

# nonlinearcircuits

## Hyperchaos DELUXE

### Build and BOM

Hyperchaos Deluxe is based on the description in A UNIQUE SIGNUM SWITCH FOR CHAOS AND HYPERCHAOS by C. Li et al and is an expansion of the circuit used in Primal Hyperchaos.

There are 10 different CV outputs and 2 gate outputs. The CV IN is associated with the CLIMAX pot which determines how high the peaks go. The module can be greatly influenced by the CV in signal and can exhibit some fairly nutty responses at times. The Rate input can be used in a few different ways:

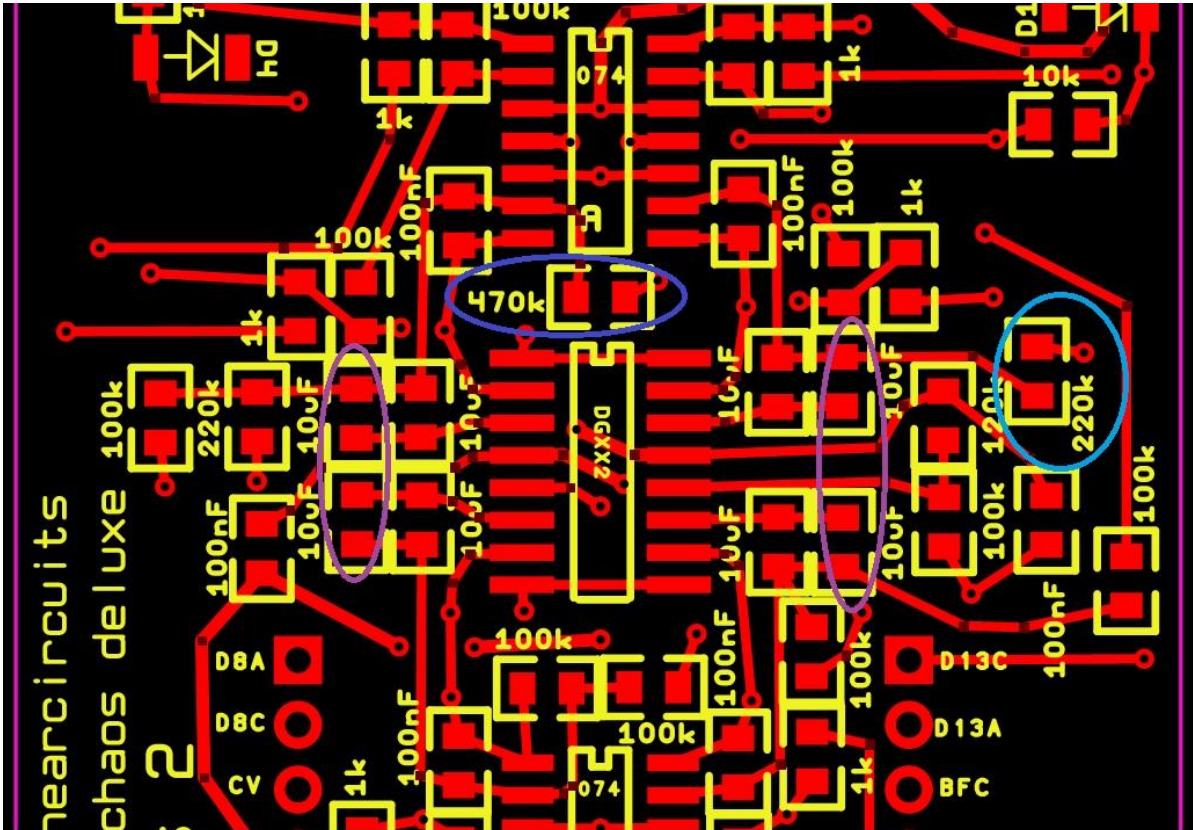
1. With nothing patched in the circuit operates in slow mode or fast mode depending on the DG chip used; DGxx2 = slow, DGxx1 = fast
2. With a cable patched in, but its other end hanging loose, the circuit operates in the opposite mode.
3. Feed a gate signal to the Rate input and the circuit will vary between fast and slow modes.
4. Feed a fast clock signal and you can get the circuit to operate at different speeds. This is quite dependent upon the frequency of the incoming clock and can take some tweaking to get right. If the clock is too fast it will mainly appear to be in slow mode.

