

nonlinearcircuits

MORE build & BOM

This module contains three individual cowbell circuits based on those in the TR-808. The main differences are pots on the panel to alter the frequencies and input jacks to patch in external signals to replace oscillator #2 of each circuit.

Originally this module was just a joke and never intended for release, but people kept asking when it will be available and it actually sounds quite good. So here you go.

The PCB is quite dense, probably not an easy build for beginners at soldering.

The accent input is tied to the trigger input via the switch tab, probably best to use a gate rather than a trigger to get the sound going, but that depends on what you want to do. Otherwise patch whatever you like to make things happen.

The filters are fixed as per the original design. This means the output is loudest when the oscillators are set close to the operating frequency range of the filters and softer when the oscillators are at much higher or lower settings. For me, this seems fine, but mess with the filter values if you like. I have seen some mods of the 2k2 to ground resistor varied to change the filter range. In proto-typing, this was experimented with but I didn't feel it was much improvement.

The frequency range of the oscillators can be changed by using a different capacitor than 47n. For a lower range, try 100n, higher; try 22n-33n.

One thing to note, the thru-hole 78L05 regulator is at the top of the PCB. It would be best to install it as close to the PCB as possible, so the legs are not exposed. Also, when installing or removing the module from the case, turn off the power, just in case the regulator is accidentally shorted against the mounting rails. I'm sure everybody turns off the power when installing and removing modules anyway, so I don't really need to say this 😊



