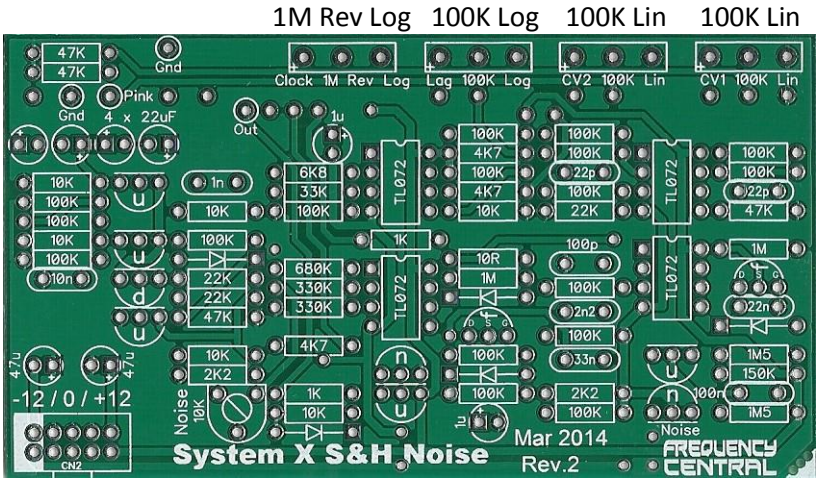
FREQUENCY CENTRAL

Build documentation for:

SYSTEM X S/H NOISE

Based on the Roland 100M 150 module

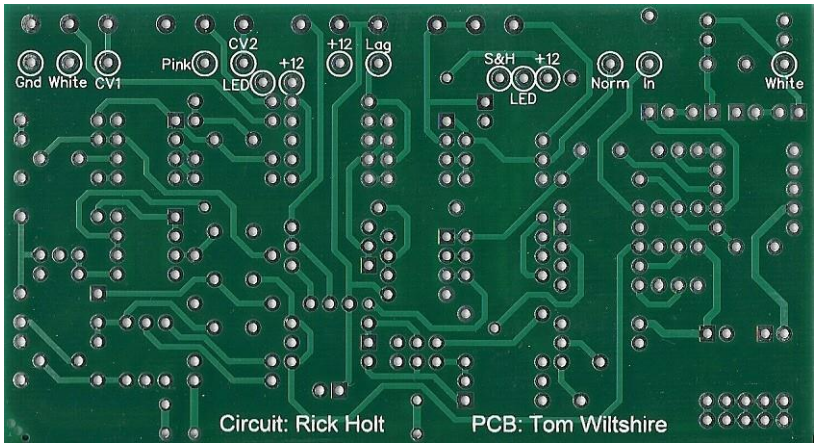


Key to PCB screen print:

n: This signifies NPN BC547 transistors. Note the correct pinout as shown by the half circles.
p: This signifies PNP BC557 transistors. Note the correct pinout as shown by the half circles.
f: This signifies FET 2N5485 transistors. Note the correct pinout as shown by the half circles.
Noise (above FC logo): This is the transistor used to generate the white/pink noise. Just a stock BC547 is fine for this. But if you really wanna use that vintage mushroom cap BC178 that you pulled from a 1970's Farfisa organ – you go girl!

The PCB shows the correct orientation for BC547/BC557/2N5485. Other transistor types can be used, but please observe the correct pinout.

Please observe the correct polarity of the electrolytic capacitors.



Bill of Materials

10R x 1 1K x 2 2K2 x 2 4K7 x 3 6K8 x 1 10K x 6 22K x 3 33K x 1 47K x 4 100K x 17 150K x 1 330K x 2 680K x 1 1M x 2 1M5 x 2	22pF x 2 100pF x 1 1nF x 1 2.2nF x 1 10nF x 1 22nF x 1 33nF x 1 100nF x 1 1uF electrolytic x 2 22uf electrolytic x 4 47uF electrolytic x 2	TL072 x 4 BC547 x 7 BC557 x 1 2N5485 x 2 1N4148 x 5 3mm red LED x 2	1M Rev Log x 1* 100K Log x 1 100K Lin x 2 All pots are Alpha 16mm 10K trimmer x 1 Kobiconn socket x 8**

*Roland used a 1M log slider mounted backwards, thus making it reverse log. At a push, you can use Lin or Log, but Rev Log will give the most useful taper. 500K will also give acceptable range.

