

## nonlinearcircuits

### GENiE build & BOM

#### GEneralized Nonlinear Extrapolator

This module is made of 3 neuron circuits and a difference rectifier. The neuron outputs are fed to the switching pins of the next neuron's attenuated input; 1>2, 2>3, 3>1. This means the circuit will work with a single input signal, delivering all kinds of mayhem at the outputs.

There are also 4 shared inputs so that the same signals can be fed to neurons 1&2 and neurons 2&3.

The Difference Rectifier compares the outputs of neurons 1&3 to the output of neuron 2.

If you want to use the neurons individually then turn down the input pots or use the upper neuron specific inputs to disconnect the signals coming from its neighbour.

Just like a set of synaptically connected neurons, this module is noisy and unruly. It is never going to learn anything it lives in and for the moment.

It can be used to process audio, CV or audio and CV.....do whatever you like to it.

The name is from the computer described in the 1964 Keith Laumer novel - The Great Time Machine Hoax, although this module differs in ability (can't time travel or get married ..... afaik), the name is quite suitable.

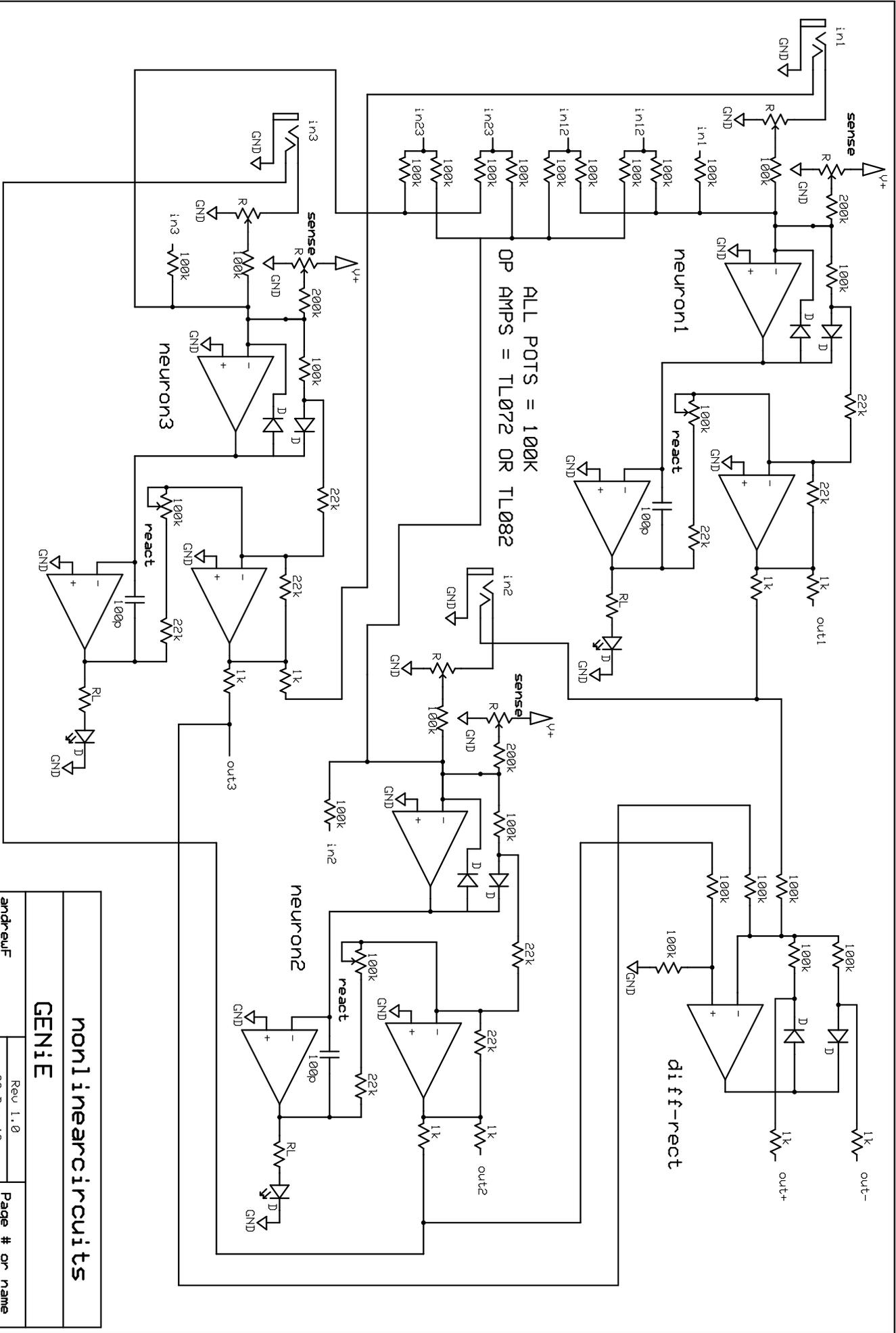


**BOM** – The Tayda part numbers are given as examples, feel free to buy from your favorite retailer if you prefer. Synthcube, Modular Addict and Thonk are all good sources for jacks, pot and knobs

