

nonlinearcircuits

Hypster build & BOM

The Hypster is a hyperchaos module designed by Ian Fritz. The PCB layout is by nonlinearcircuits. In Ian's words - *It's fourth-order hyperchaotic, with voltage control of the main parameters, including exponential control of the cycle rate.* The module ranges from a few kHz down to approx. 5 minutes per cycle so is great for CV and audio duties.

The module works fine if built as per the component labelling. Outputs U and -U do clip briefly at certain pot settings. It is an analogue circuit so just as Nigella Lawson says 'fat = flavour', it can be said clipping = character, in moderation tho. Clipping in digital circuits is simply ugly.

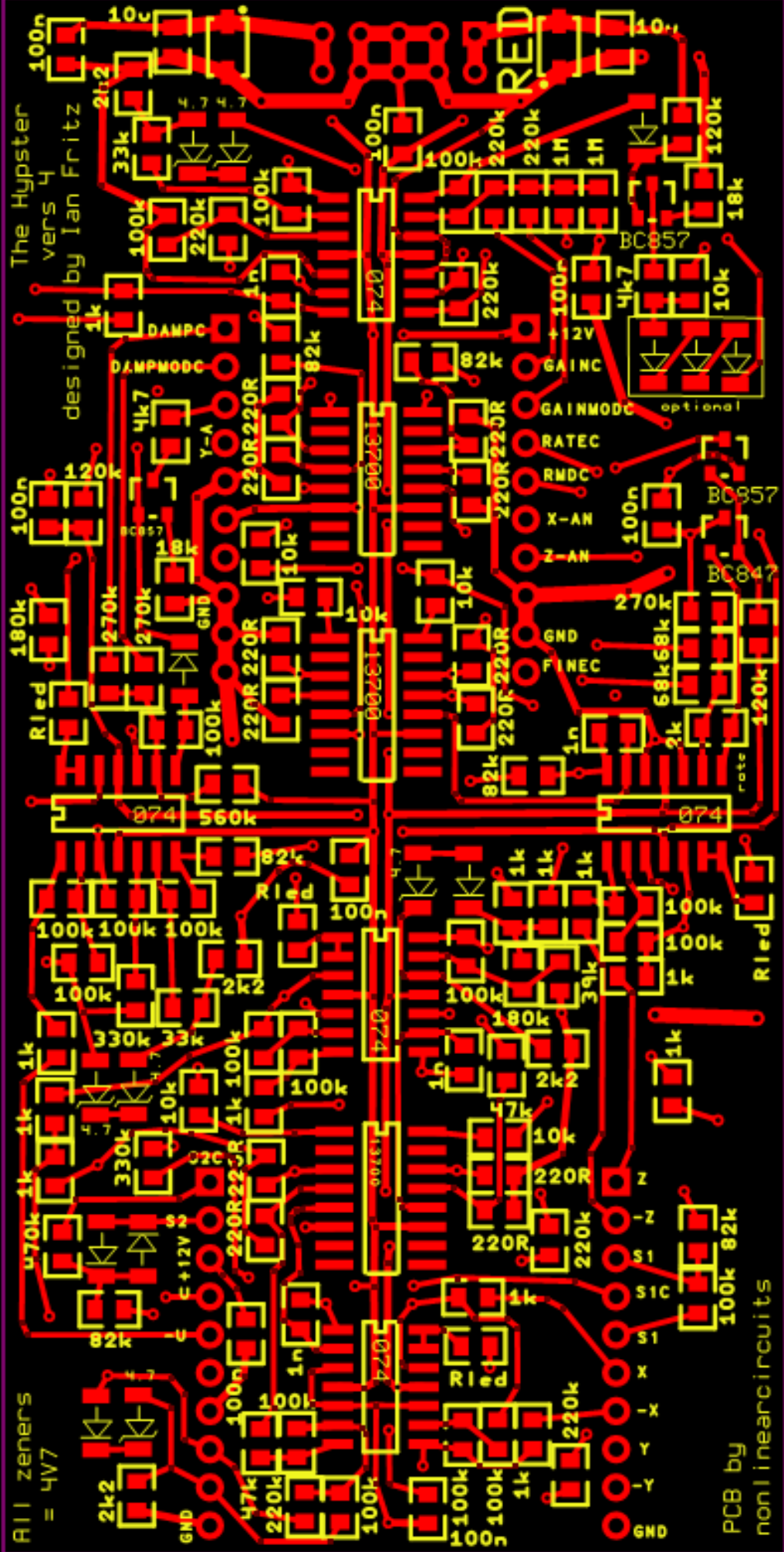
Additional notes:

