CANCAN

DIY BUILD DOCUMENT V1.0

ΛPOLLO VIEW ⎯⩗⎯

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SPECIAL THANKS

Thomaas Banks   Thomaas Banks
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Tools

ESSENTIAL

- Soldering Iron - a solder station with temperature control is best. Some components on this build are connected to the ground plane and require a large amount of heat. A low Wattage soldering iron that plugs directly into the power supply will not be good enough to achieve an effective solder joint. When soldering pots and jacks, 370°C is best; for everything else, 340°C (this is dependent on the solder you use, so check out your solder's data sheet).

- Solder - We find thin is best, around 0.6mm. We use a lead-free rosin core solder.
- 7mm & 10mm Nut drivers
- Bananut driver
- Side Cutters
- Pliers
- Solder Sucker
- Watchmaker screwdrivers, Phillips ≅2.3mm and flathead ≅2.3mm

CALIBRATION

- 10Vpp 1kHz sine wave
- Straight blade watchmakers screwdriver

OPTIONAL

- Flux Pen
- Cleaning Brush (an old toothbrush will do)
- Masking Tape (It can help hold components in place when flipping the board over to solder)

Construction Guide

There are already excellent soldering guides in existence, so we will refrain from reinventing the wheel here.

If you need some guidance, please check out the Moritz Klein x Erica Synth Build Documents. The soldering appendix is an excellent resource.

Or, if you prefer [videos](), this is a pretty good guide.
In most cases, components can be placed onto the PCBs, and then the board can be flipped upside down and laid facedown on the soldering mat to solder the legs to the back of the PCB.

PARTS LIST

Component	Qty
Faceplate	1
Faceplate Screws	2
Front PCB	1
Back PCB	1
01 x 03 Pin Header	3
02 x 05 Pin Header	1
01 x 36 90 degree Pin Header	1
Jumper	2
Thonkiconn Jack Mono	4
Thonkiconn Jack Stereo (Green)	2
Bananuts	6
Knobs	2
B50k Alpha D Shaft Dual Gang	2
Black Hex Nut	2
Light Pipes	2
LED Bridge	1
Power Cable	1

ASSEMBLY STEPS

Note: when instructed to solder things in place.

