency. This means that the same sequence can have different envelope slopes on different steps.

Whenever a gate signal is patched to the **eg→vco** input, the envelope generator is routed to the **VCO** frequency input, bypassing the **A, B, C** signals. This may be pretty handy to make kick drums or, when combined with the inverted envelope, portamento/glide effects between different notes.

WAVE MIXER:

The **VCO** can output and mix together three different waveforms: triangle, sawtooth and rectangle wave with variable pulsewidth.

There are two wave blending and shaping stages: when turned clockwise the first wave knob blends between triangle and sawtooth while the second one blends between whatever waveform is present at the first stage (tri, saw or anything in between) and the rectangle wave which pulsewidth is set by turning the **width** knob.

LOWPASS FILTER:

The two-pole 12dB/oct low pass filter is affected by the envelope generator and the **freq** and **res** knobs.

DRIVE STAGE:

cmos-based overdrive stage just before your 1/4" jack output, warm sounding, when completely turned clockwise the output signal will get pretty hot, be careful!

The banana jacks inside a circle are inputs, the other ones are outputs.