VALUE	QUANTITY	DETAILS
100pF	3	0805, anything from 47pF to 150pF will be ok, 25V rating or higher
10µF	2	0805 OR 1206, 25V rating or higher
RL	3	0805 resistor for panel LED, select to suit brightness (best to use a superbright LED and at least 10k)
1k	8	0805
22k	9	0805
100k	23	0805
200k	3	0805
TL072 or TL082	5	soic Tayda: A-1139
LL4148 diodes	8	
3mm LEDs for panel	3	3mm - superbright or similar
100k (B) pot	9	Tayda: A-1848 but find knurled shafts (Synthcube, Modular Addict or Thonk)
Eurorack 10 pin power connector	1	Tayda: A-198
Schottky, power rectifier or 10R, optional - for reverse voltage protection...or not	2	SMD, Schottky (best option) or standard power rectifier diode 50-600V 1A or more, dot on PCB indicates CATHODE (stripe on component) Or use a resettable fuse or just a 10R. SEE NOTES #1
3.5MM SOCKET Kobiconn style	15	Tayda: A-865 or preferably get Thonkiconn Jacks (PJ301M-12) from Thonk or Modular Addict or Synthcube

#### Additional notes:

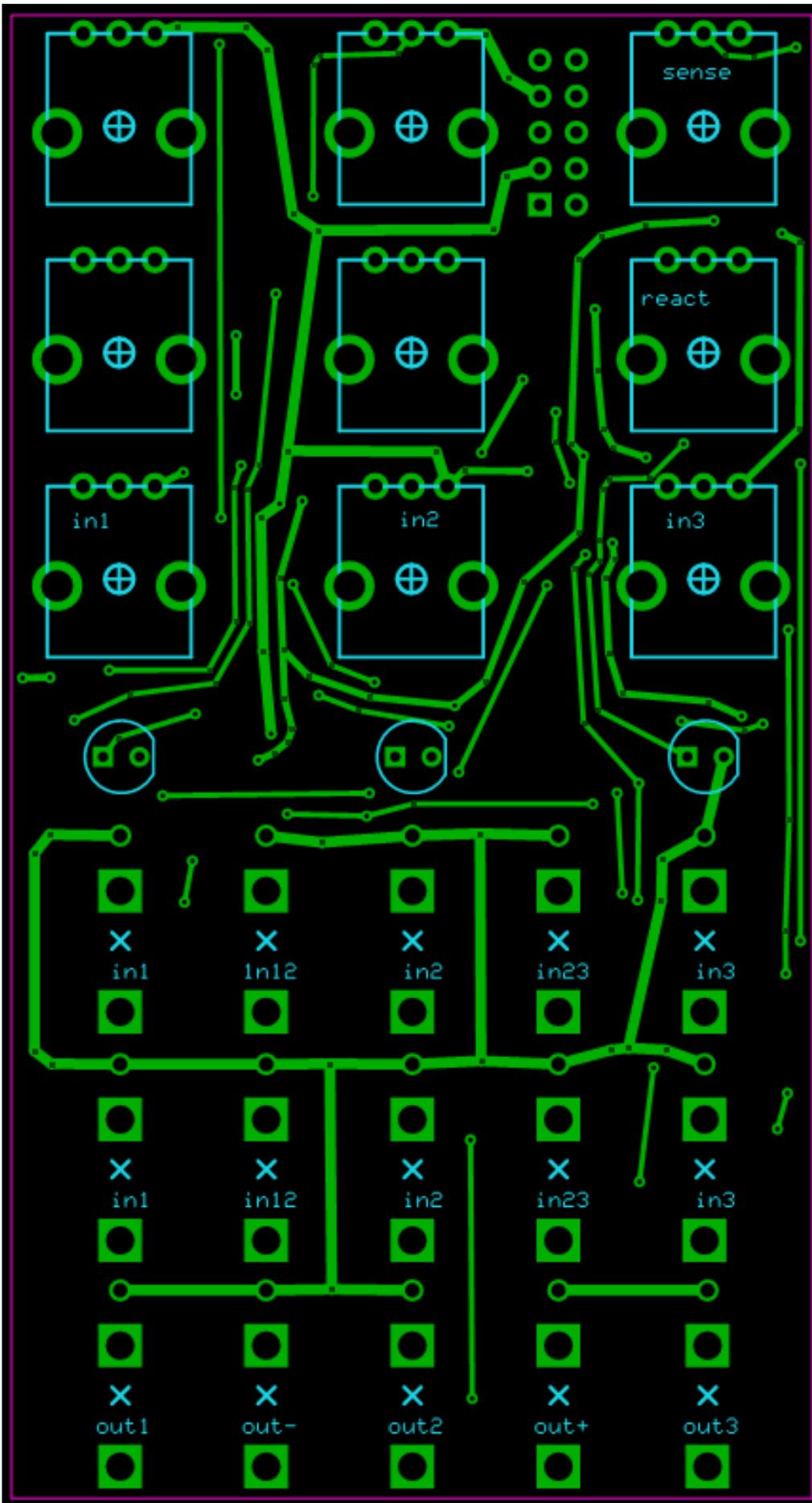
1. Some power diodes: PMEG2005EGWX SCHOTTKY RECT, AEC-Q101, 20V, SOD-123, PMEG2005EH DIODE, SCHOTTKY, 0.5A, 20V, 1N400x or S1JL or similar
2. The resistors, caps and transistors are cheapest from Tayda. Diodes from Mouser/E14/Farnell/etc.
3. Join the Nonlinearcircuits Builders Guild on FB: <https://www.facebook.com/groups/174583056349286/> and ask questions there if you have any. If you prefer not to FB then email is fine.
4. Pot spacing is tight, best to use splined/knurled shaft pots and small knobs. Do not use pots with the white marking on the top of the shaft and no knob, unless you want it upside down.



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Bottom

