

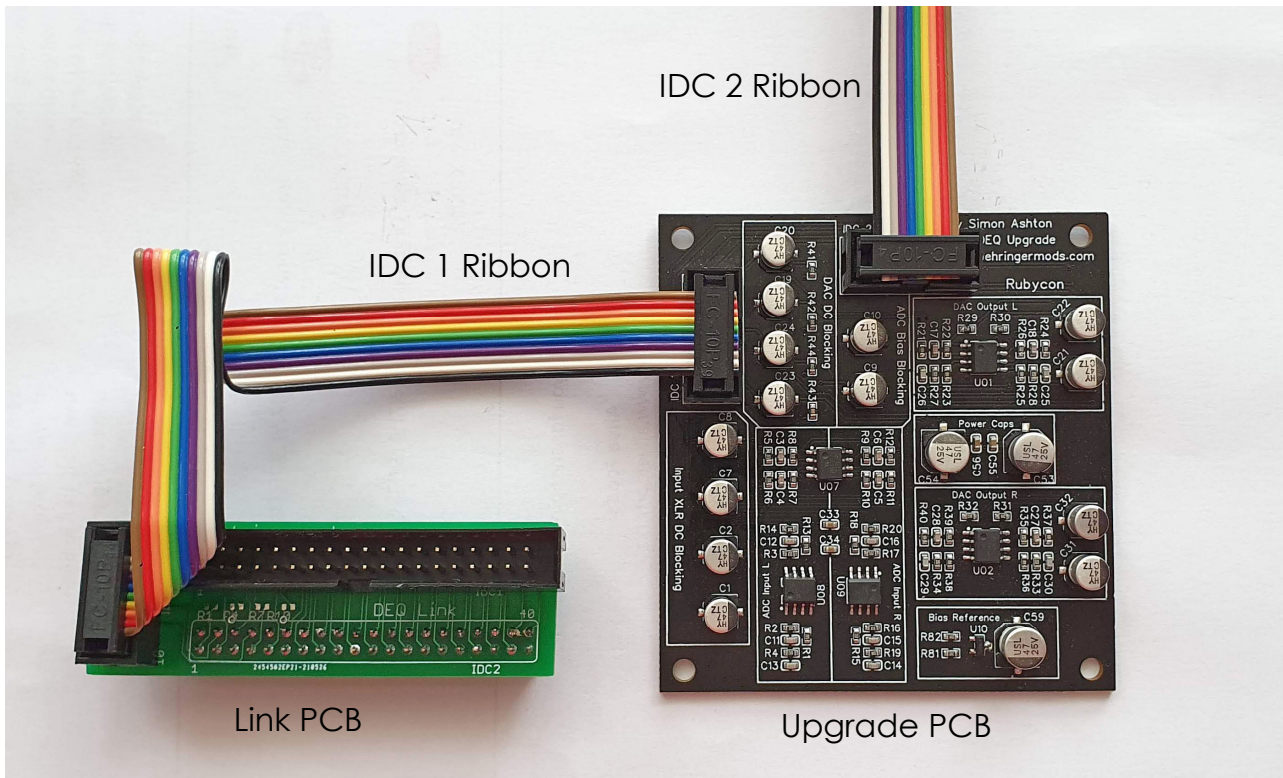
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Instructions for modification of Behringer DEQ analog inputs and outputs

The following instructions will cover the details of fully modifying a unit with analog output and analog input upgrades.

These modifications require a high level of experience with electronics. If you doubt your ability to complete the mods correctly, please contact BehringerMods to arrange an installation service.

BehringerMods take no responsibility for damage caused to your equipment by modification.



The modification package should come with the following parts:

- Analog input and output upgrade PCB
- Link PCB
- Ribbon Cable x2
- PCB Stands x4

Note: This install guide shows older green colour upgrade PCBs, the newest version is black. The install process is identical.