Front PCB Face
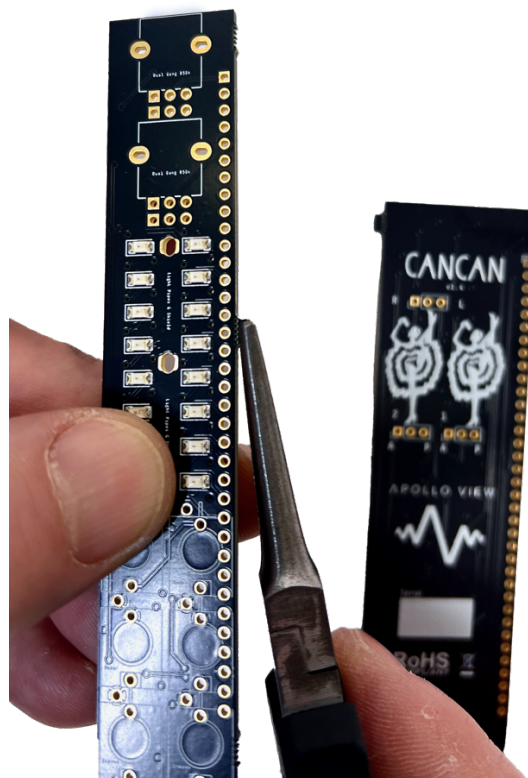
Front PCB Rear

Back PCB Face

Back PCB Rear

1. Snap the PCBs apart
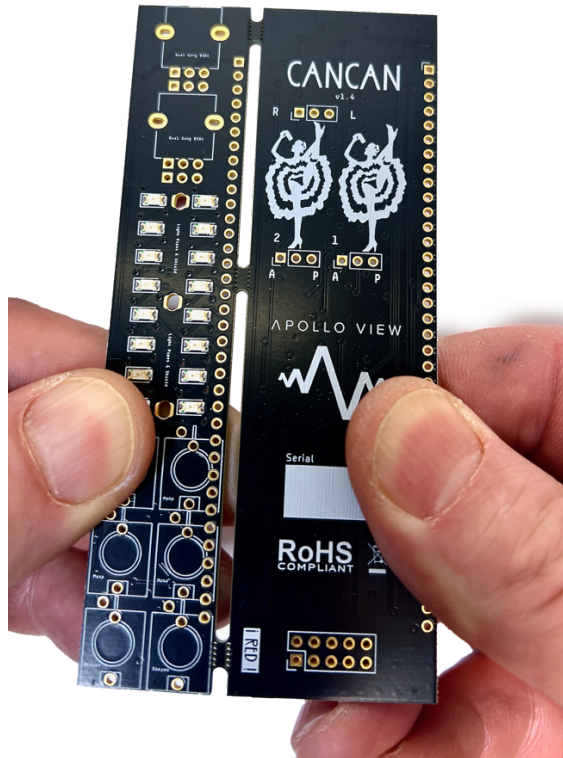
2. Remove all the mouse bites with a pair of pliers.

3. Locate the 01x03 pin headers. Place them on the Face of the back PCB. Then Solder it in place. TIP – Just solder one pin first, then check the positioning of the pins is perfectly perpendicular to the PCB; make an adjustment to the one soldered pin if necessary before soldering the rest of the pins.
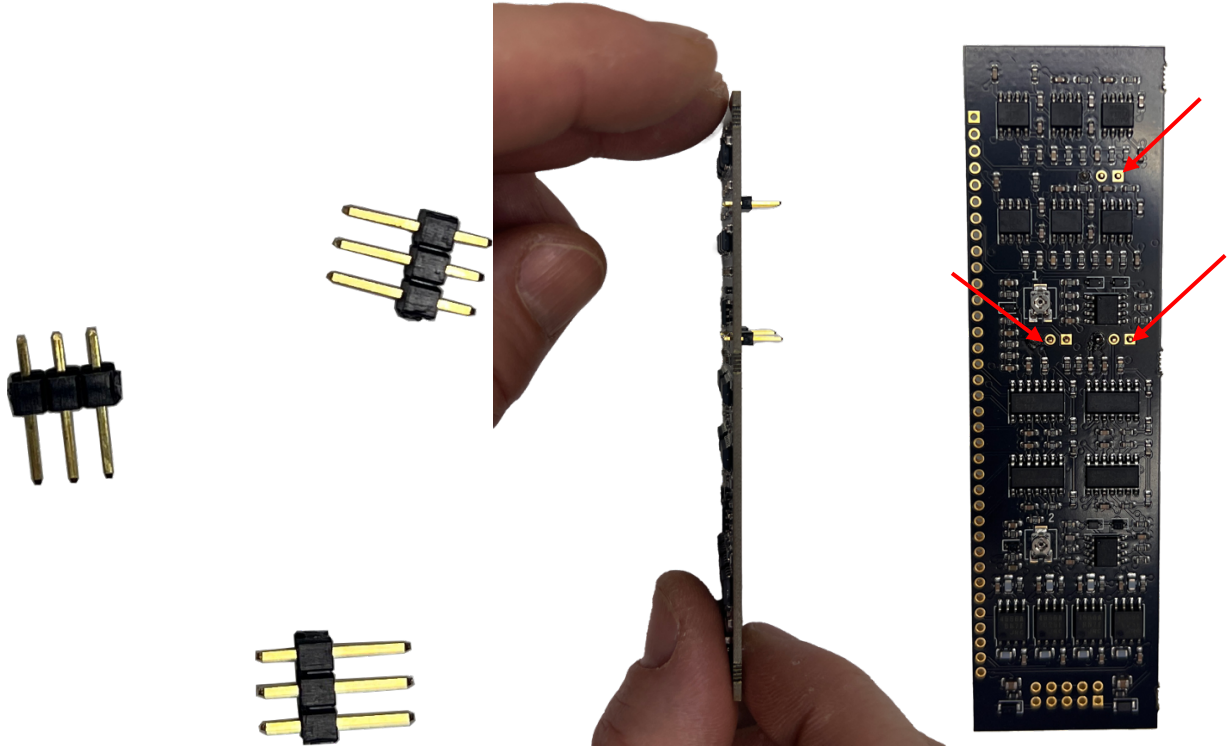

4. Locate the 02x05 pin header. Place it on the Face of the Back PCB and solder in place.

5. Locate the 01x36 pin header.
6. TAKE CARE WITH THE NEXT STEP! MESS THIS UP AND THE WHOLE BUILD IS RUINED! Place the LONG pins through the holes on the Back PCB. The long pins should be placed through the holes on the Rear of the back PCB so they protrude through to the Face. Solder into position. TIP - Try to keep the Pins you are soldering as perpendicular to the board as possible. Putting something the same thickness as the black body of the pin header under the PCB can help with this.