1. The prices for these 10uF 0805 capacitors drops to approx. 10c each when buying more than 10...and you should always get plenty of spares, it is easy to drop and lose smd parts.
2. S1JL Power diodes are for Reverse voltage protection - Mouser Part No: 821-S1JL. Any similar rectifier with at least 1A rating should be okay, such as 1N4001, 1N4002, 1N4004. Get these sizes; SOD-123 or sub-SMA (DO-214 is a bit too big, so avoid)
3. The resistors marked RL are for driving the LEDs. Select a value to suit your LEDs. Generally for RED/GREEN LEDs, I use 470R and for RED/BLUE LEDs I use 4k7. Cheapest source for 2 pin bi-polar LEDs seems to be ebay, search for the term underlined.
4. The resistors and op amps are cheapest from Tayda. Probably get the caps and diodes from Mouser.
5. 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.
6. Check the build picture in the manual, note the pots, jacks, LEDs and switches go on the BACK of the bottom PCB, which is the side with no printing on it.

BOM

VALUE	QUANTITY	DETAILS
1nF	4	0805 good to use C0G/NP0 types
100nF	8	0805
10µF	2	0805 25V rating or higher Mouser No: 81-GRM21BR61E106KA3L (or similar)
220R	12	0805
1k	12	0805
2k	1	0805
2k2	4	0805
4k7	2	0805
10k	6	0805
18k	2	0805
33k	2	0805
39k	1	0805
47k	2	0805
68k	2	0805
82k	6	0805
100k	18	0805
120k	3	0805
180k	2	0805
220k	7	0805
270k	3	0805
330k	2	0805
470k	1	0805
560k	1	0805
1M	2	0805
RL	4	see notes #3
LL4148 diodes	9	size: SOD-80, mini MELF, LL34, DO-213AAthey are all same
4V7 zener diodes	6	size: SOD-80, mini MELF, LL34, DO-213AAthey are all same. I used this one : Mouser No:78-BZT55C4V7
BC847	1	NPN, sot-23 Tayda - A-1339
BC857	3	PNP, sot-23 Tayda - A-1345
TL074 or TL084	5	SOIC Tayda: A-1137 or A-1140
LM13700	3	SOIC
5mm 2 pin bi-polar LED	4	see notes #3
Eurorack 10 pin power connector	1	Tayda: A-198
1N400x or S1JL or similar, optional - for reverse voltage protection	2	SMD, standard power diode 200-600V 1A, dot on PCB indicates CATHODE (stripe on component) SEE NOTES #2
3.5MM SOCKET Kobiconn style	11	Tayda: A-865 or preferably get Thonkiconn Jacks (PJ301M-12) from Think or Modular Addict
100kB pots	7	Tayda: A-1848
SPDT toggle switch	2	on-on, Tayda: A-4567
10 Pin 2.54mm Single Row Female Pin Header	4	Tayda: A-1306
40 Pin 2.54mm Single Row Pin Header Strip	1+	Tayda: A-197, cut into lengths of 10, get some spares in case you stuff it up or drop some.

