nonlinearcircuits

FROLIC build & BOM

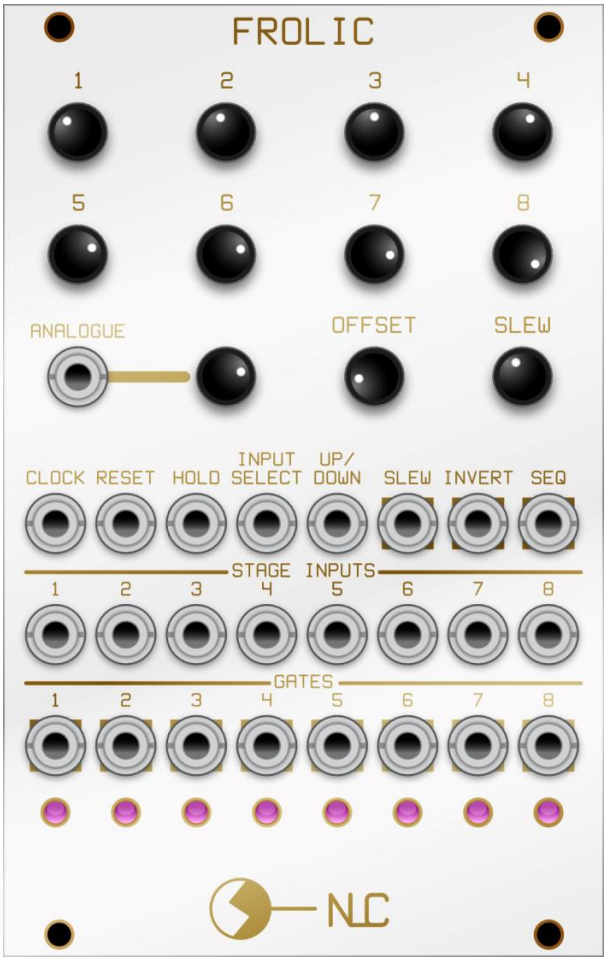
This module is an 8 stage sequencer/sequential switch. The stages can be controlled by CV or by gates and triggers or both.

The analogue (CV) input does need some setting up and there are 2 pots for doing this. The one connected to the analogue input jack is an attenuator. For a typical 5V range CV signal, you would probably set it around the mid-point; the input is sensitive to lower amplitude signals (such as some of the outputs from the Sloth modules). The 2nd pot is to give a positive offset to the incoming CV. Most LFO signals range over +/-5V, so this pot will adjust the signal to make it range from 0-10V, and then you would wind back the attenuator to get a nice motion between stages 1 and 8. It is a lot of fun feeding in complex signals, such as two LFO Tri waves mixed. For a Knightrider KIT effect, use a triangle wave and think about the wonderful things the Hoff has done over the years.

An important point – when using the clock input, the offset pot must be wound back to 0 or have a cable patched into the Input Select jack.

For regular sequencer functions, there are the clock, reset, hold & up/down inputs. There is also an input select jack, a high signal enables the analogue input, a low signal enables the clock input.

If nothing is patched into the stage inputs, the outputs will be a voltage for that stage, set by the corresponding pot. If you patch in a signal, the corresponding pot becomes an attenuator for that signal.



BOM – The Tayda & Mouser part numbers are given as examples

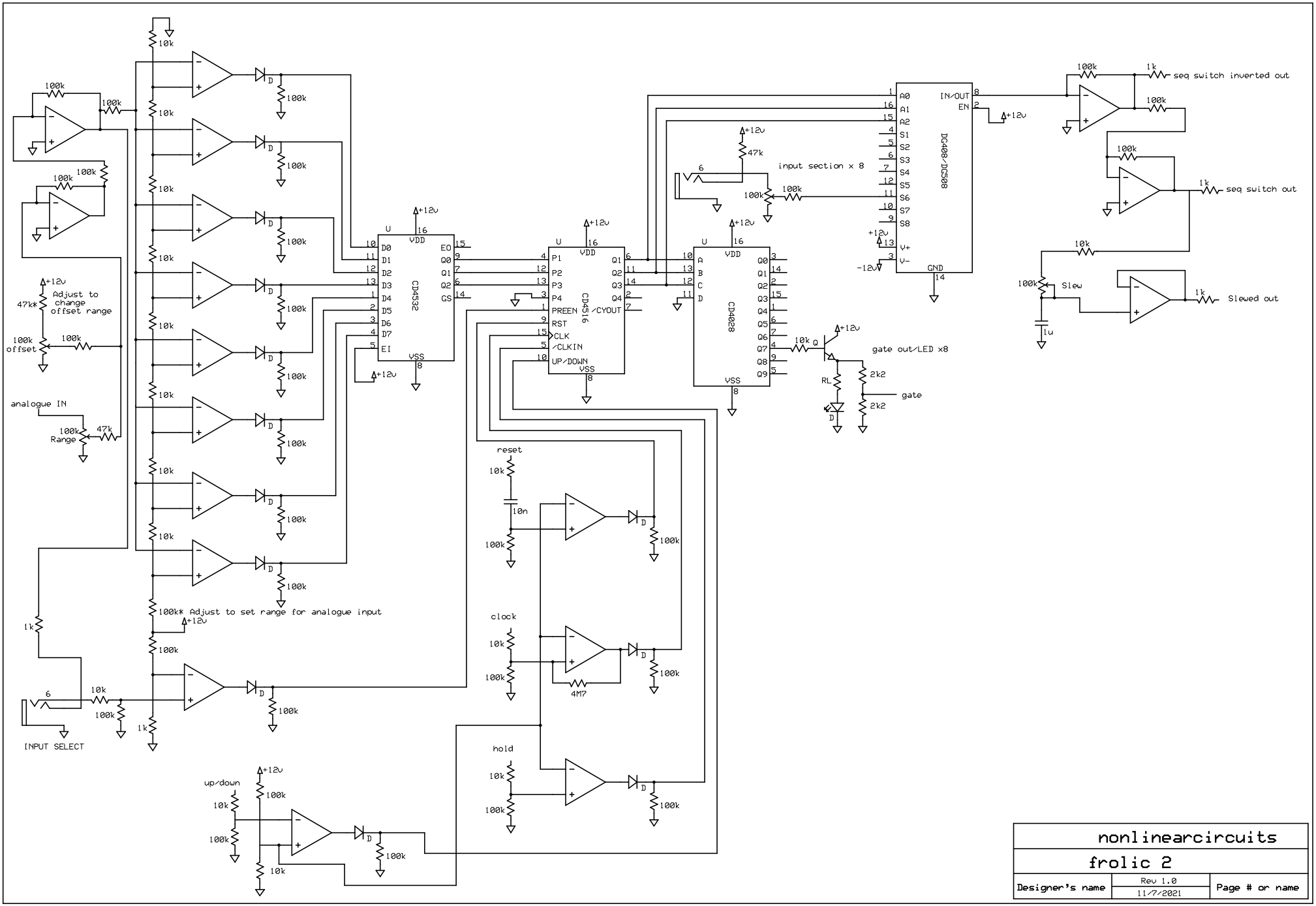
VALUE	QUANTITY	DETAILS
10n	1	0805
100n	12	0805
1uF	1	0805
10uF	2	0805 25V or higher voltage rating Mouser:963-TMK212BBJ106MG-T or similar
1k	5	0805
2k2	16	0805
10k	23	0805
47k	10	0805
100k	37	0805
4M7	1	0805
RL	8	0805 select resistor to suit LED brightness (prob 4k7 to 10)
TL072 or TL082	1	Soic Tayda: A-1139
TL074 or TL084	4	Soic Tayda: A-1140 or A-1137
CD4516	1	Mouser: 595-CD4516BNSR
CD4028 or HEF4028	1	Mouser: 595-CD4028BM96 or 595-CD4028BNSR (wide soic but just fits) or 771-HEF4028BTD-T
CD4532	1	Mouser: 595-CD4532BM96 or 595-CD4532BMG4 or 595-CD4532BM
DG408 or DG508	1	Mouser: 781-DG508BEY-E3 is cheapest at Mouser and plenty in stock. Do not get anything with 'L' in the name, even tho cheaper it will not work
LL4148	13	sod-80 Tayda: A-1213
BC847	8	SOT23-3 Tayda: A-1339
3mm LEDs	8	Up to you, diffused lens are easier on the eyes.
Eurorack 10 pin power connector	1	Tayda: A-198 cut to size
S1JL, Schottky, power rectifier or 10R	2	SMD SEE NOTES #1. **dot on PCB indicates CATHODE (stripe on component).**
3.5MM SOCKET Kobiconn style	25	Tayda: A-865 or Thonkiconn Jacks (PJ301M-12) from Thonk, Synthcube or Modular Addict
100k pot	11	Linear Taper Potentiometer Spline Shaft PCB Mount 9mm Tayda: A-4729
10 pin header	5	get two 40 pin strips and cut off as needed Tayda: A-197
10 Pin 2.54mm Single Row Female Pin Header	5	Tayda: A-1306

