FREQUENCY CENTRAL

Build documentation for:

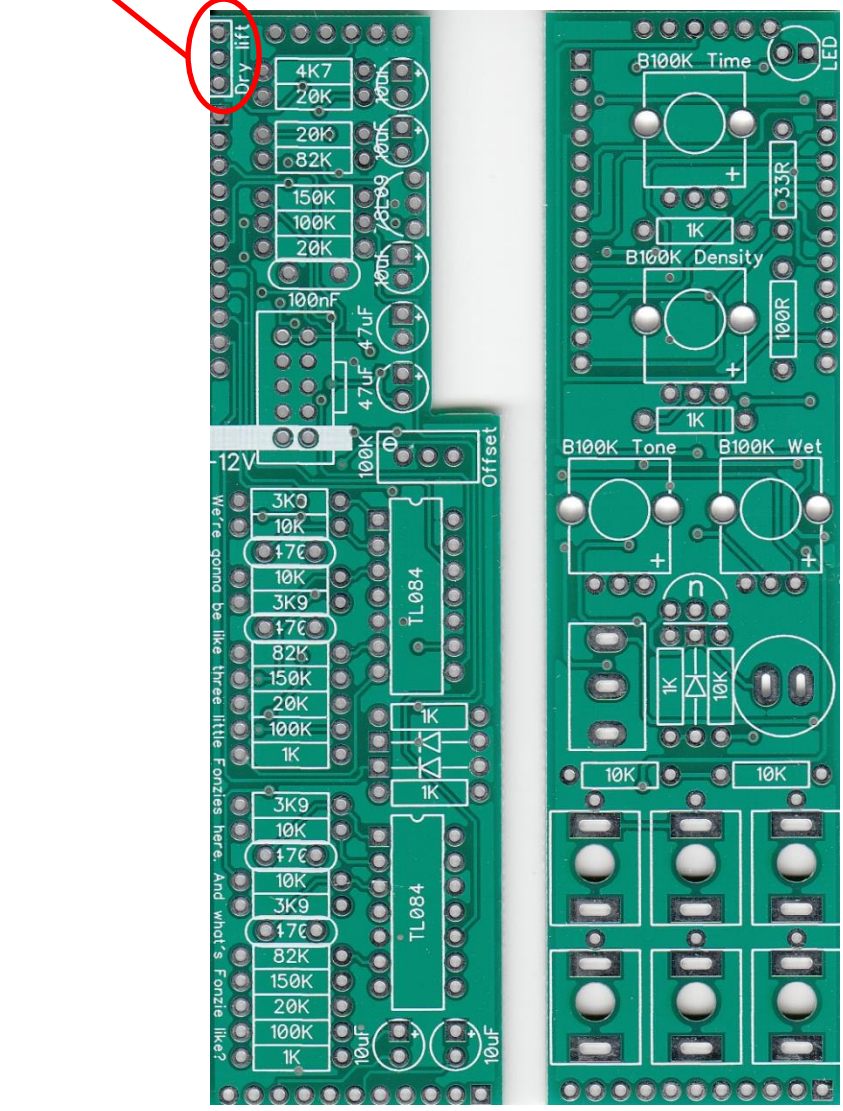
STASIS LEAK

CHORUS/TAP DELAY/PLATE REVERB

Stasis Leak is a 6HP 48kHz DSP effects module, providing a choice of stereo chorus, stereo plate reverb and tap tempo delay. Stasis Leak is based around a Belton ABE-FX sub board, which in turn is based around a Coolaudio V1000 chip.

Dry lift jumper for if you want to use Stasis Leak in an effects loop.

Main PCB **Pots 'n' sockets PCB**



Stasis Leak features 3 PCBs:

- Main PCB
- Pots 'n' sockets PCB
- Belton ABE-FX, a fully populated SMD PCB which plugs into the Pots 'n' sockets PCB

Key to PCB screen print:

n: This signifies NPN BC547 transistor. Note the correct pinout as shown by the half circles. The PCB shows the correct orientation for BC547. Other transistor types can be used (eg 2N3904), but please observe the correct pinout.

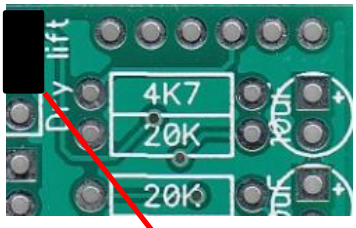
Please observe correct polarity of the electrolytic caps, voltage regulators, transistor, ICs etc!

