

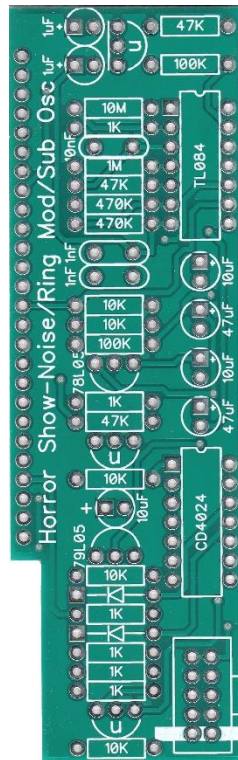
FREQUENCY CENTRAL

Build documentation for:

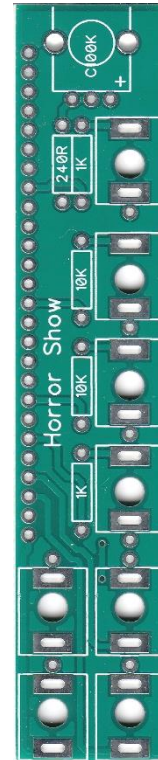
HORROR SHOW

Noise generator/digital ring mod/sub oscillator.

Main PCB



Control PCB



Horror Show is a 4HP combined noise generator/digital ring mod/sub oscillator. Here's a few of it's features:

- Noise generator with filter frequency control. Filter is twin-t type. The noise output is normalised to RM X Input and also to the Sub Osc Input, so that 5 types of noise are simultaneously available, all of which can be further affected by twisting the filter frequency knob.
- Digital ring modulator. Comparator based. May also be used as a pulse width modulator by patching in any audio waveform and any controller waveform.
- Sub oscillator with 3 simultaneous outputs: -1 square, -2 square, -2 pulse. May also be used as a clock divider.

Tricks to try:

- With noise normalised to RM X Input, try applying a fixed voltage source to RM Y Input. Start at 0V and add positive (or negative) voltage, you will hear the RM Out gradually break up from noise into static.
- As above, but patch the RM Out to the gate input of an envelope generator set to a short attack for random triggers. The further the fixed voltage from 0V, the less chance of a trigger at the output.

- The two example above also work with a slow LFO instead of a fixed voltage, causing fades from noise to static, or from certain triggers (!) to random triggers.
- Patch the noise output to the sub osc input via an attenuator (passive or active). Three type of digital noise are available at the three sub osc outputs, and you can use the attenuator to fade between noise and three types of static and/or random triggers which are temporally related. Pretty esoteric, but I'm sure someone somewhere will base an entire genre around this feature.

Key to PCB screen print:

p: This signifies NPN BC547 transistors. Note the correct pinout as shown by the half circles.

The PCB shows the correct orientation for BC547. Other similar transistor types can be used, but please observe the correct pinout.

Please observe the correct polarity of the electrolytic capacitors and diodes.