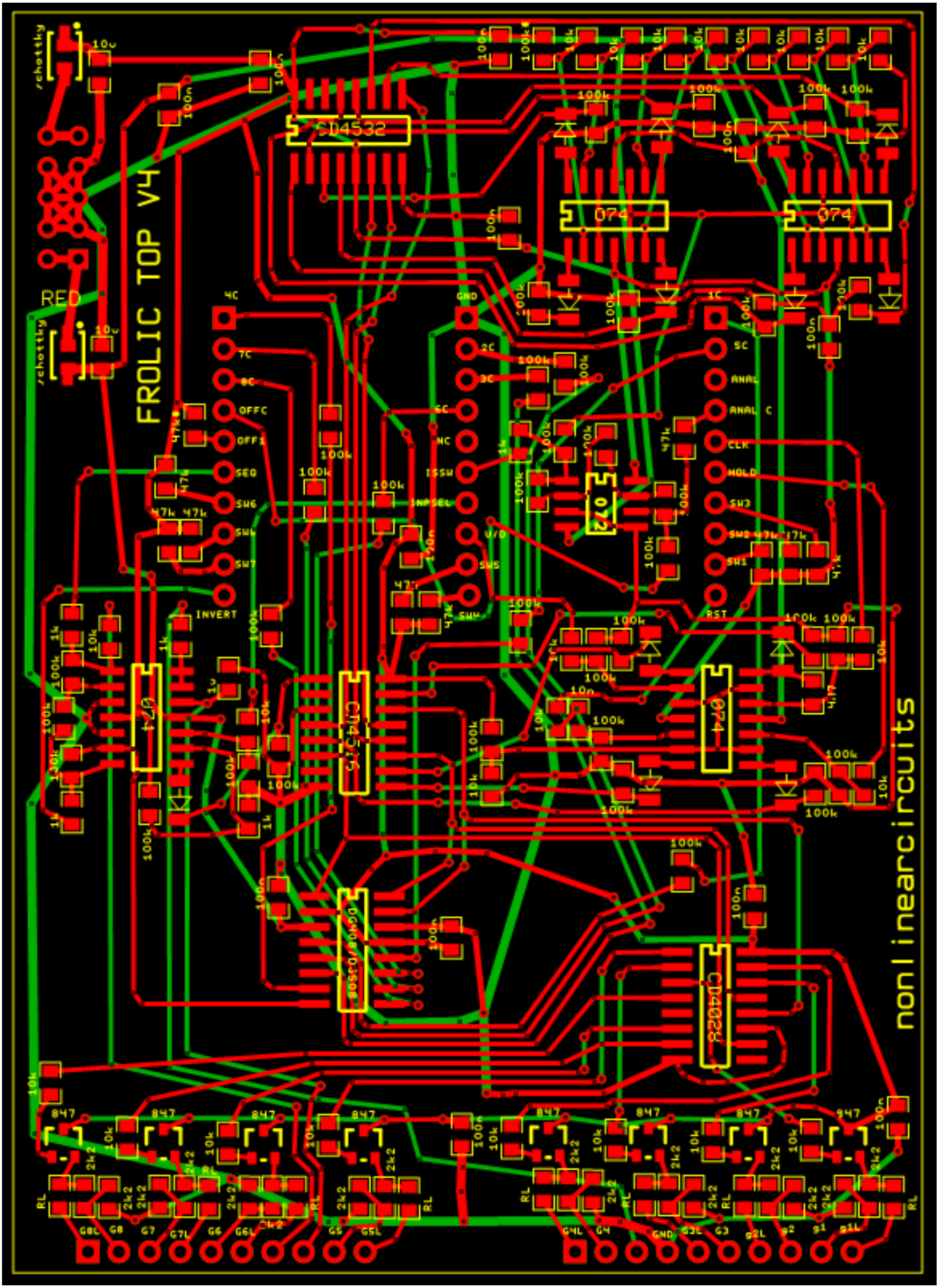
Additional notes:

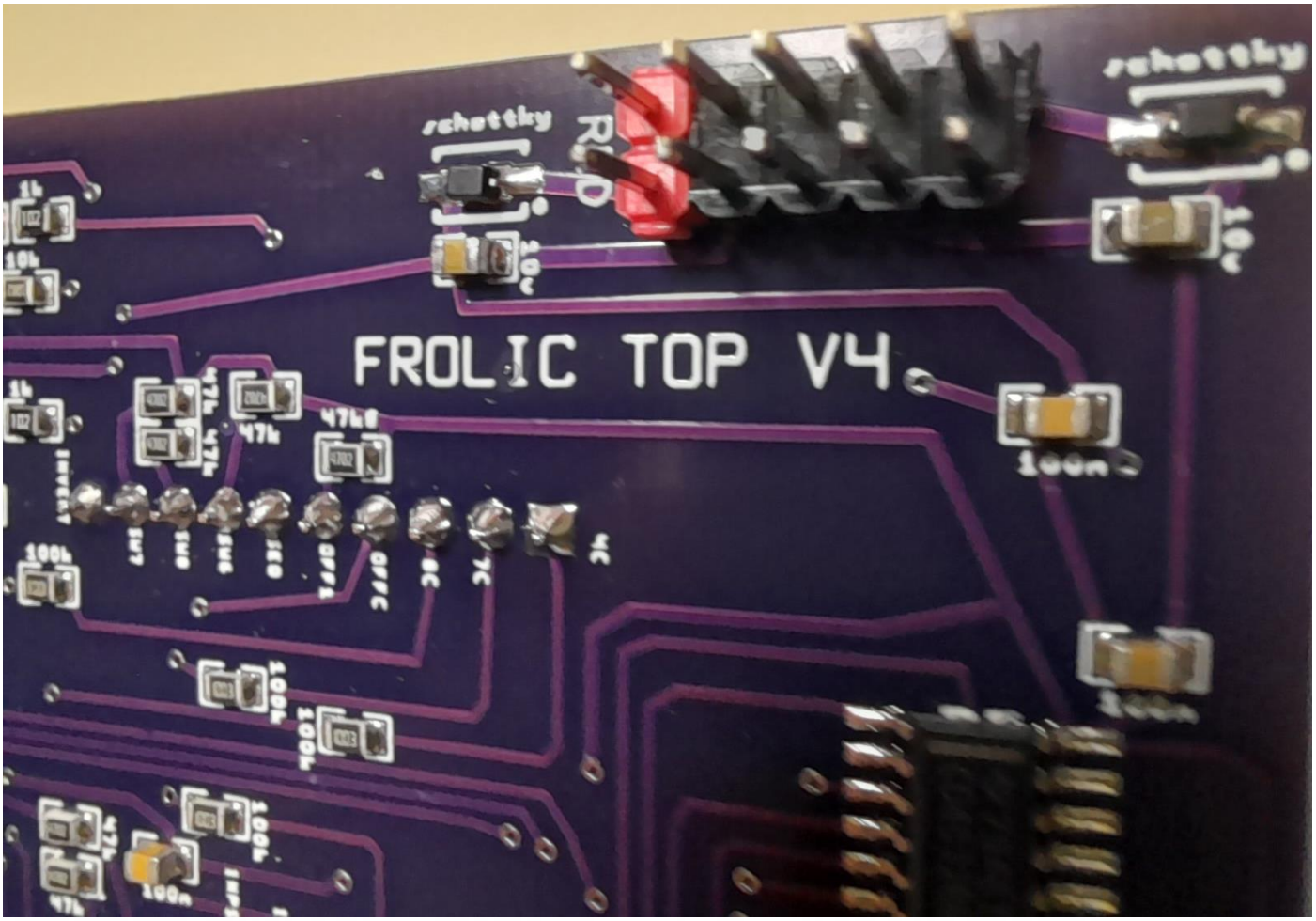
1. , Schottky (best option) **or** standard power rectifier diode 50-600V 1A or more, **or** use a resettable fuse **or** just a 10R. Examples: BAT54GWX, PMEG2005EGWX, AEC-Q101, 20V, SOD-123, PMEG2005EH DIODE, SCHOTTKY, 0.5A, 20V, 1N400x or S1JL or similar.

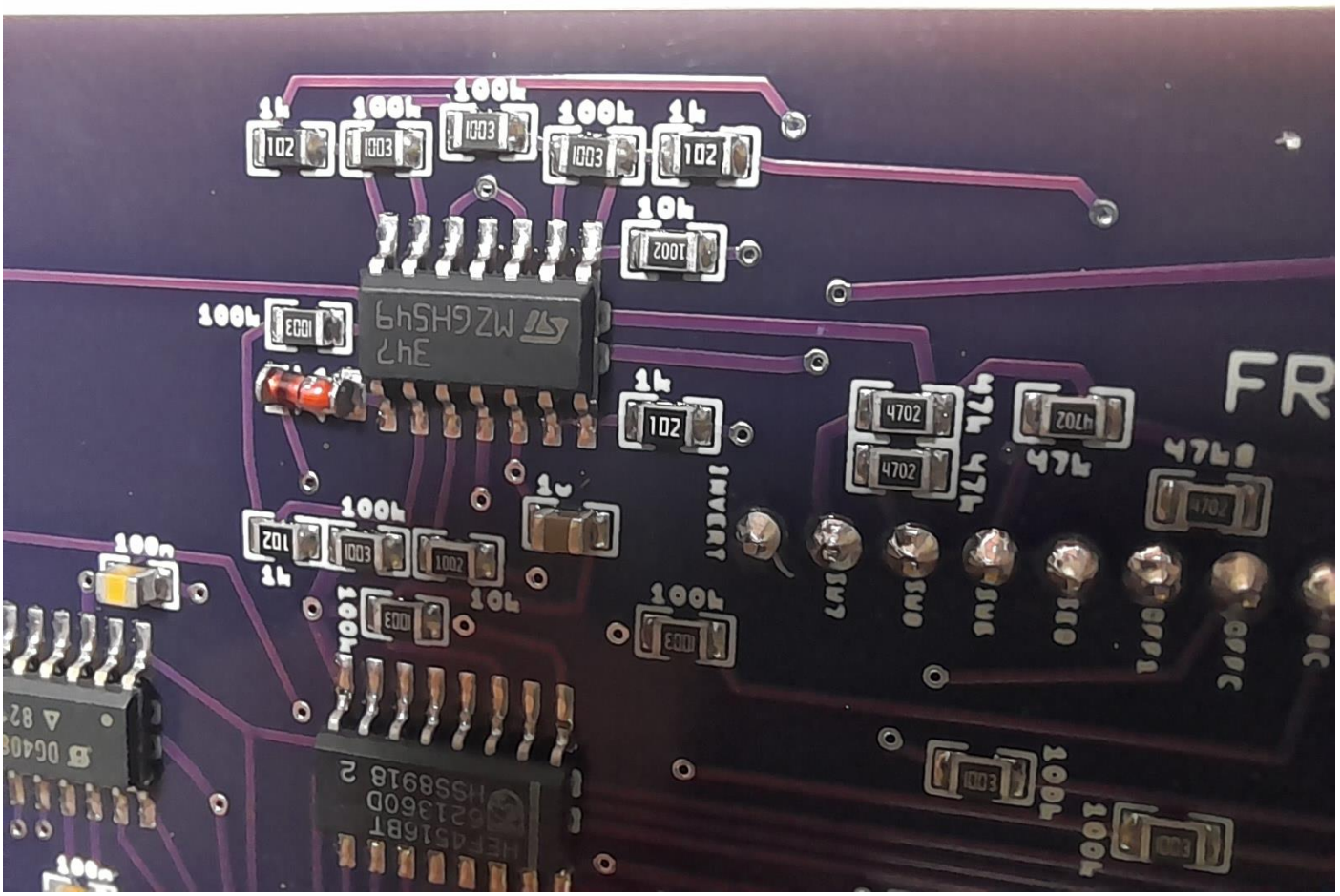
2. The chips, resistors, caps are cheapest from Tayda. Schottky diodes, CMOS & 1uF, 10uF 25V 0805 caps from Mouser/E14/Farnell/etc.