### BOM

component	quantity	notes
1M pot	2	Tayda A-1882
100k pot	1	Tayda A-1848
3.5mm jack	14	Kobiconn style, get from Modular Addict or Thonk or Tayda A-865
3mm LED	8	note – 3mm
LL4148 diodes	11	Mouser 512-LL4148
TL074	4	SOIC Tayda A-1137
TL072	1	SOIC Tayda: A-1136
DG202 or DG212 (default slow mode), DG201 or DG211 (default fast mode)	1	marked DGxx2 on PCB
S1JL or similar	2	Mouser 821-S1JL, dot=cathode
Eurorack power connector	1	Tayda A-198
10uF	6 (or 10)	0805, 25V or higher voltage rating <b>SEE NOTES #2</b>
100nF	9	0805
1k	12	0805
2k2	2	0805
10k	11	0805
100k	21	0805
120k	1	0805
220k	2	0805
470k	1	0805
1M	2	0805
10 Pin 2.54mm Single Row Pin Header Strip	4	Tayda: A-197
10 Pin 2.54mm Single Row Female Pin Header	4	Tayda: A-1306

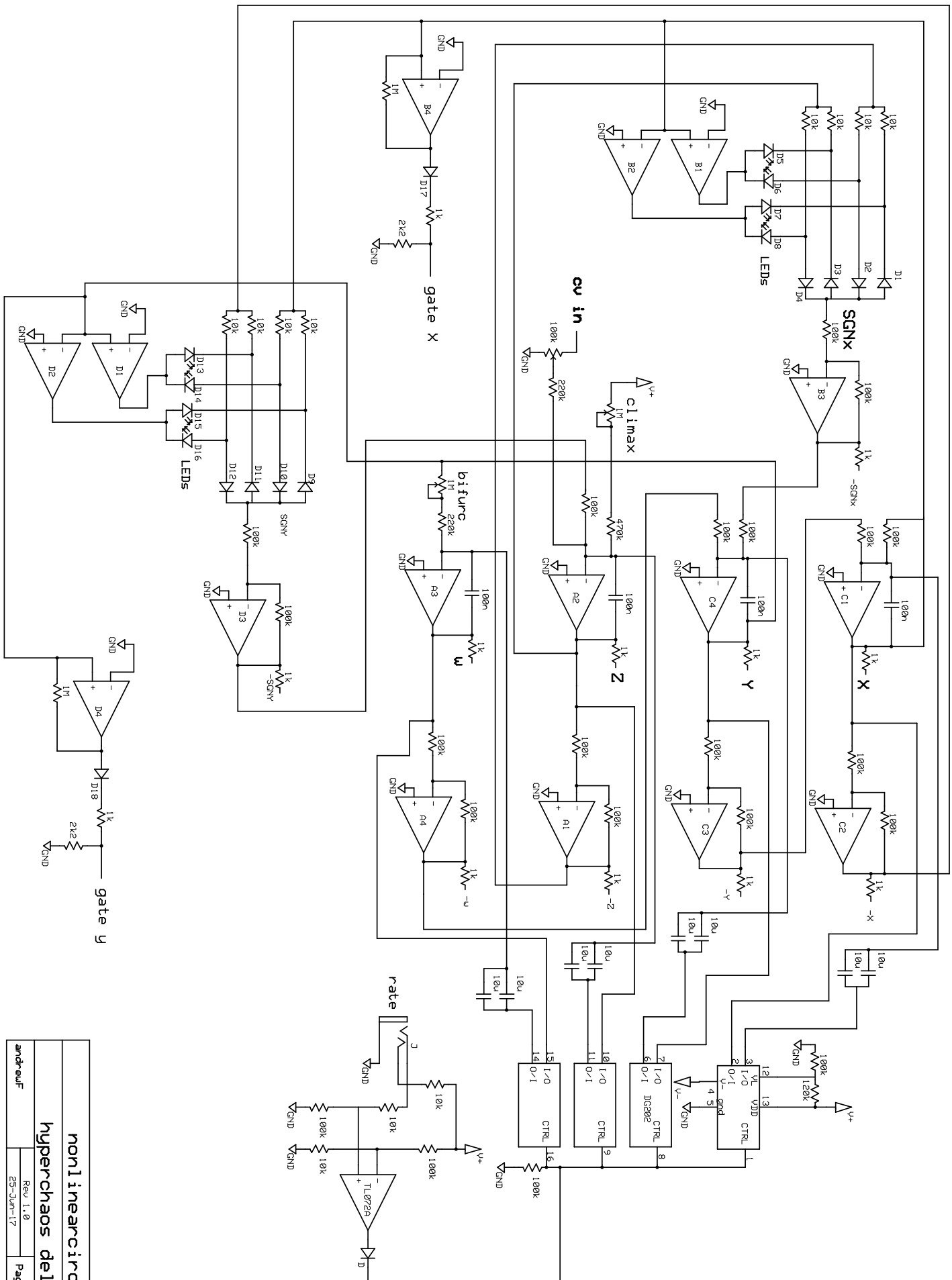
## notes

1. Probably all the LEDs should be the same feel free to experiment tho. It might get even stranger.