Shorter side of the pins

Longer side of the pins
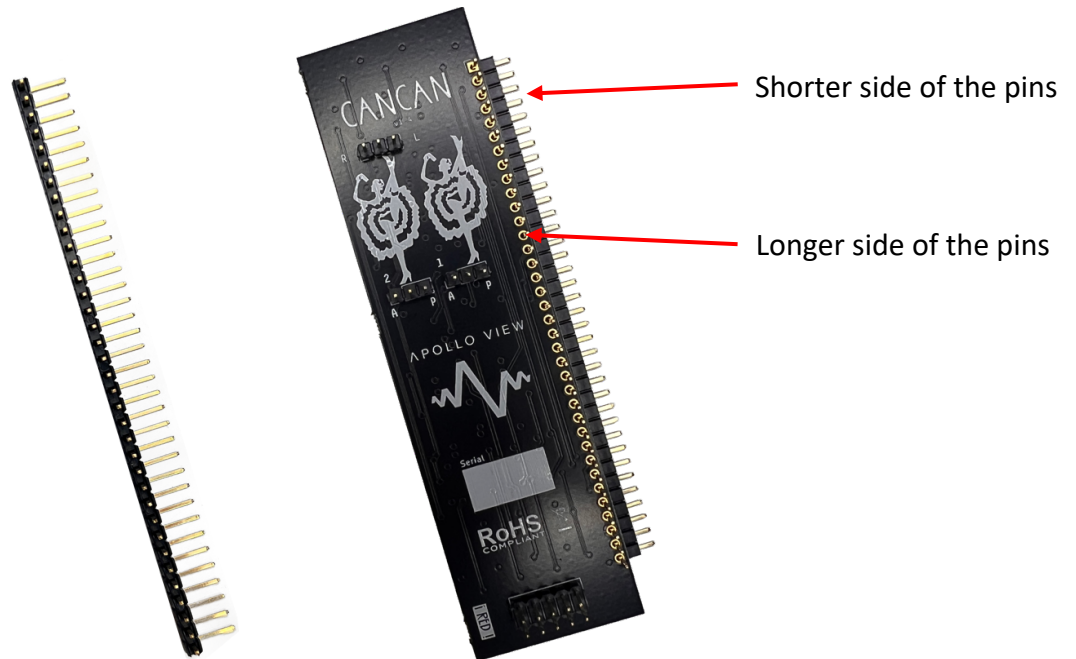
7. Once soldered, use some side cutters to cut off all the legs of the long pins. TIP - You might want to resolder the joints after cutting the pins