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

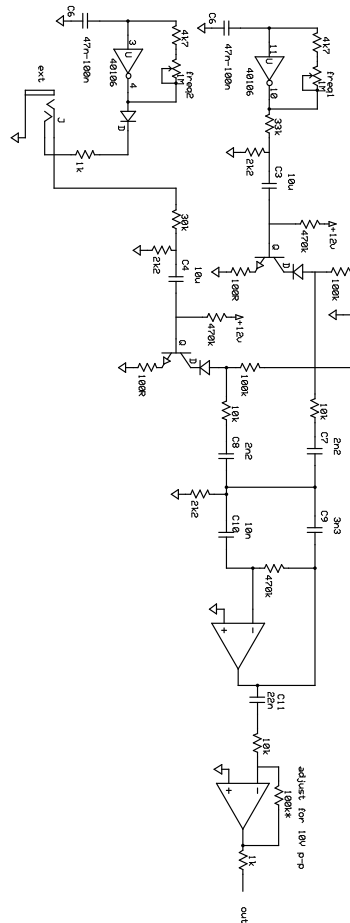
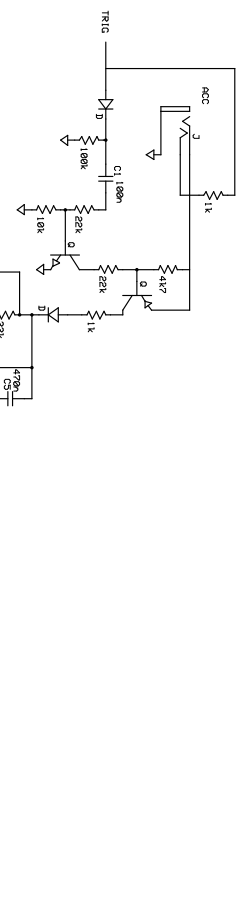
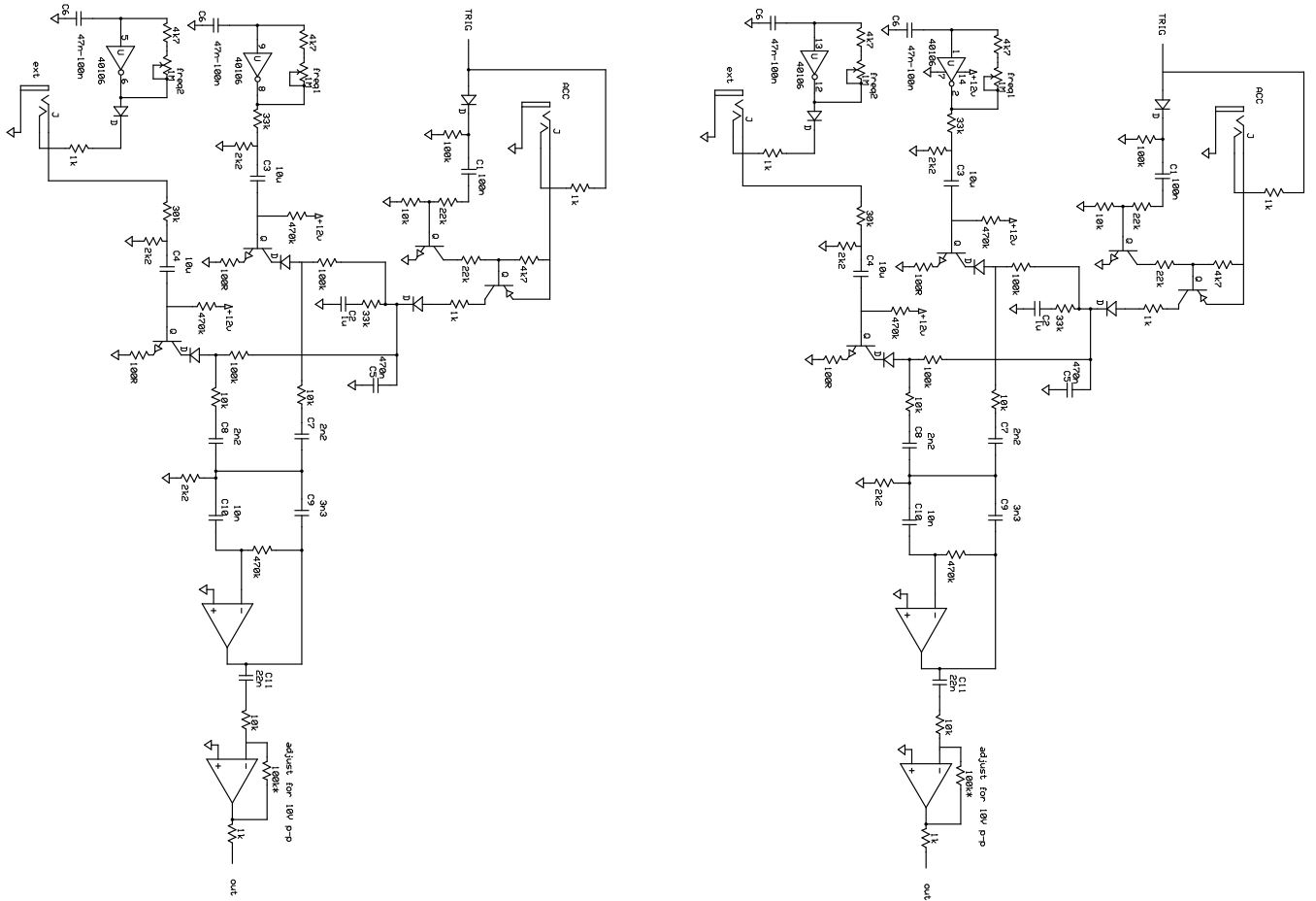
VALUE	QUANTITY	DETAILS
2n2	6	0805
3n3	3	0805
10n	3	0805
22n	3	0805
47n	6	0805
100n	7	0805
470n	3	0805
1u	3	0805
10uF	8	0805 25V or higher voltage rating
100R	6	0805
1k	12	0805
2k2	9	0805
4k7	9	0805
10k	12	0805
22k	6	0805
30k	3	0805
33k	6	0805
100k	12	0805
470k	9	0805
TL072 or TL082	3	Soic Tayda: A-1139
CD40106 or HEF40106	1	soic-14
LL4148	15	Tayda: A-1213
BC857	3	Tayda: A-1345
BC847	9	Tayda: A-1339
78L05	1	thru-hole Tayda: A-176
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	12	Tayda: A-2563 or Thonkiconn Jacks (PJ301M-12) from Thonk, Synthcube or Modular Addict aka PJ-3001F 3.5mm Mono Phone Jack
1M pot	6	Tayda: A-6835 or similar

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. Tayda have introduced a sod-323 Schottky Diode 30V 200mA (A-6786), which will be ok.

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.



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78L05 regulator, decoupling caps and schottky diodes not shown in schematic