2. There are pads for placing the 10uF caps in parallel to get 20uF and obtain a much slower function. I found the outputs have much greater swings and can hit the rails more often. It doesn't hurt anything but is kinda boring too. If you really want 20uF speeds you may want to experiment with resistor sizes to tame the outputs. I suggest starting by changing the 470k connected to the Climax pot to 1M and the 220k connected to the Bifurcation pot to 470k.

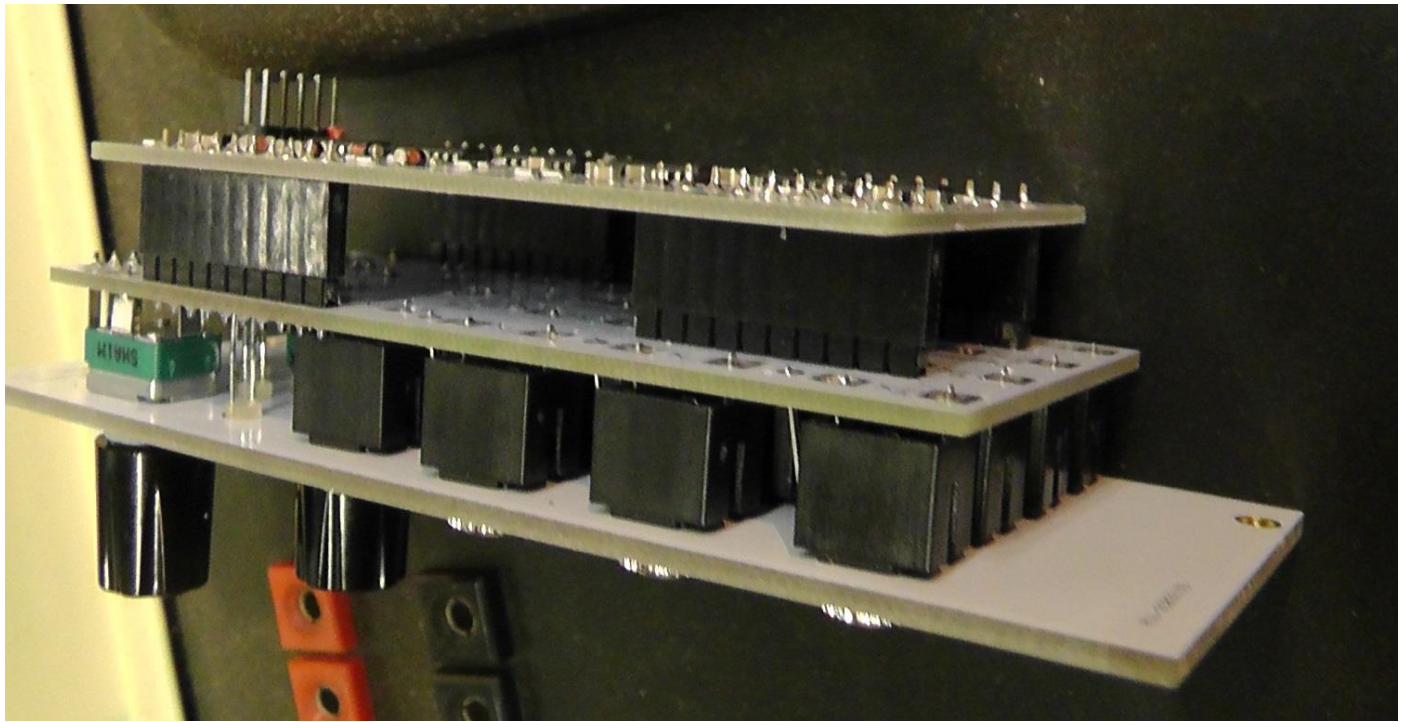


leave off  
4x 10uF  
circled for  
10uF  
version.  
Install for  
20uF  
version

The 470k and 220k resistors that MAY need changing in the 20uF version are circled in blue.



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<b>hyperchaos deluxe v1</b>	
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vers 2

RED

GATE Y      GATE X      SGN(Y)      SGN(X)

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