Longer side of the pins
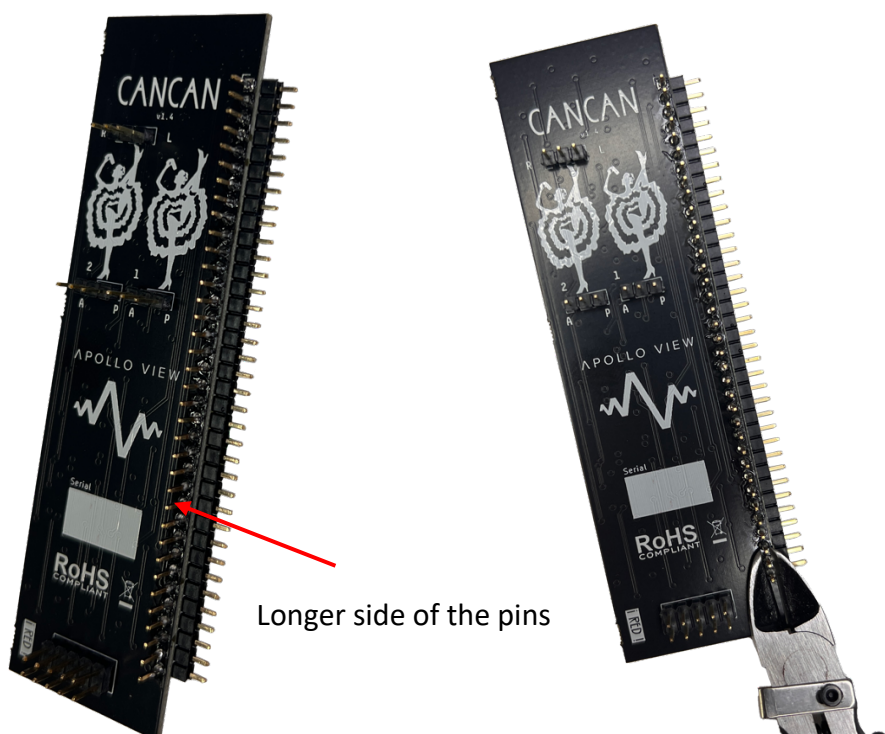
8. Next, we will connect the two PCBs. Put the short pins through the Rear holes of the Front PCB.
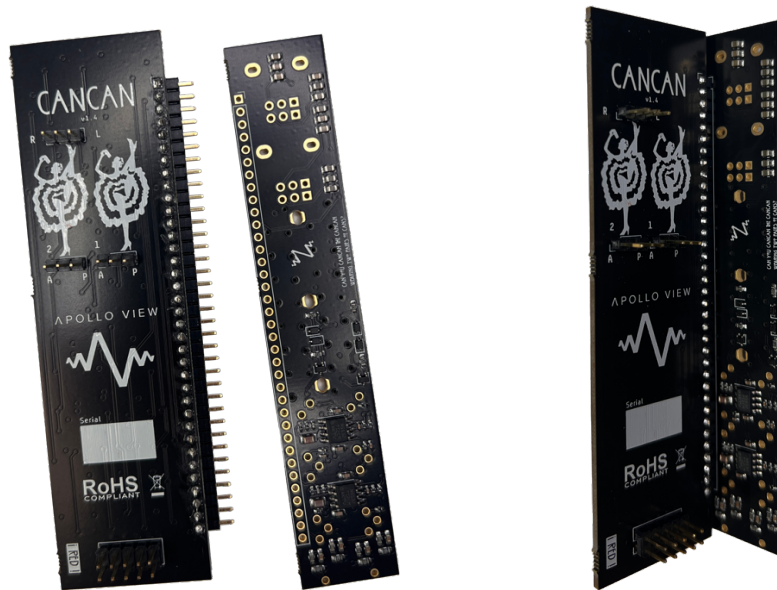
9. Solder the pins on the Face of the Front PCB, ensuring the boards are at a perfectly 90-degree angle. If you don't get them at 90 degrees, you will have problems putting the model into a rack, as the back PCB could encroach on the space needed for any adjacent module.
10. Then, cut off the soldered pins indicated below as close as possible to the PCB with side cutters. This step is to make space for the Jack Sockets to sit flush against the PCB. You only need to cut the pins marked in red below. TIP - You can reflow the solder joints after cutting the pins.