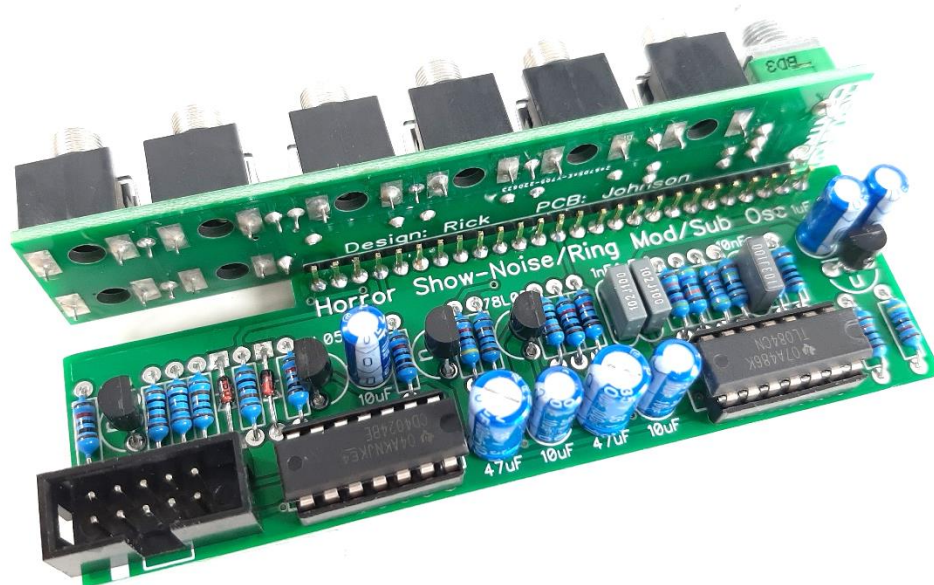
You will notice that all of the components listed below are also hyperlinks to where you can buy each specific part from. You can also use the hyperlinks to find out more about what each component looks like. If you want to know even more, [Google](#) is your friend.

Bill of Materials

240R x 1	1nF x 2	TL084 x 1	C100K x 1
1K x 8	10nF x 1	CD4024 x 1	
10K x 7	1uF x 2	BC547 x 3	3.5mm socket x 8
47K x 3	10uF x 3	1N4148 x 2	
100K x 2	47uF x 2	78L05 x 1	Male 90° header x 1
470K x 2		79L05 x 1	
1M x 1			Box header x 1
10M x 1		14 pin socket x 2	Knob x 1
All resistors ¼ watt metal film.			

Main PCB assembly

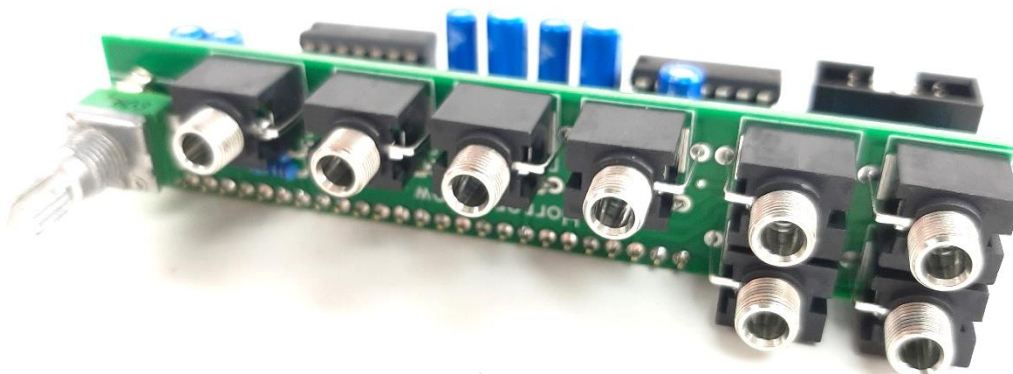
1. Solder all resistors and diodes
2. Solder both IC sockets
3. Solder all three non-electrolytic capacitors
4. Solder 3 x BC547, 78L05 and 79L05 – watch the polarity!
5. Solder the power header.
6. Solder all electrolytic capacitors
7. Cut male header to size and solder into place (see photo below).



Control PCB assembly

1. Solder the pots and 8 x sockets. Use the panel to ensure these line up nicely.

Note: Not all pots and sockets are equal in height. Providing you use the ones in the links provided, everything will line up perfectly.



Final assembly

1. Slot the header from the assembled Main PCB into the Control PCB. Ensure a nice tight fit and solder into place
2. Bolt the pot and the sockets to the panel using their nuts and washers.

Horrorshow: Part of the '[Nadsat](#)' vocabulary used by Alex in [Anthony Burgess](#) novel '[A Clockwork Orange](#)', horrorshow was derived by Burgess from the Russian word 'khorosho' meaning well or good.

RDH 31/10/22