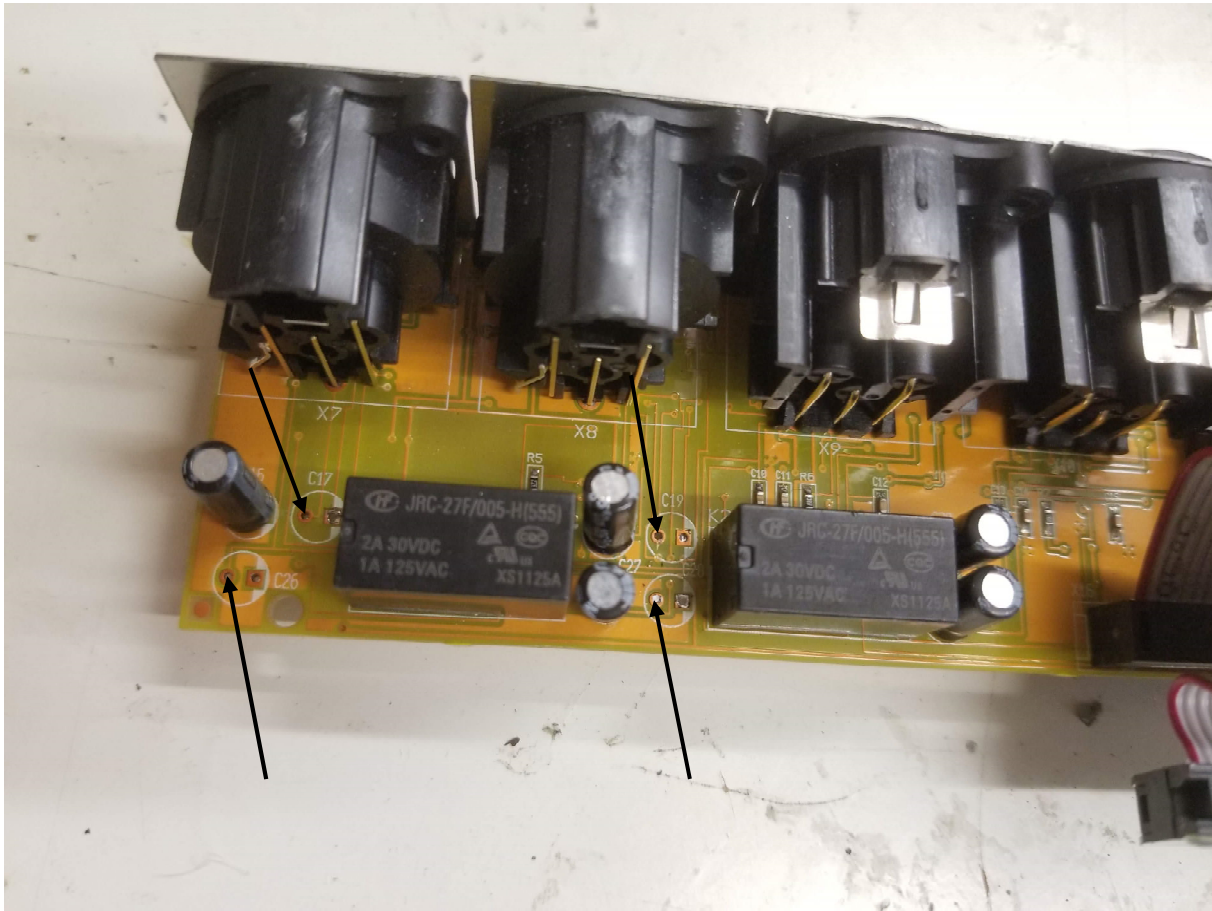
Get a cup of tea or coffee. Remove the equipment cover and keep the screws in a dish.

Use pointy nosed pliers to gently remove the glue securing the main ribbon cable connecting the rear PCB to the main PCB.

Remove all screws that secure the rear PCB to the case.

Remove the plastic button cover on the +12 / +22dBu switch by pulling it.

Take out the rear PCB from the case.