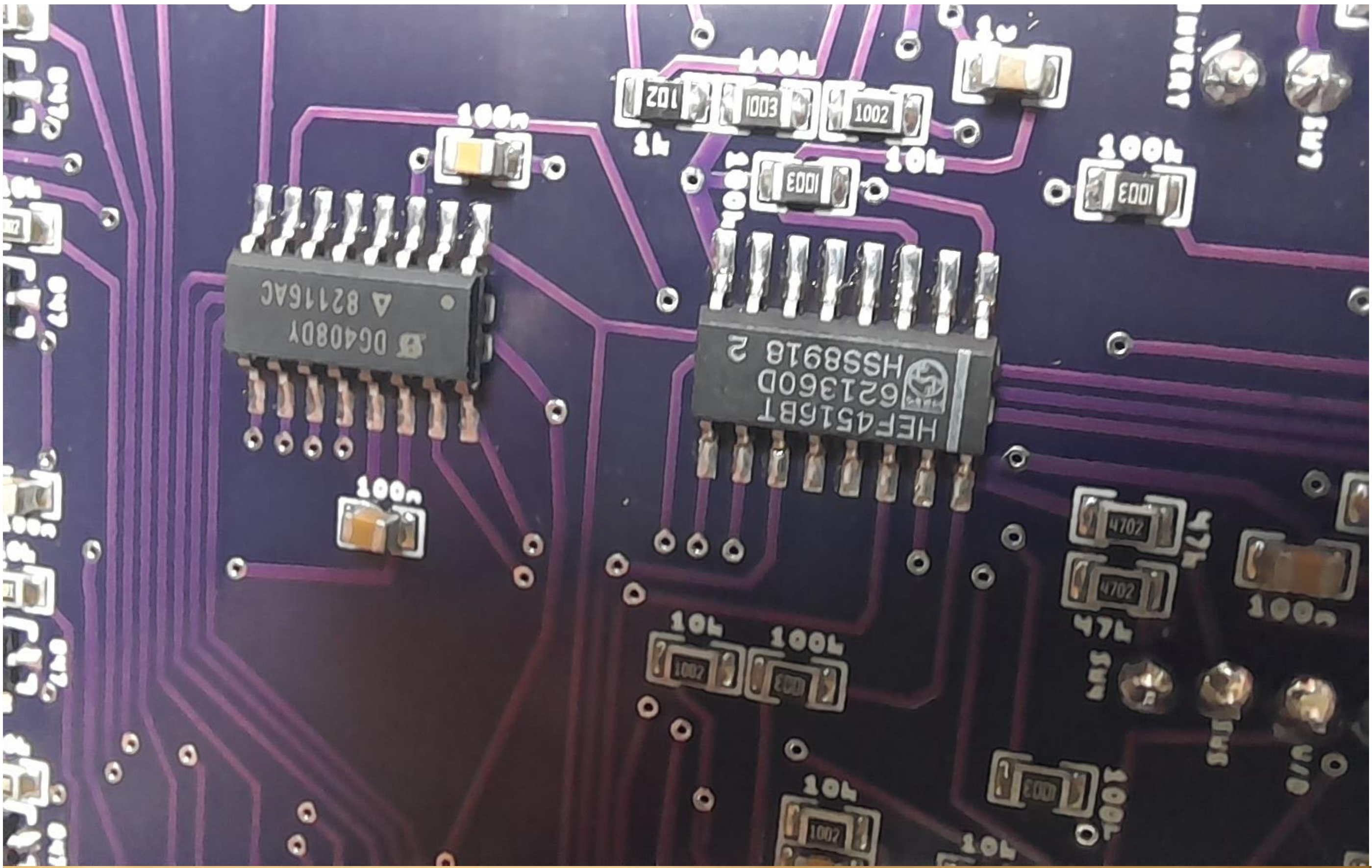
3. Join the Nonlinearcircuits Builders Guild on FB: https://www.facebook.com/groups/174583056349286/ and ask questions there if you have any. If you prefer not to FB then email is fine.