Bill of Materials

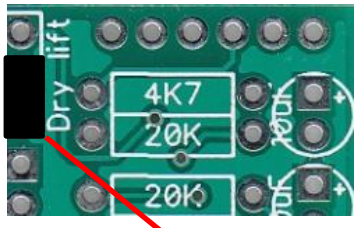
33R x 1 100R x 1 1K x 7 3K9 x 4 4K7 x 1 10K x 7 20K x 5 82K x 3 100K x 3 150K x 3 All resistors ¼ watt metal film.	470pF x 4 100nF x 1 10uF x 5 47uF x 2	Belton ABE-FX* TL084 x 2 BC547 x 1 78L09 x 1 9 volt regulator 1N4148 x 3 3mm red LED x 1 14 pin IC socket x 2 Stasis Leak PCB set Stasis Leak panel	B100K x 2 METAL SHAFT B100K x 2 (or these)** PLASTIC SHAFT SPDT toggle x 1 on/off/on Push Button 100K multi turn trimmer 3.5mm socket x 6 Male 40 pin header x 1 cut to size Female 40 pin header x 1 cut to size Jumper x 1 for dry lift 10 pin box header Little knob x 2
* You can buy this from me, or some other place. ** I prefer the Song Heui tall trimmers because they have a longer shaft and a white notch.			

DRY LIFT

There's a 3 pin header on the main PCB, so you can decide if you want the dry signal to appear at the output, or just the wet signal.



Normal mode



Dry Lift mode

Affixing the Belton ABE-FX

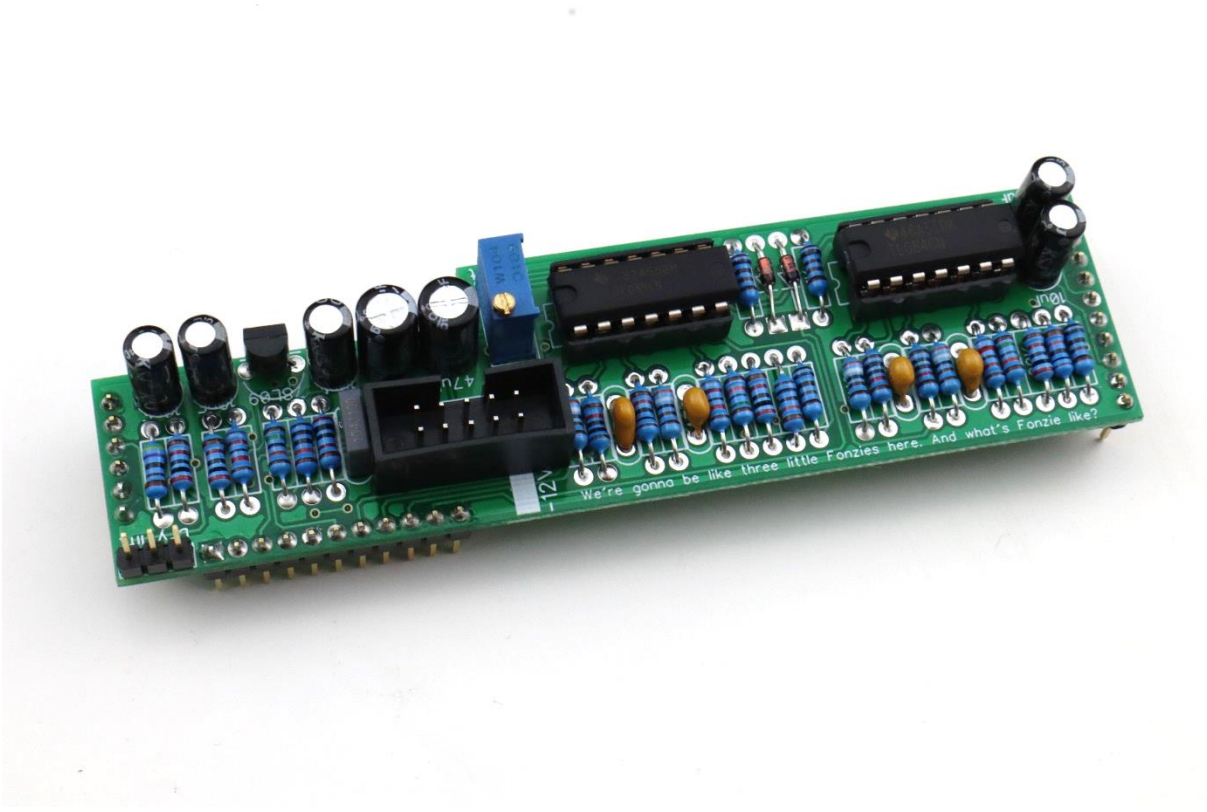
The Belton plugs in to the **Pots 'n' sockets** PCB. We recommend using a header to mount the Belton (see photo on last page of this build doc). This makes the module a little deeper than directly soldering the Belton without a header. But it saves you from the grief of de-soldering it if you make an error. Make sure you mount it the correct way around (see photo on the last page of this build doc).