All zeners
= 4V7

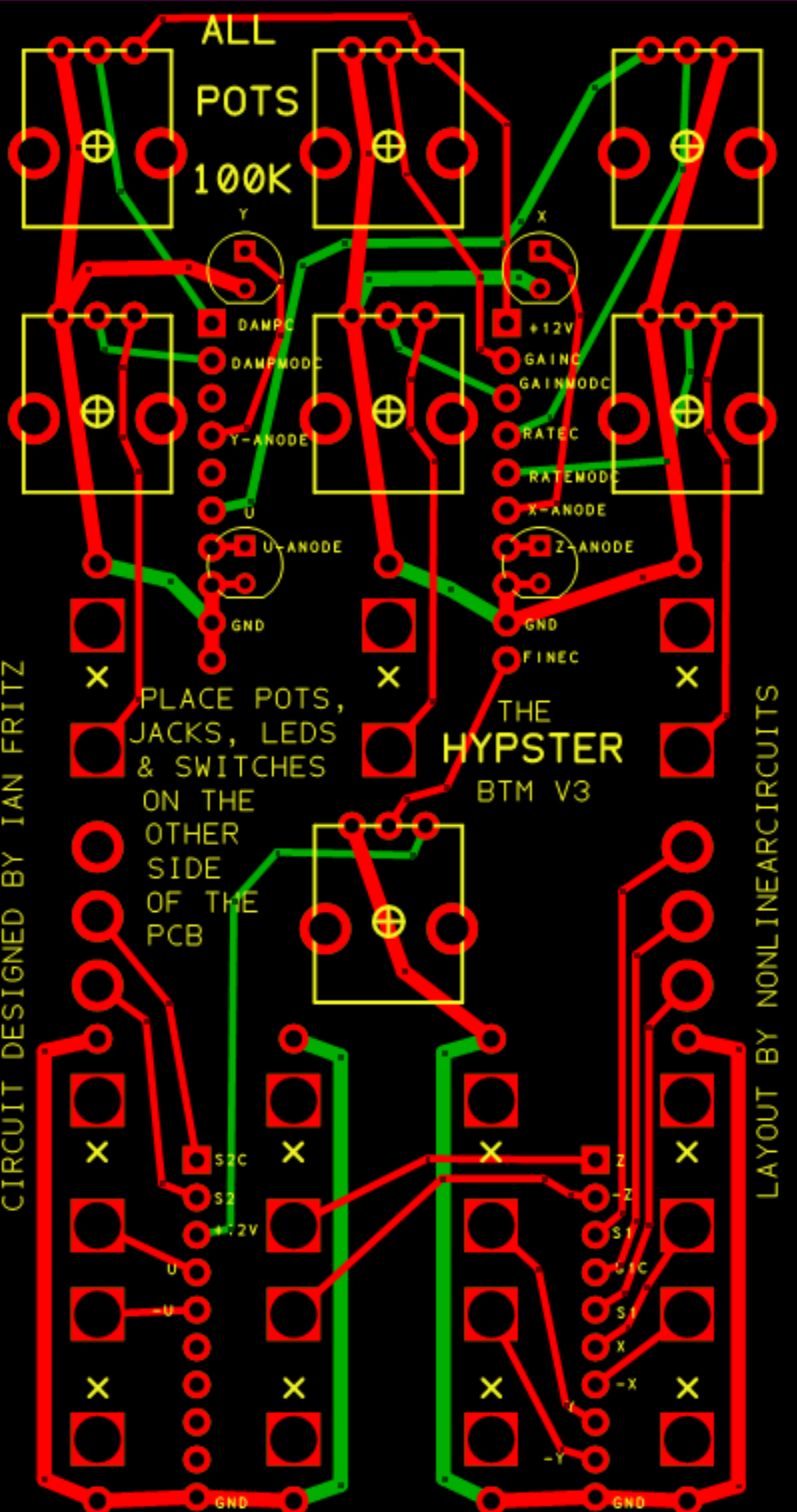