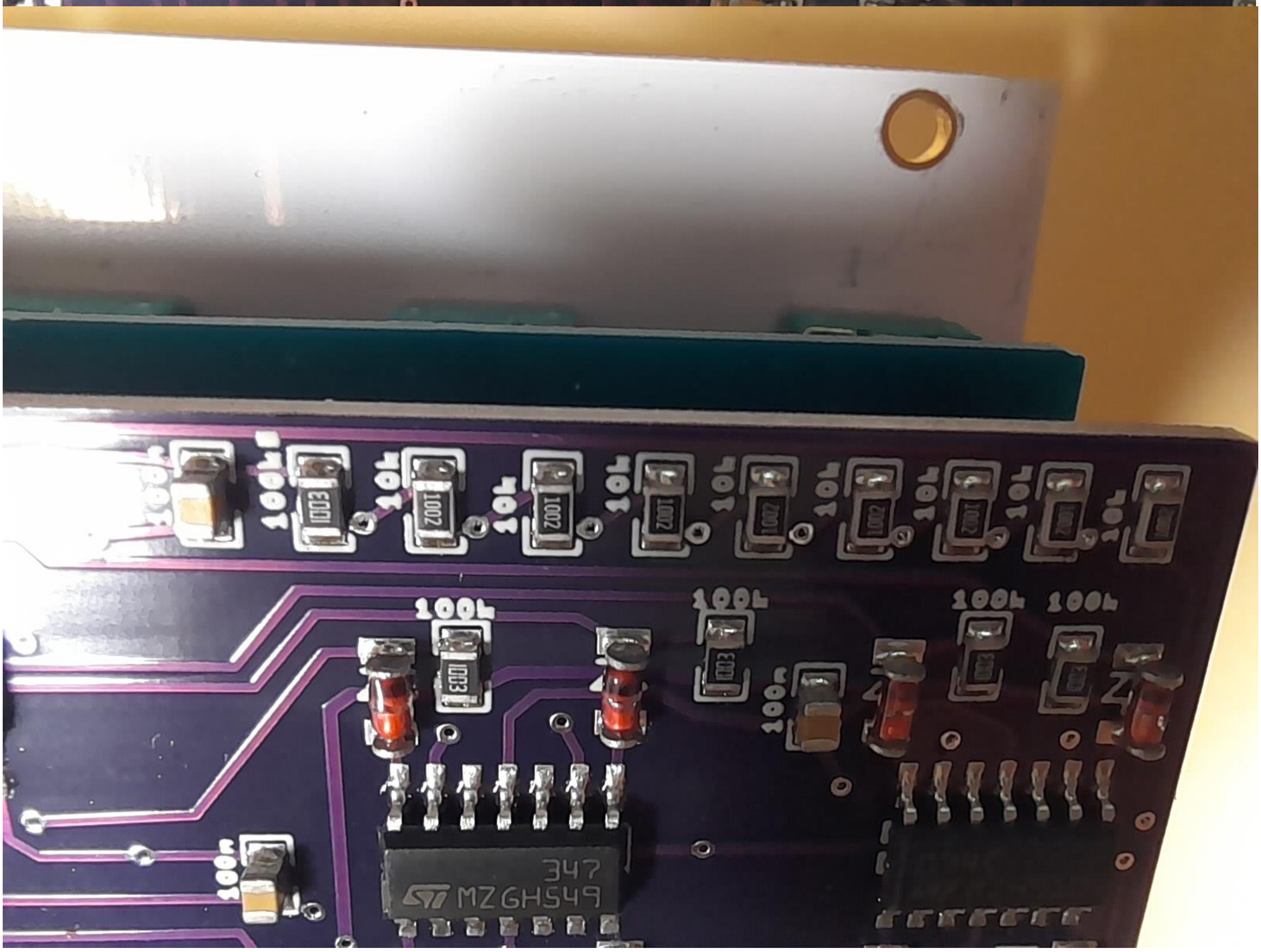

Adjust to change offset range
analogue IN
Range
100k* Adjust to set range for analogue input
INPUT SELECT
up/down
reset
clock
hold
CD4532
CD4516
CD4028
DG408/DG508
input section x 8
gate out/LED x8
gate
seq switch inverted out
seq switch out
Slew
Slewed out
nonlinearcircuits
frolic 2
Designer's name
Rev 1.0
11/7/2021
Page # or name