Locate capacitors C17, C26, C19, C28

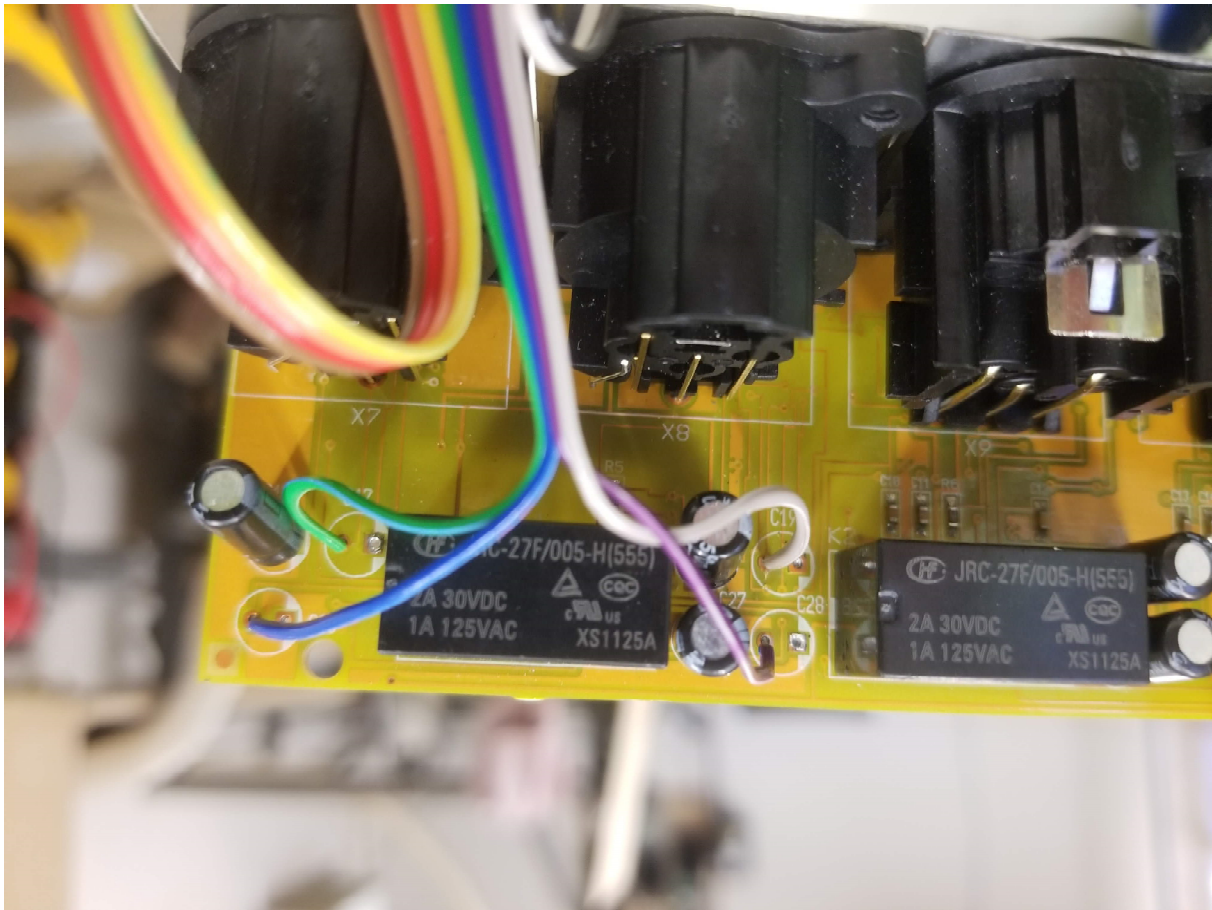
Remove the capacitors.

Clear the solder from the round positive pads of each capacitor. (The square pads marked with more white ink is the negative one)

Note: The capacitor legs are slightly bent on the back to secure them in the PCB. If the capacitor is removed without care, the bent leg can tear out the PCB hole plating.

It can help to cut the back of the capacitor leg as close as possible to the PCB with side cutters. It is also helpful to cut off the body of the capacitor near the indented area. Then each leg can be removed individually.





Locate the ribbon cable which does not have a plug on the end.

Strip and tin the Green, Blue, Violet, Grey wires.