Main PCB:

Populate the Main PCB as shown on the silkscreen, starting with the lowest profile components, so:

- Resistors, diodes
- IC sockets
- Non-electrolytic capacitors, transistors, trimmers – don't cut the middle leg off the trimmer yet, we'll use it for calibration later)
- Dry lift 3 pin header: note that this sticks out of the front of the PCB.
- Power header
- Electrolytic capacitors, trimmer

Finally, cut 3 male header strips to the correct lengths (11, 11, 6) and solder to the PCB so that the long legs stick out of the rear of the PCB.



Pots ‘n’ sockets PCB

Populate the Panel PCB as shown on the silkscreen in this order:

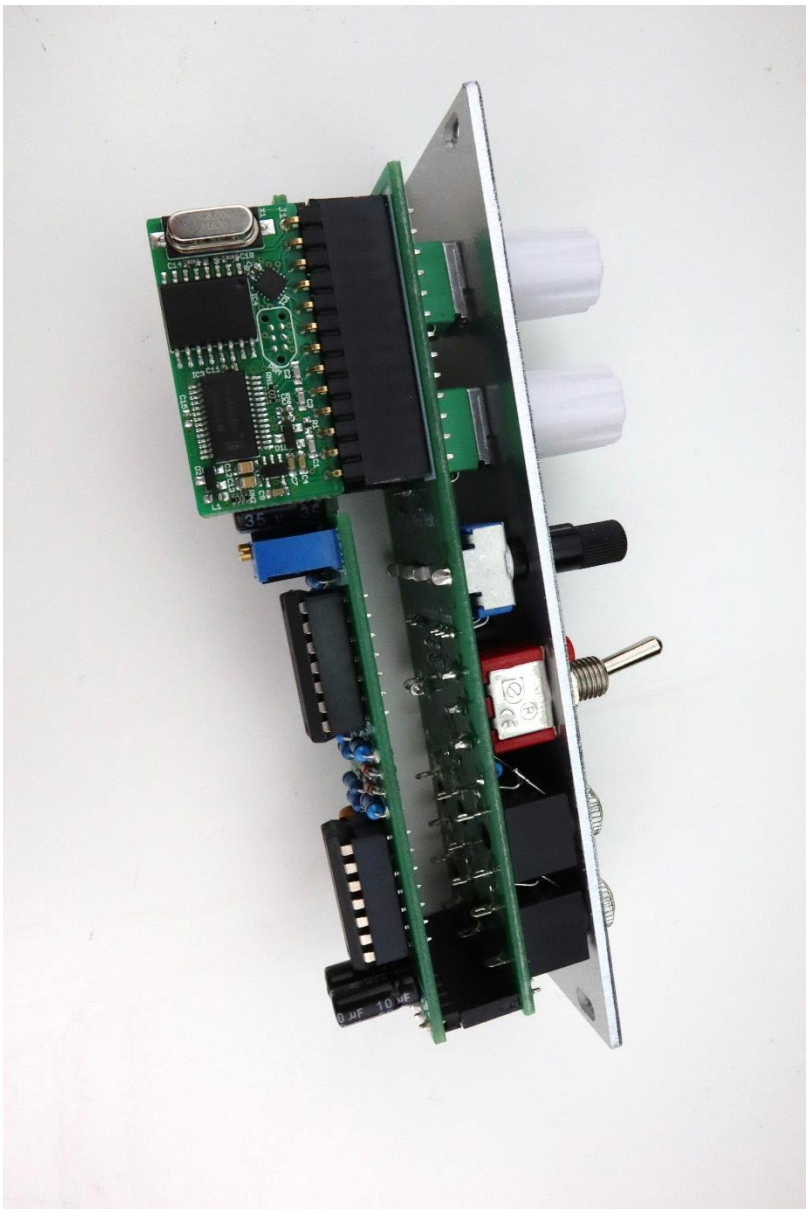
- Resistors and diode
- Transistor
- **Don’t do the LED yet!**
- The upper 2 potentiometers, the switch and the sockets. Use the panel to make everything line up nicely. You may want to do the sockets 3 at a time, makes it easier to solder their ground connections.
- The 2 lower potentiometers
- Cut 4 female header strips to the correct lengths (13, 11, 11, 6) and solder to the PCB so that the black parts stick out of the rear of the PCB.
- Pop the LED through its pads on the PCB – **don’t solder it yet!** Put the panel back together with the panel PCB, push the LED through the panel, making sure that it sits right, now solder it in place.
- Mount all of the panel components using their appropriate washers and nuts.

Plug the Main PCB into the Panel PCB…you’re done!

Calibration procedure

1. Connect the red probe of your DMM (digital multimeter) via a crocodile clip to the middle leg of the trimmer.
2. Connect the black probe of your DMM to ground
3. Set your DMM to read DC voltage.
4. Adjust the trimmer until the DMM reads 4.5V
5. Cut the middle leg off the trimmer now!

There, you're good to go go go go go go go go go go...



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