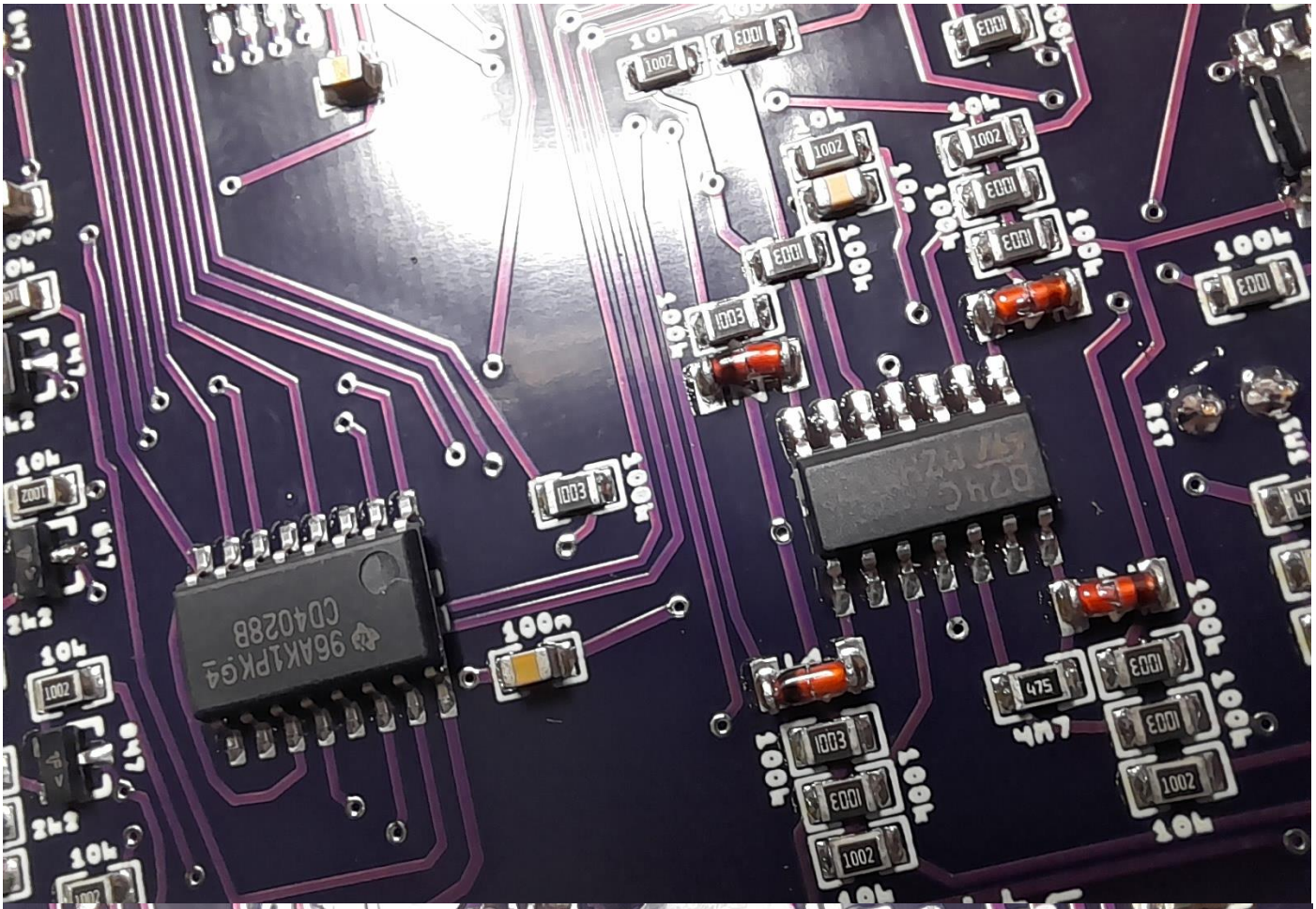

FROLIC TOP V4
RED
schottky
CD4532
074
INVERT
nonlinearcircuits

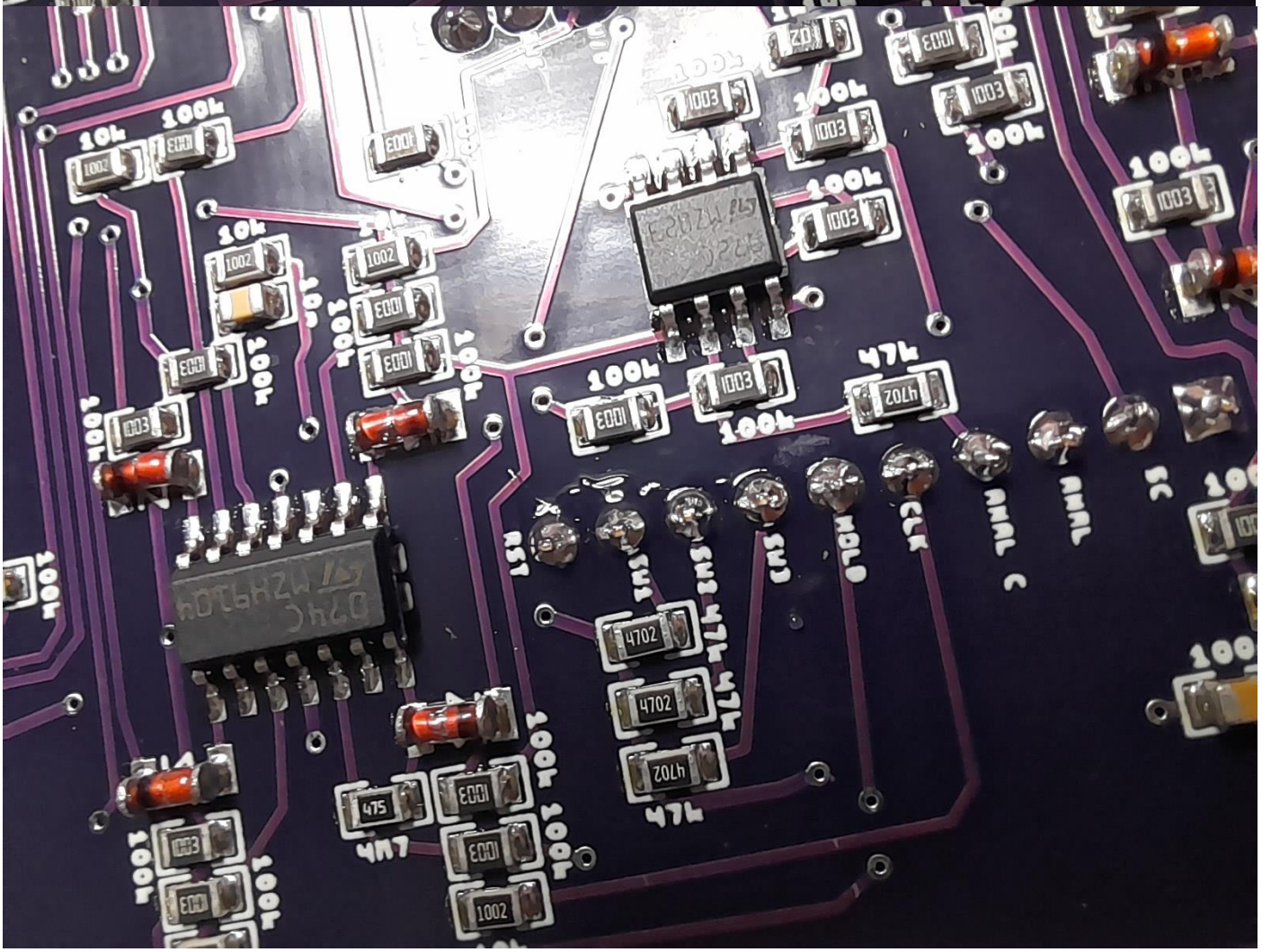

FROLIC TOP V4
schottky
schottky

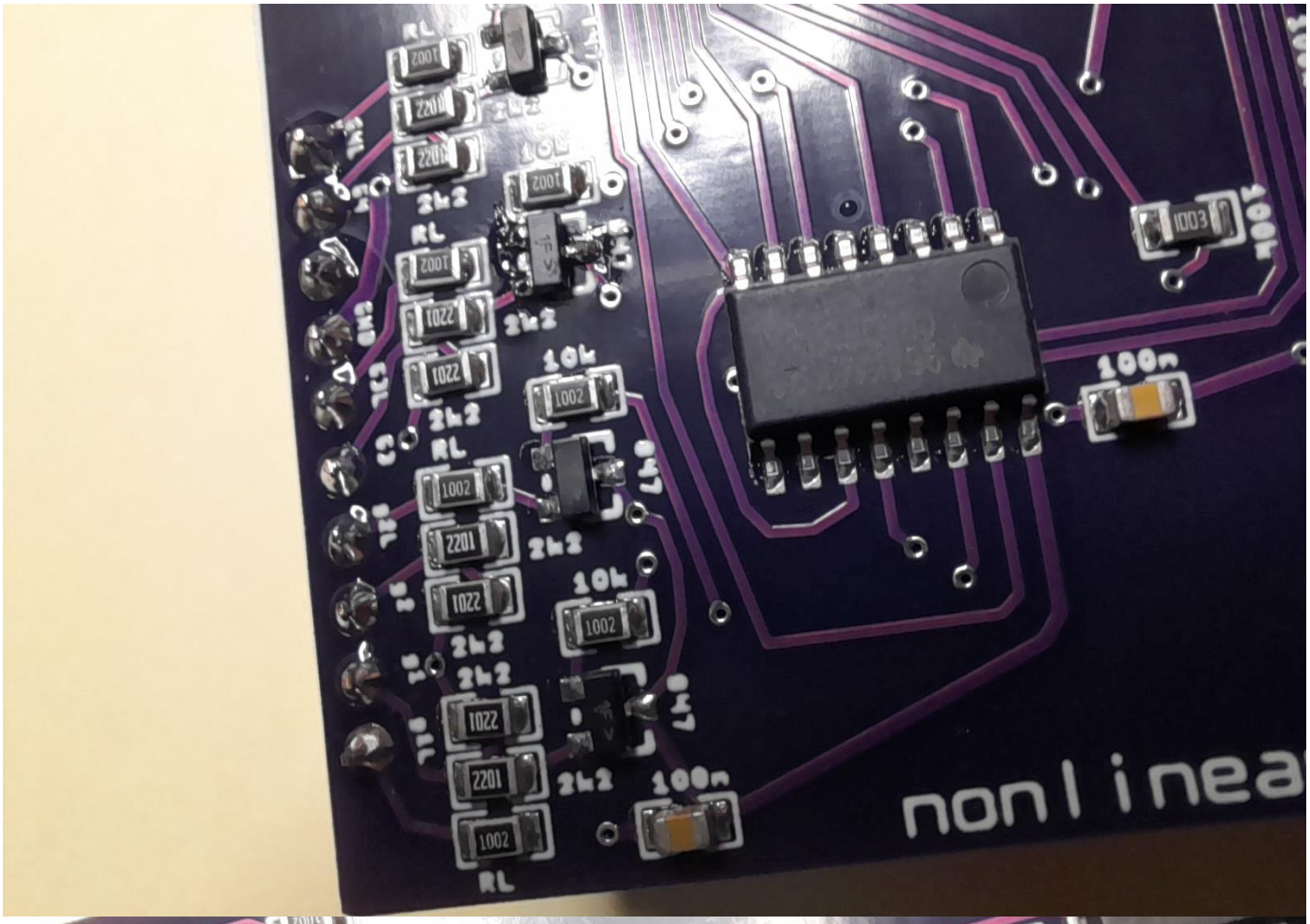


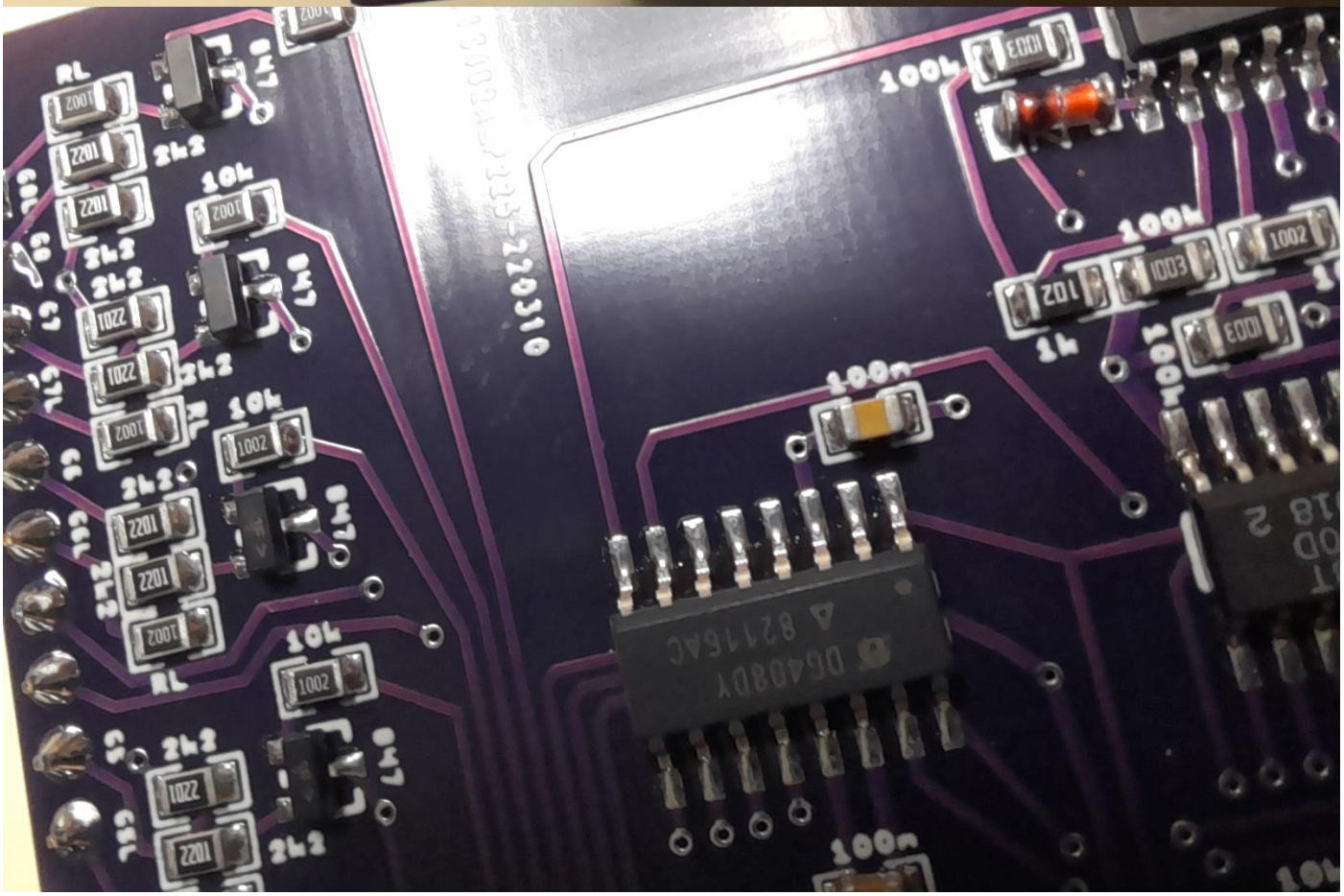