11. Locate the pots. It might help to straighten out the legs with long nose pliers, especially the purely mechanical ones on the side. In our experience, a slight straightening of these helps seat them easily in the footprint.
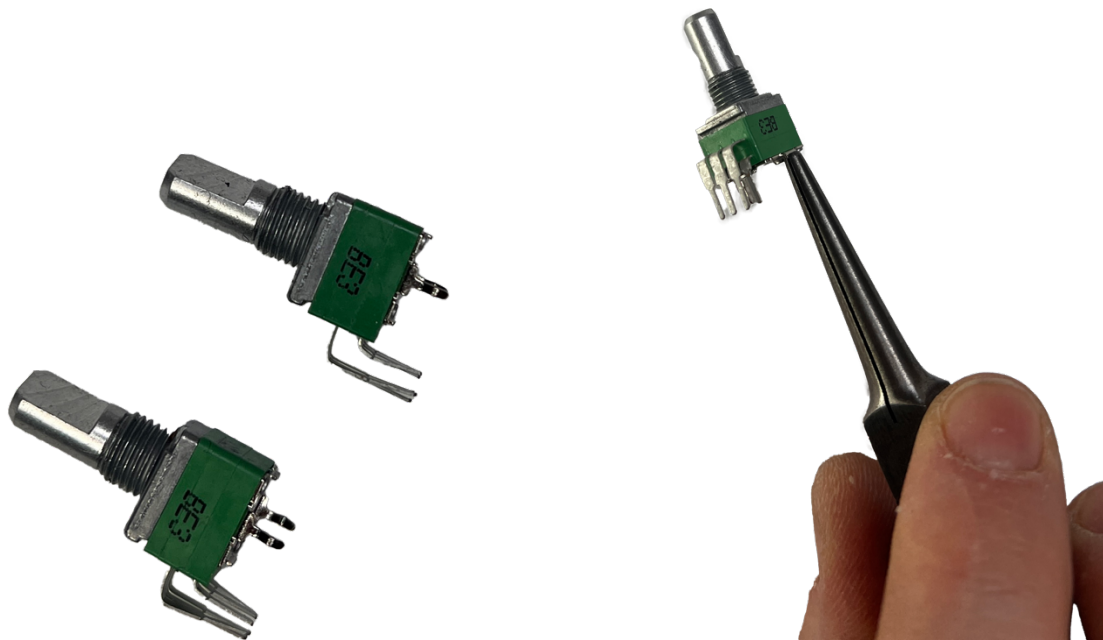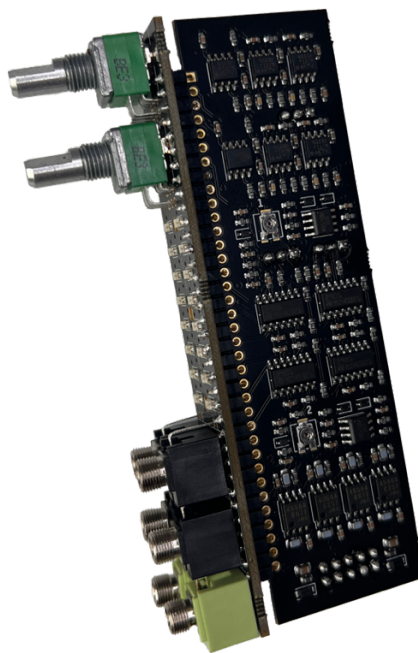
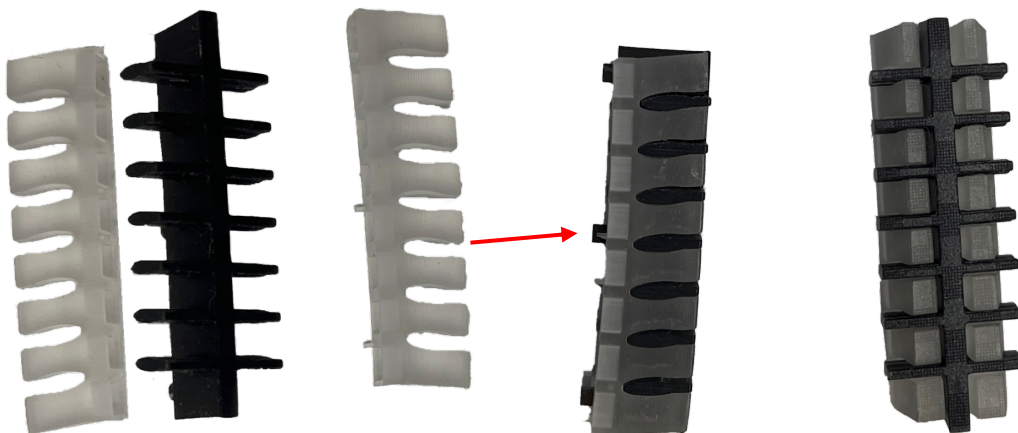12. Pop the pots in the Face of the Front PCB. Don't solder yet!
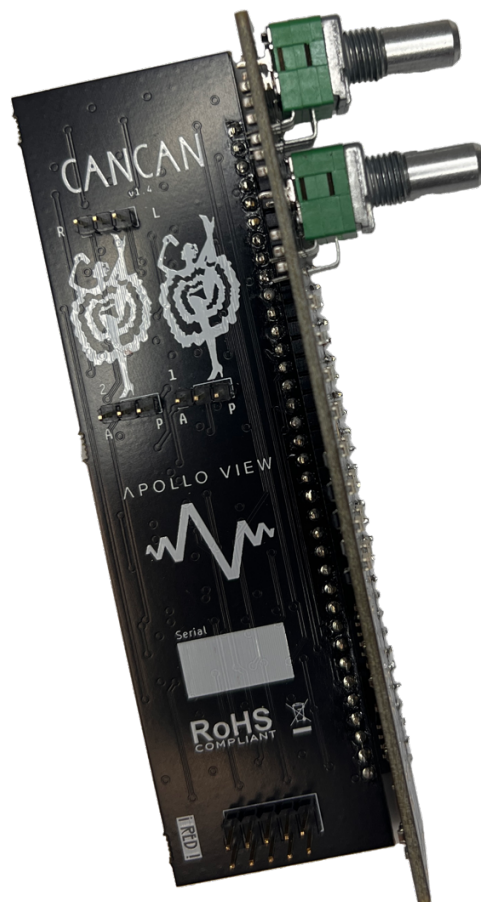
13. Locate the mono and stereo Jacks.

