

nonlinearcircuits

NEUROTIC Panel User guide vers. 1

BLUE = INPUT. RED = OUTPUT

2 x ADSR & CV Processor

The two ADSRs are based on the Aries design using discrete components (no CMOS or op amps). The main point to know is they need a gate and a trigger to operate. The simplest patch is to feed the same gate signal to both the gate and trigger inputs. More interesting is to feed it multiple triggers to return to the attack stage while the gate input remains high.

There are two identical (unmarked) envelope outputs and an End Out which goes high when the envelope falls to just above 0V. The End out is quite hot, about 10V, but still fine to patch into any input.

The outputs of the ADSRs are hardwired to the CV Processor as well; these signals can be attenuated by the two left side pots. The two right side pots are for the two inputs and can be set to give a gain from -1 to +1, centre is zero. This means you can invert the signals on the inputs. The CV Processor has a regular output and its inverted equivalent. By using the CV Processor to mix the envelopes from the two ADSRs and a signal from the Jerkoff, it is possible to get a great array of very interesting CV signals.



Conjoined Transient Generators

Best thing to do is watch this video, which gives instructions to get started with this module.

<http://www.youtube.com/watch?v=cl3XIUwbYQM>

There are actually two transient generators (TG) on this module, the second one has no pots and whatever signals it generates depends entirely upon what the main TG is doing, it needs a gate input to activate it. This 2nd TG is called Kuato, after the conjoined being from Total Recall.

To use Kuato, you need to get the main TG running and then give Kuato a gate signal and see what happens.



So onto the main TG. This is based on the Electronotes design with extra CV inputs and a different damp circuit. This module is actually a low pass filter designed to work with CV rather than audio, it rings at high Q setting allowing for some totally unique envelopes, it also self-oscillates so can be used as an LFO. It took me some time to get my head around this module, but now I think it is one of my all-time favorites.

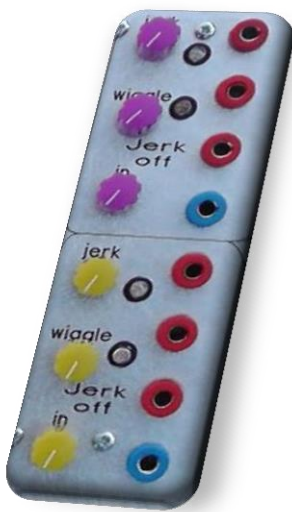


Dual Jerkoff

This module contains two chaos circuits based on Sprott's jerk chaos designs. At various pot settings they will oscillate chaotically without any input signal. If an input signal is patched, the Input pot sets how much influence the input signal has on the circuit. This video shows how the outputs vary depending upon the input signal:

<http://www.youtube.com/watch?v=opmle8adHrs>

The upper circuit operates at a central frequency (pots in centre position) of approx. 2 Hz; it will run slower than this depending upon the pots settings and input signal. The lower circuit runs about 4-5 times faster than this and introduces a lovely warble to your CV signals.



4 x Neurons

This neuron was inspired by a paper on neural computing and is a variation of a typical analogue neuron circuit. This means it receives a set of signals and at some point reacts to them. How it works with a circuit is the Set pot allows you to choose the voltage level of the input signals that will make the neuron react and the Response pot determines how big a reaction it will be (from "oh, that's interesting" to "HOLY SHIT!!!!!!").

The reaction is actually a pulse or gate, when the neuron is not getting excited the input signal are still passed thru to the output but they are rectified.

To use it: put some LFO and/or EG signals on the inputs or maybe something from a sequencer. Use the output to control pitch on a VCO or cut-off on a VCF – or anything else you can think of. Twiddle the pots until it sounds good.

It will even work with just one input signal, although is much more interesting with two or three. This video shows the complex signal that can be obtained from inputting two LFO Tri waves:

<http://www.youtube.com/watch?v=rkOX40dvHEw>

It can also handle audio frequencies, so try it out as a wave-shaper. Feed it two or three signals from different VCOs and let them fight it out. Or feed it a VCO signal and a slow envelope or LFO to modulate the audio.

It can be fun to patch the 4 neurons together with plenty of feedback until you obtain a bubbling mass of complex CVs that kicks and wriggles with just a slight twitch of one of the pots, remember - it's only a few trillion neurons short of a full brain!

Just some ideas, if you find some other uses, do share!



eti Transient Generator

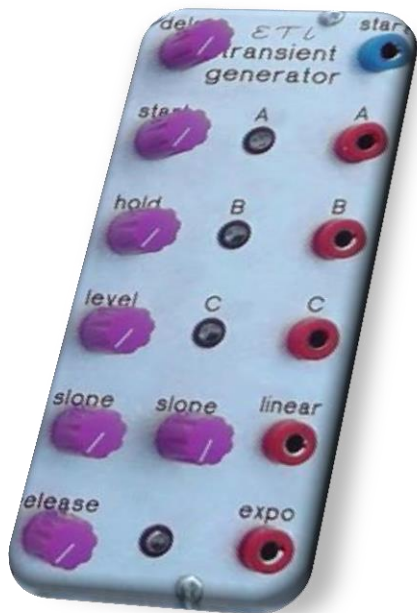
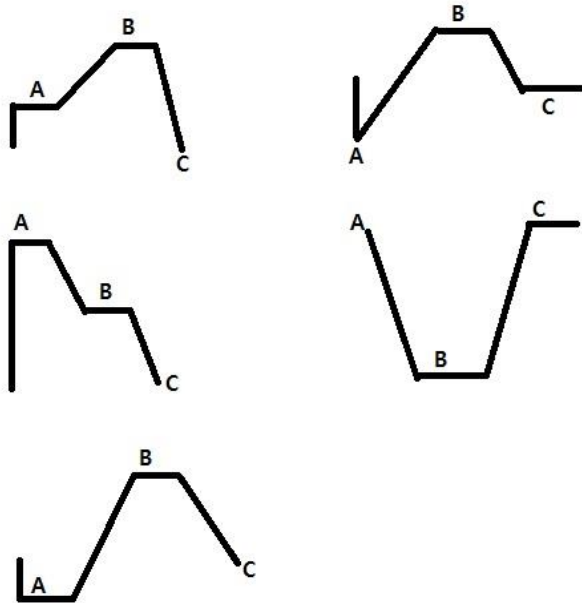
This is based on the ETI4600 circuit and is quite the opposite of the other TG on this panel, but equally interesting and leftfield. It only has one clock/trigger input and no other way to control it, except for the pots.

It requires a slow or intermittent clock signal, if the signal is too fast it is stuck on stage A or just jumps between A and B (the LEDs will indicate this).

It has three stages: A, B, & C, when it receives a trigger, stage A is activated. The start pot sets the height of A and the delay pot sets how long it will stay in A. The slope pots set the rate of glide from stage A to stage B and from B to C. The level pot sets the height of stage B and hold pot sets how long it stays in B. Then the release pot sets the height of C. The circuit then stays in C until a new clock signal arrives. The transition from C to A (when the cycle starts) is a jump, equates to fast velocity!

A good tip is to reverse your thinking with this one and have B as the off stage (turn it down low, so A and C are higher). This way you can have some VERY long envelopes.

This pic shows some of the envelope shapes possible:



Feel free to make suggestions on how to improve this guide or ask questions if anything is unclear/poorly explained /glossed over or obviously bullshit

Andrew

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