DG408DY
82116AC
HEF4516BT
621360D
HSS8918
100n
100k
10k
47k
1002
1003
4702

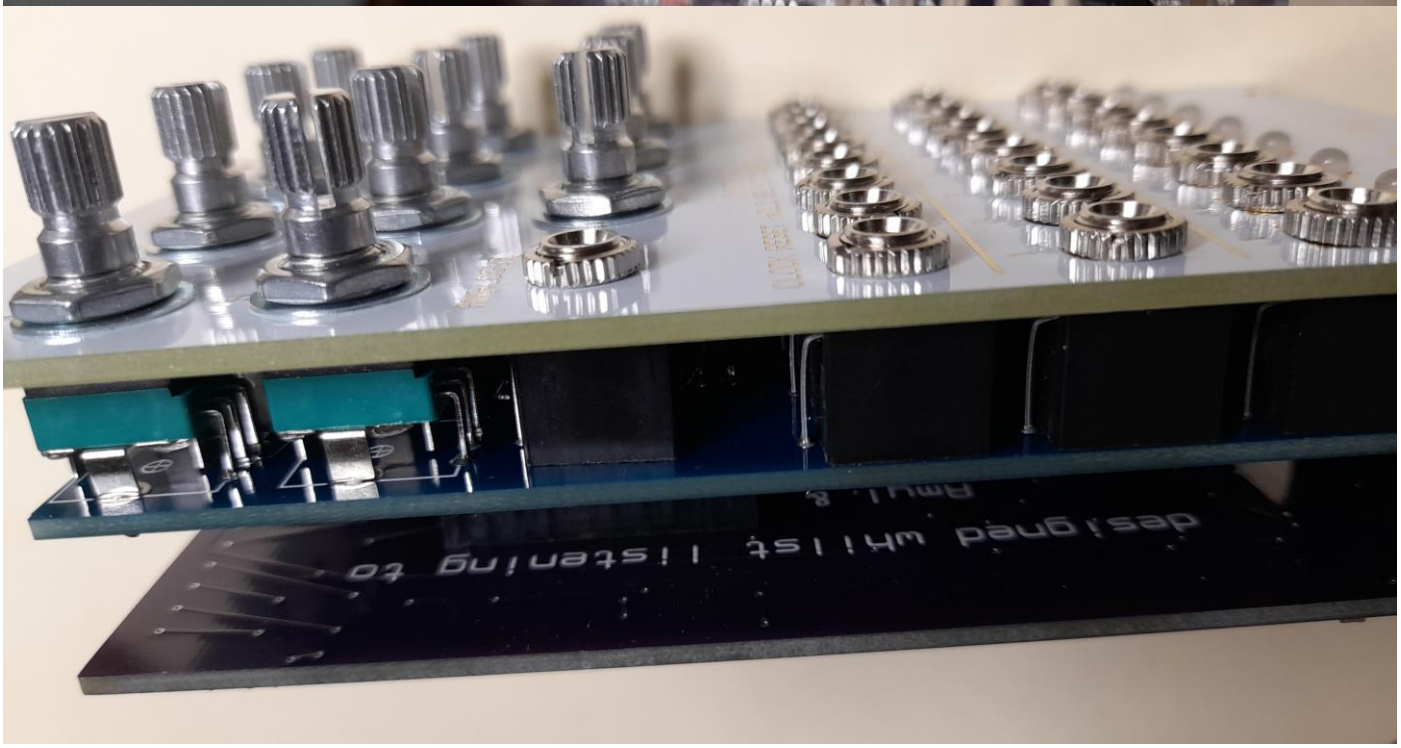

347
MZGH549
100k
10k
100n
1002
1003

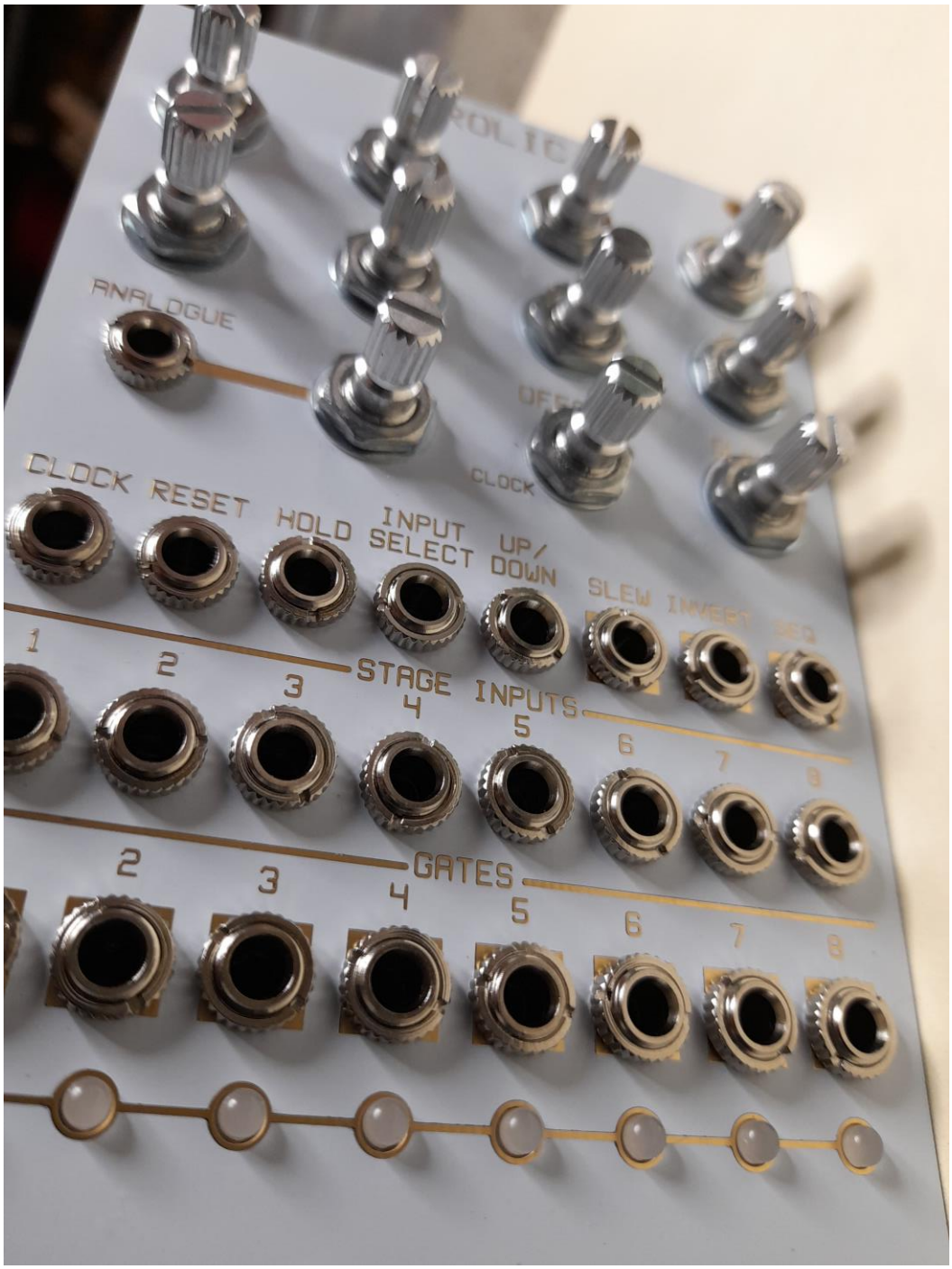

96AK1PK Q4
CD4028B
1002
1003
100n
100k
10k
2k2
475
4u7


1003
100k
10k
1002
4702
474
100n
RST
SW1
SW2
SW3
HOLD
CLK
DATA
SC


nonlinea




designed whilst listening to


ANALOGUE
CLOCK
CLOCK RESET HOLD INPUT SELECT UP/ DOWN
SLEW INVERT SEQ
1 2 3 4 5 6 7 8
STAGE INPUTS
2 3 4 5 6 7 8
GATES