14. Populate the PCB with the jacks. The Stereo Jacks are the two at the bottom.

15. We will now piece together the Lightpipes and the LED Bridge.

The black Bridge piece and LED Lightpipes have angles and contours. They fit together easily when in the correct orientation.

16. Place the Lightpipes onto the Face of the Front PCB, and ensure the angles of the transparent pieces are sweeping from bottom to top. Carefully check the correct orientation in the image below. It will take some jiggling to get the transparent pieces seated correctly. You're aiming to get each transparent piece to cover the LEDs fully.
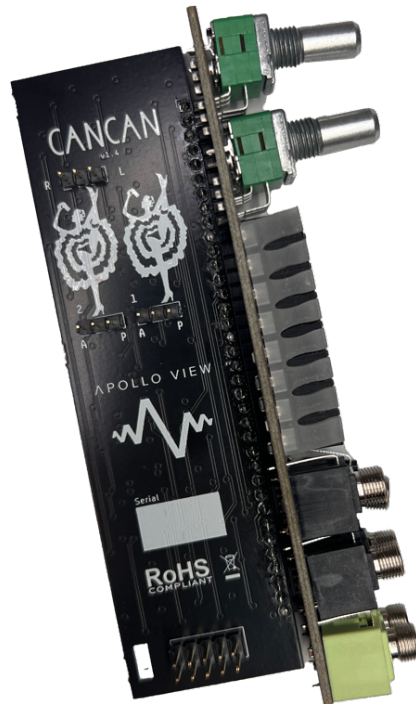

17. Next we will put on the front panel. Take care not to dislodge any jacks. Flip the board over and ensure all the legs for all the components are poking through.
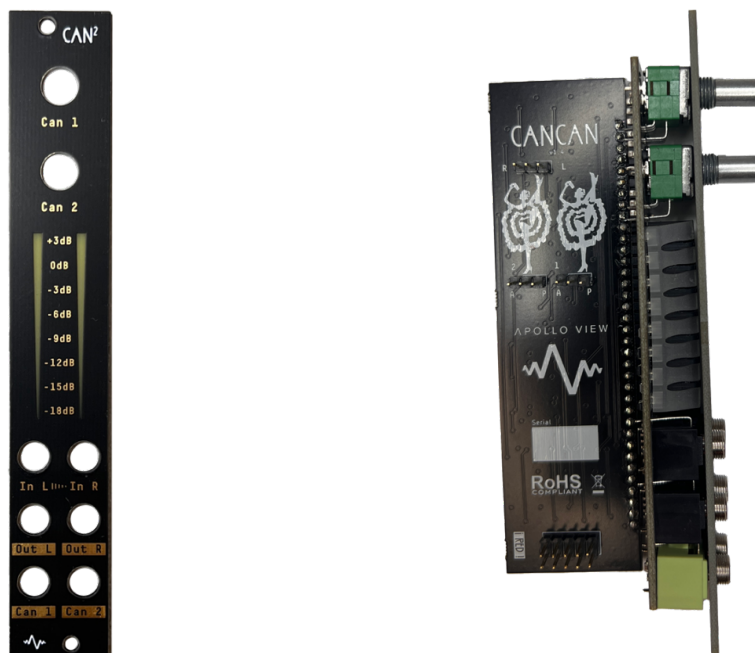
18. Put black hex nuts on first. Place them with the smooth/rounded side down. If you position them with the flatter side down, they scratch the Faceplate while tightening.