**Tayda do sell a clone, these are ok-ish: http://www.taydaelectronics.com/hardware/3-5mm-plugs-jacks/3-5mm-mono-enclosed-socket.html
…but I prefer mine from Ebay seller **wonderco_buy** :
http://www.ebay.co.uk/itm/130401281167?ru=http%3A%2F%2Fwww.ebay.co.uk%2Fsch%2Fi.html%3F_sacat%3D0%26_from%3DR40%26_nkw%3D130401281167%26_rdc%3D1

Tip #1: Don't mix up your 10R with your 10K.

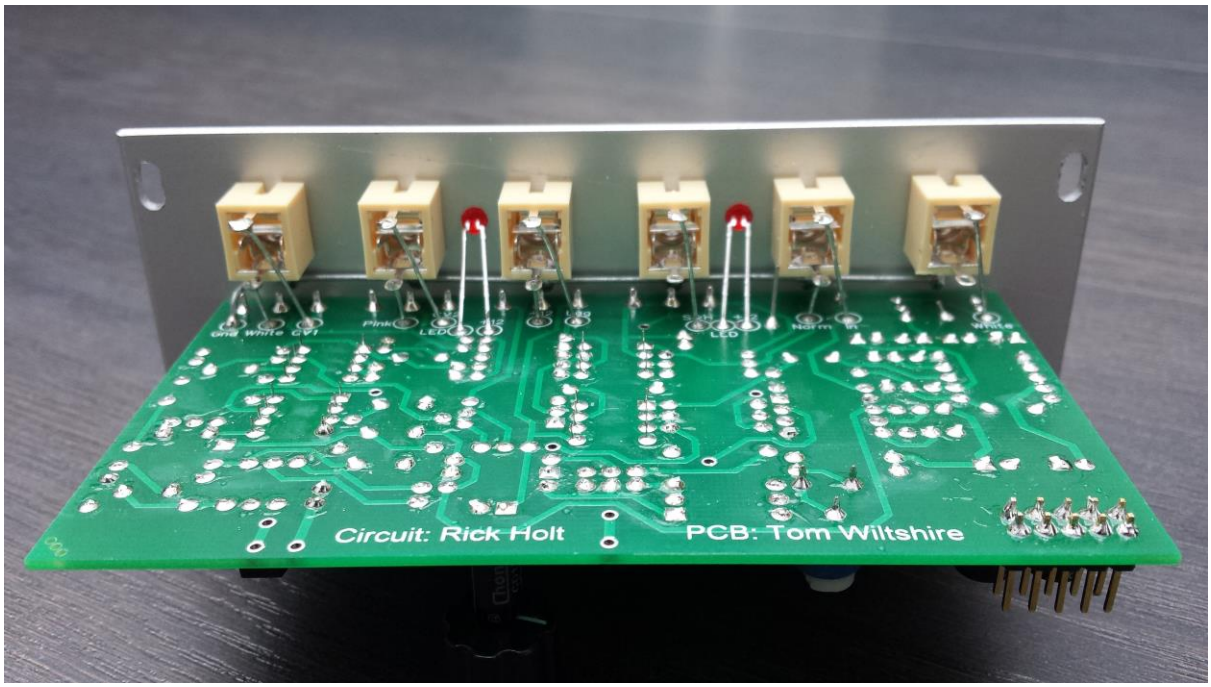
Now it's time to wire the PCB to the panel hardware. As there are rather a lot of connections to make, I've broken this down into two section. It's worth reading both sections before you start soldering!

Wiring the PCB to the panel hardware – Part I

I recommend Kobiconn sockets (or clone) for this build. The pads are laid out to make assembly easy if you use Kobiconn (or clone of). You can of course use other socket types.

We are going to wire the ground bus first, then work our was across the PCB from left to right (see photo).