Solder:

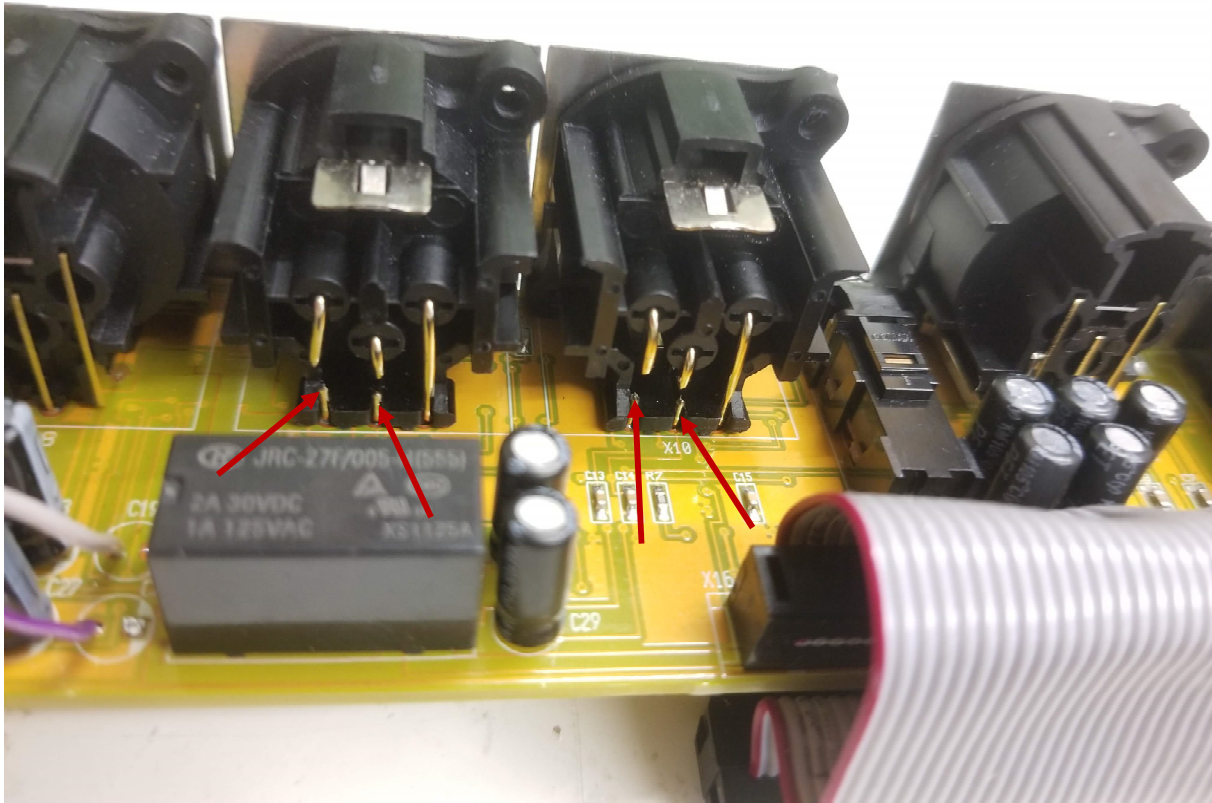
Green to positive pad of C17

Blue to positive pad of C26

Grey to positive pad of C19

Violet to positive pad of C28

These wires pick up the analog input XLR signals and send to the upgrade PCB.