    Note: The washers aren't strictly necessary but can be used if desired. We chose to leave them off as we found it more aesthetically pleasing. The Washers might not be included in the kit.
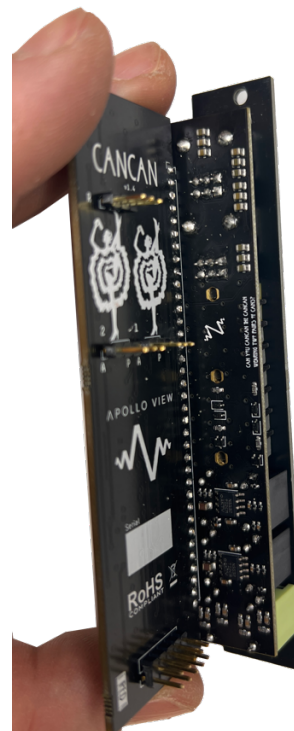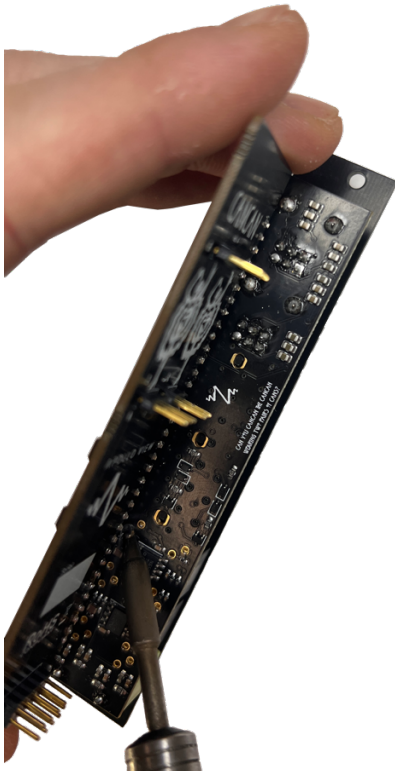
Flat side up   Rounded side up
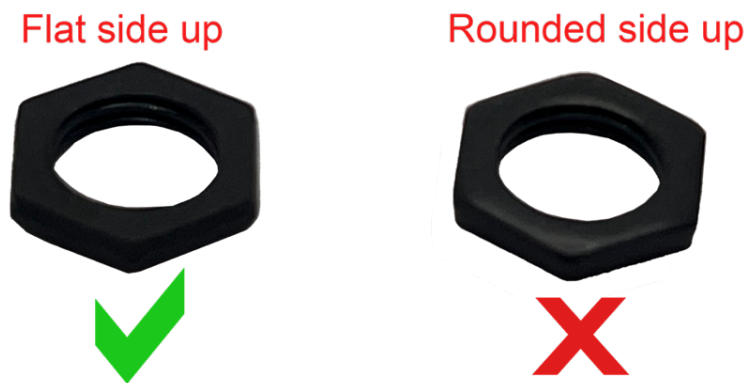
19. Finger Tighten the black hex nuts first before tightening with 10mm hex driver.
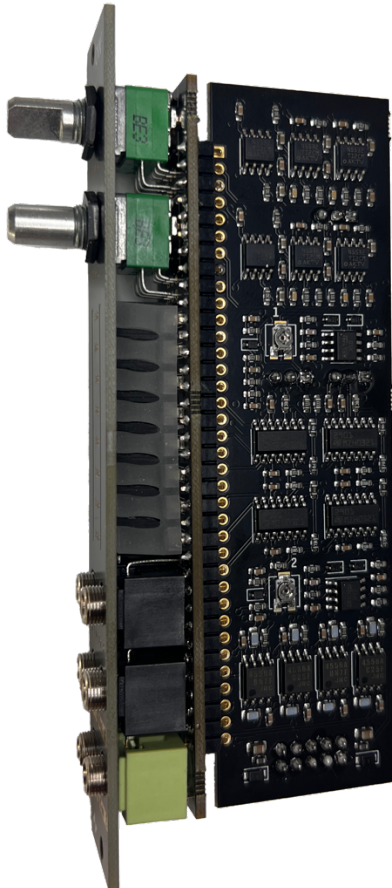
20. Then position and finger tighten the Bananuts onto the jacks. Do the final tightening with the Bananut driver.
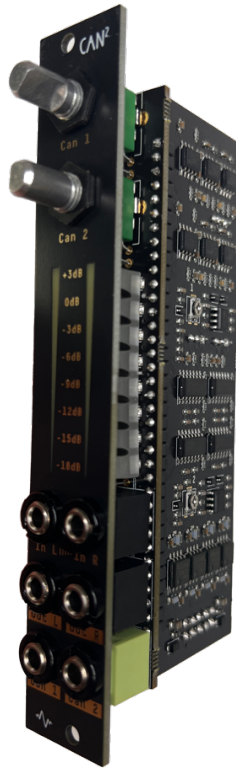
21. Boom! You are ready to solder everything in place.