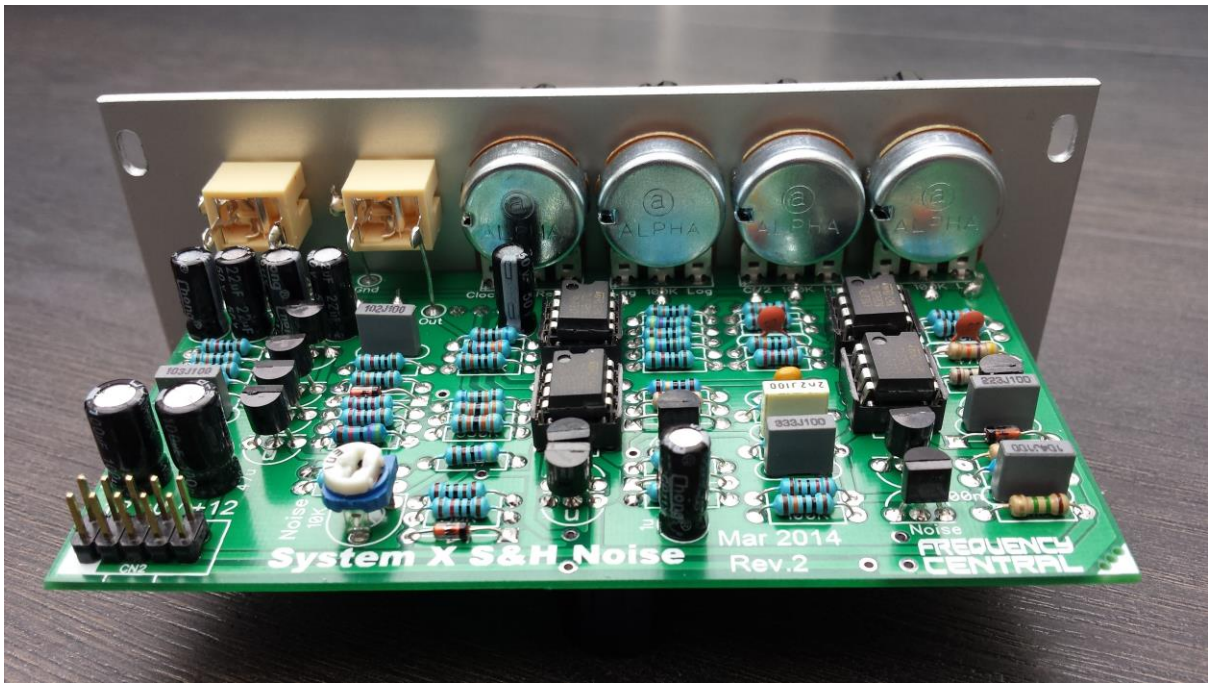
1. **Ground bus:** using solid core, ground all 6 socket together. The ground bus will enter the PCB right at the top of the PCB - see photo below, ground pad is on the far left, marked **Gnd**.
2. **CV1:** socket input connects to **CV1** pad, socket normalise connects to **White** pad.
3. **CV2:** socket input connects to **CV2** pad, socket normalise connects to **Pink** pad.
4. **Lag LED:** the LED's short leg goes through the pad marked **LED**, the LED's long leg goes through the pad marked **+12**.
5. **Lag socket:** socket input connects to **Lag** pad, socket normalise connects to **+12** pad.
6. **S/H Out socket:** socket output connects to **S&H** pad.
7. **Rate LED:** the LED's short leg goes through the pad marked **LED**, the LED's long leg goes through the pad marked **+12**.
8. **Clock In socket:** socket input connects to **In** pad, socket normalise connects to **Norm** pad.
9. **White Out socket:** socket output connects to **White** pad.



Wiring the PCB to the panel hardware – Part II

We are going to work our was across the PCB from left to right (see photo).

1. **Pink Out socket:** socket output connects to **Pink** pad. Connect socket ground to **Gnd** pad.
2. **Clock Out socket:** socket output connects to **Out** pad. Connect socket ground to **Gnd** pad.



Calibration

Noise trimmer: whack that bitch way up high!!

RDH 05/04/14

http://www.frequencycentral.co.uk/