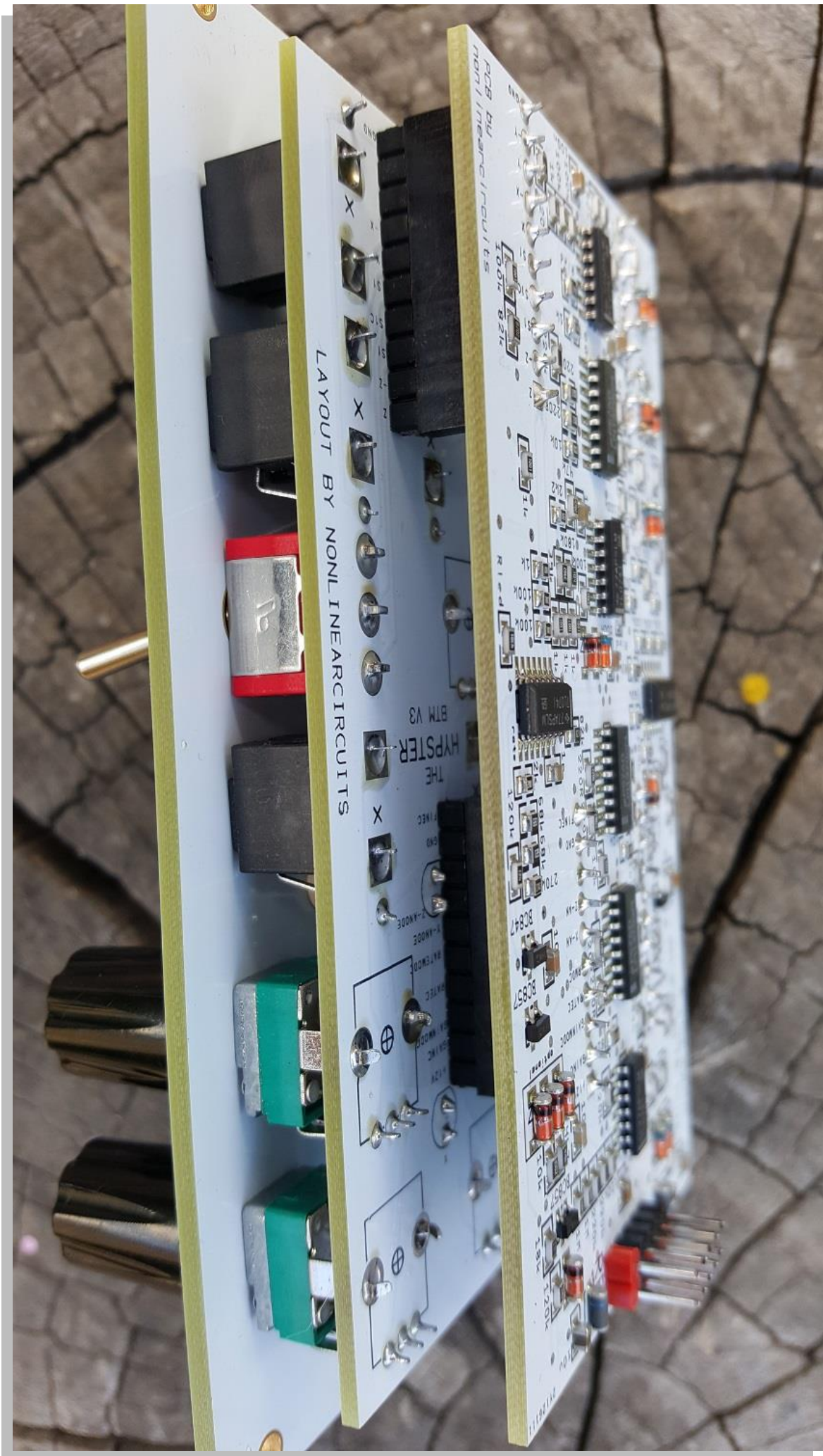
The Hypster
vers 4
designed by Ian Fritz