22. Give all solder joints a quick scrub with a cleaning brush if you like. Gently push the Knobs on.

23. Locate the jumpers.

24. **Configuration -** The level meters can display either peak or average signal levels. This is configurable via a set of jumper pins on the back of the module. Jumper 1 configures the left channel, and jumper 2 configures the right channel. Place the jumper on the middle pin and either P (Peak) or A (Average) according to your preference.
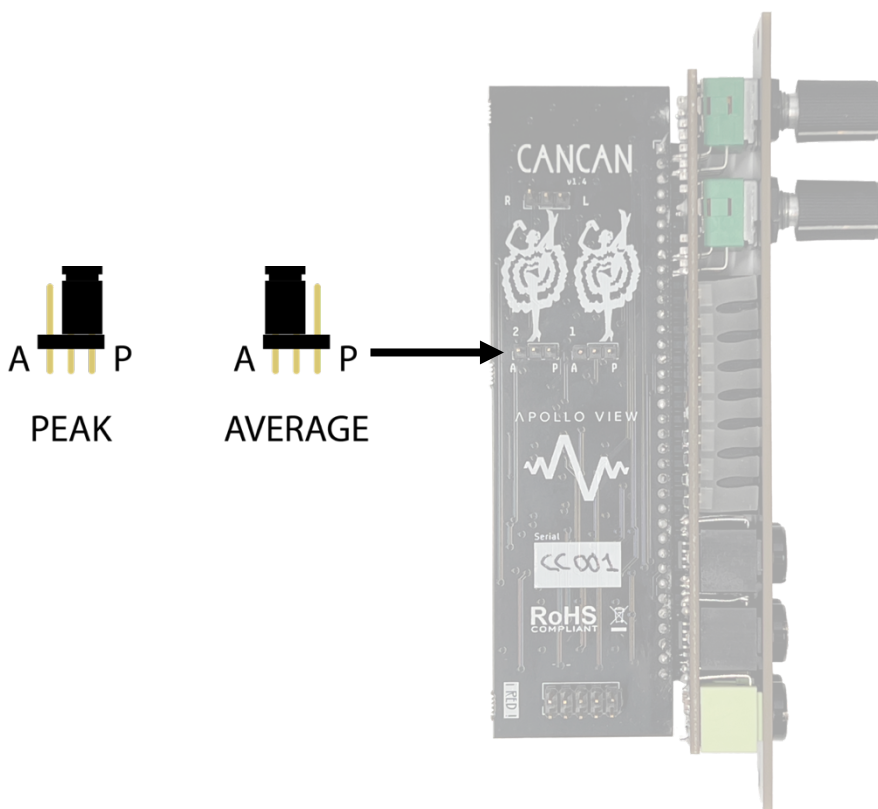
25. Grab the power cable and align the red stripe with the !RED! symbol. Push on the Power cable.
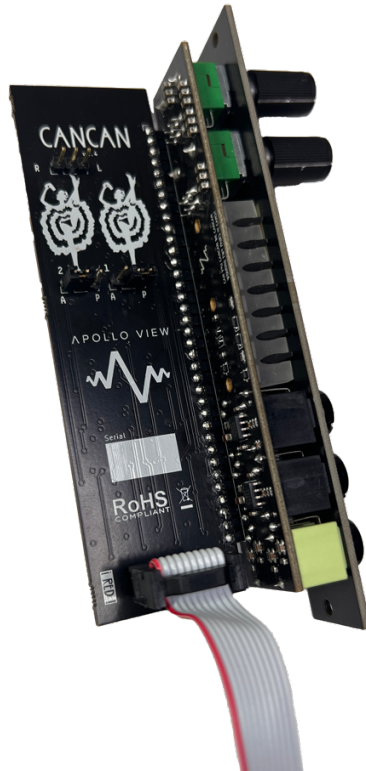
26. That's the build done you are now ready for calibration.

CALIBRATION

Reading the Meters – In Peak mode, the 0dB indicator corresponds to a 10Vpp input signal level. The +3dB indicator corresponds to approximately 14Vpp, a high level that could cause clipping in subsequent stages. Aim for the 0dB LED to illuminate for optimal levels. Note that the meter will show a lower level in Average mode since it doesn't respond to quick transient peaks.

The module needs to be connected to the power supply and on for calibration. But you need access to the back of the module, so don't screw onto the rails of your rack just yet.

METER CALIBRATION

Use the trimmers on the back of the module. For the Left meter, use trimmer 1; for the Right, use trimmer 2. With the meters set to Peak mode, input a 10Vpp 1kHz sine wave into the left input and adjust the trimmer until the 0dB LED illuminates.

THAT'S IT; YOU'RE GOOD TO GO!

PLEASE READ THE MANUAL FOR MORE OPERATIONAL INFO

GO MAKE SOME FILTHY SOUNDS.

WHO WILL USE YOUR SECOND PAIR OF CANS?

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