PCB by
nonlinearcircuits

CIRCUIT DESIGNED BY IAN FRITZ

LAYOUT BY NONLINEARCIRCUITS

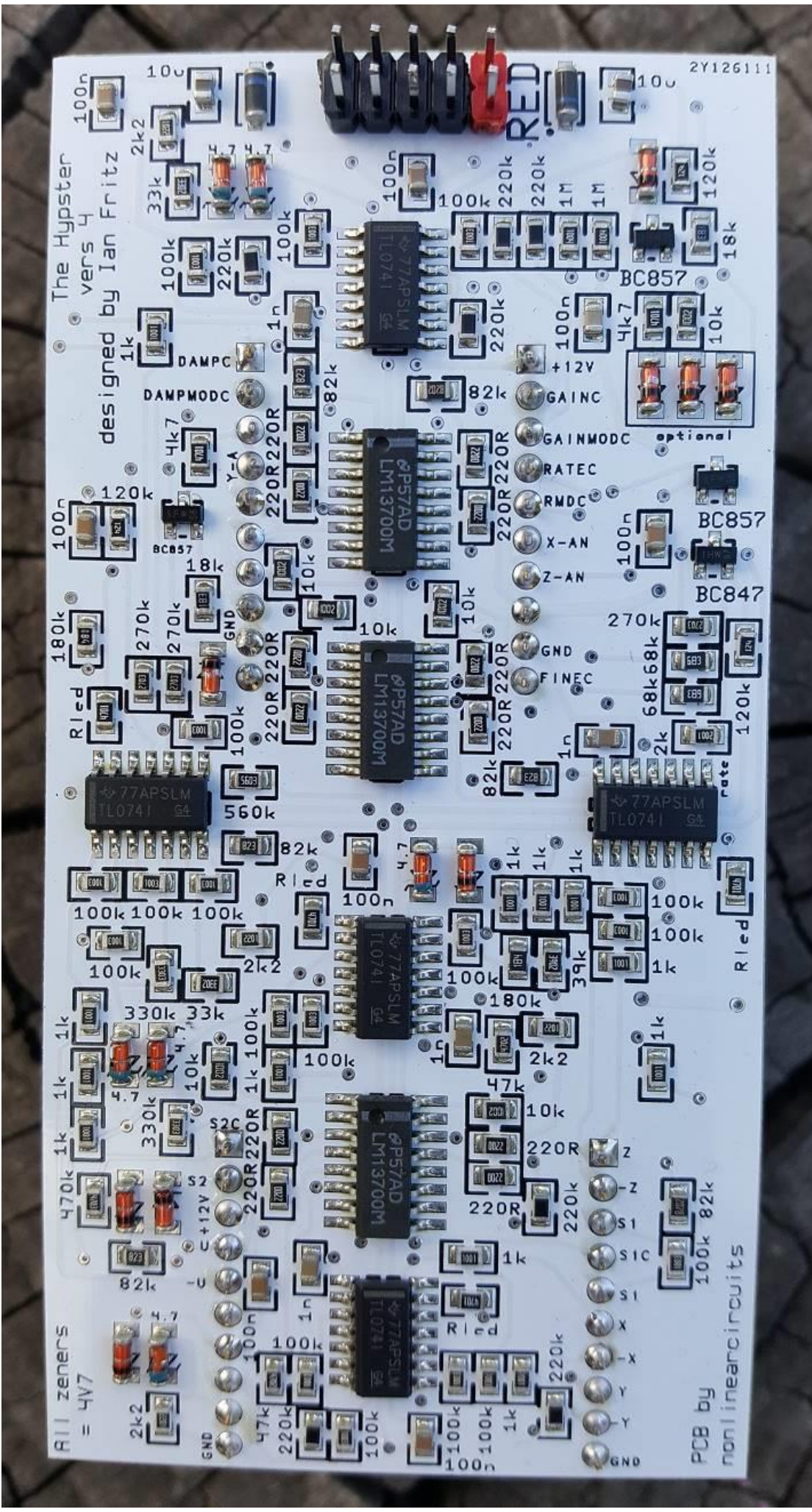




The Hypster
vers 4
designed by Ian Fritz

All zeners
= 4V7

PCB by
nonlinearcircuits



RED

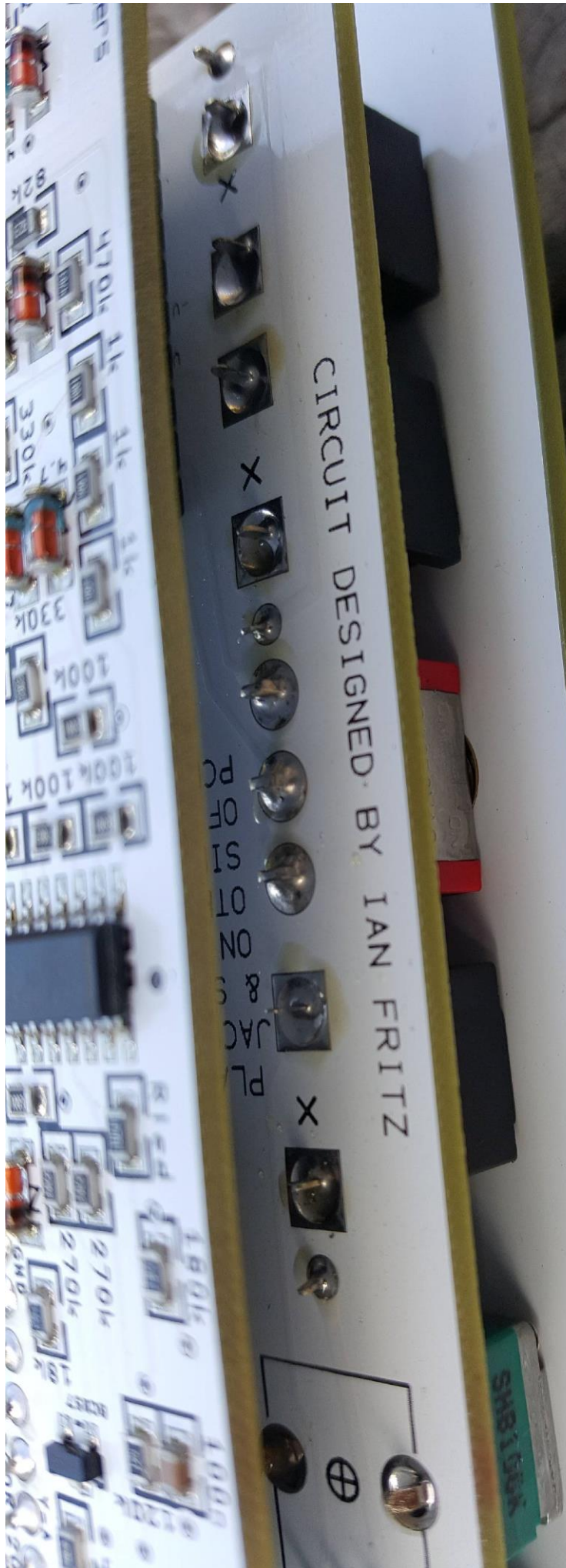
2Y126111

The Hypster
vers 4
designed by Ian Fritz

All zeners
= 4V7

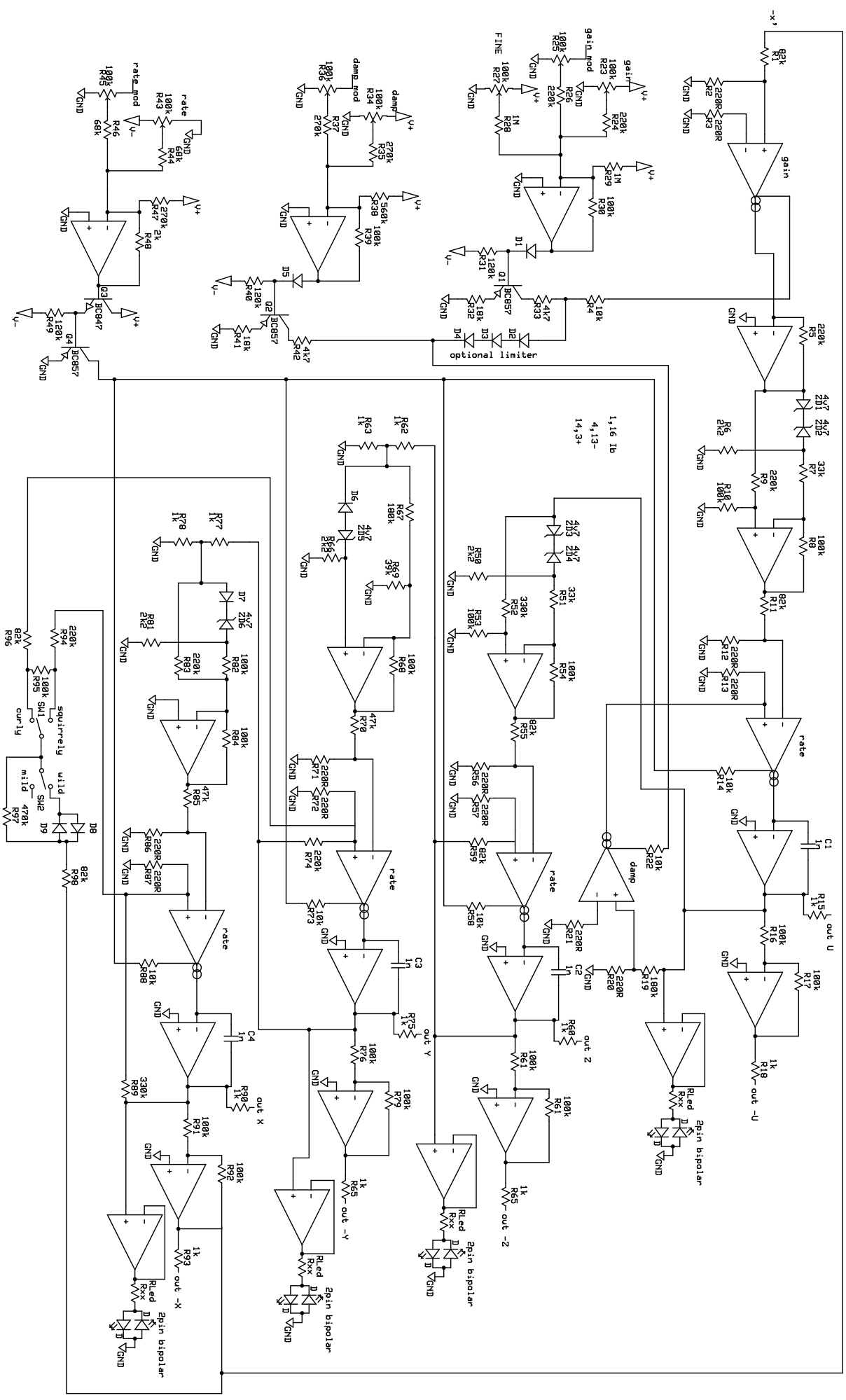
PCB by
nonlinearcircuits

CIRCUIT DESIGNED BY IAN FRITZ



SMB1594

82K
470K 1%
330K
330K
100K
100K 100K
100K 100K
PC
OF
SI
OT
ON
& 9
JAC
PL
R 1-4
180K
270K
270K
100
100



nonlinearcircuits

The Hypster v1