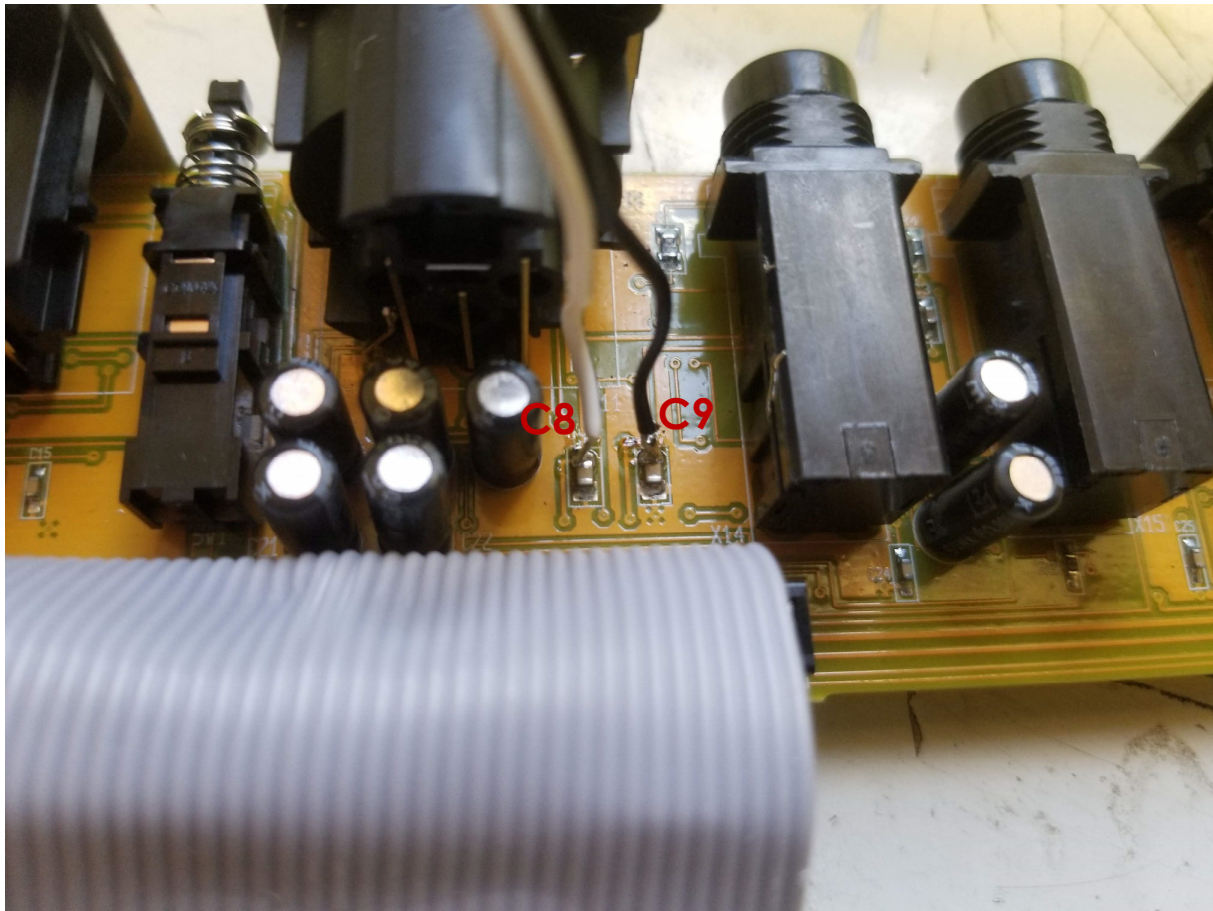
Cut pin 2 and pin 3 on each of the output XLRs.
Make a clear gap as shown.
Do not cut pin 1 (ground.)



Strip and tin the Orange, Yellow, Brown, Red wires on the ribbon cable with no plug.

Solder as shown:

Orange to left output XLR pin 2
Yellow to left output XLR pin 3
Brown to right output XLR pin 2
Red to right output XLR pin 3



Strip and tin Black and White wires on the ribbon cable with no plug.

Solder as shown:

White to top of C8

Black to top of C9

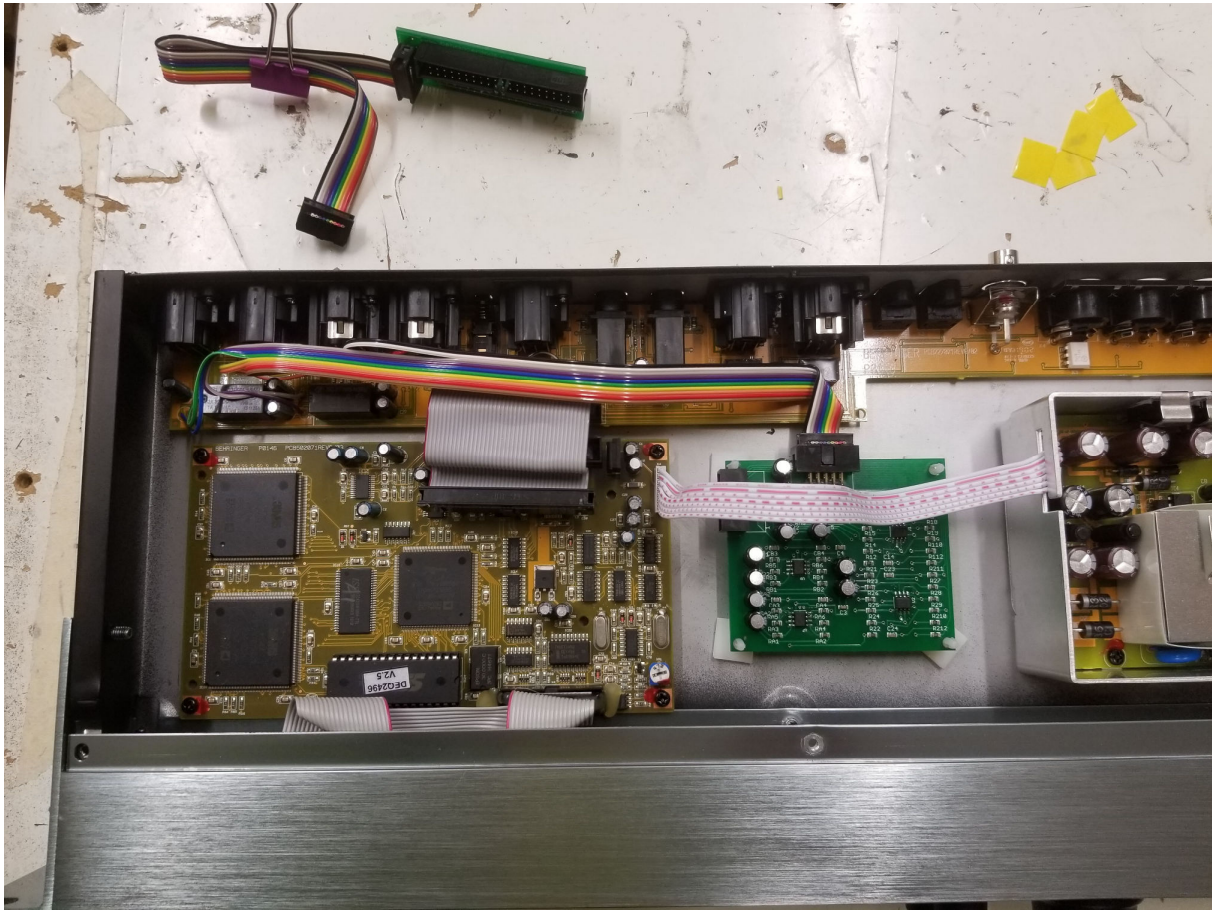
These are small SMD capacitors on the rear PCB near the aux jacks. Take care not to short circuit them.

This provides power to the upgrade PCB.



Re-install the rear PCB in the case.

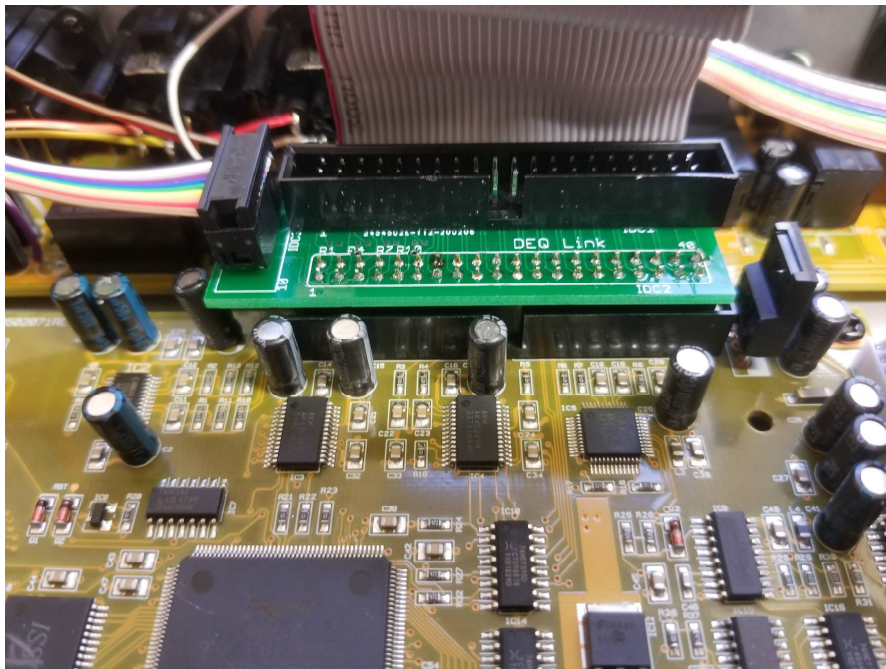
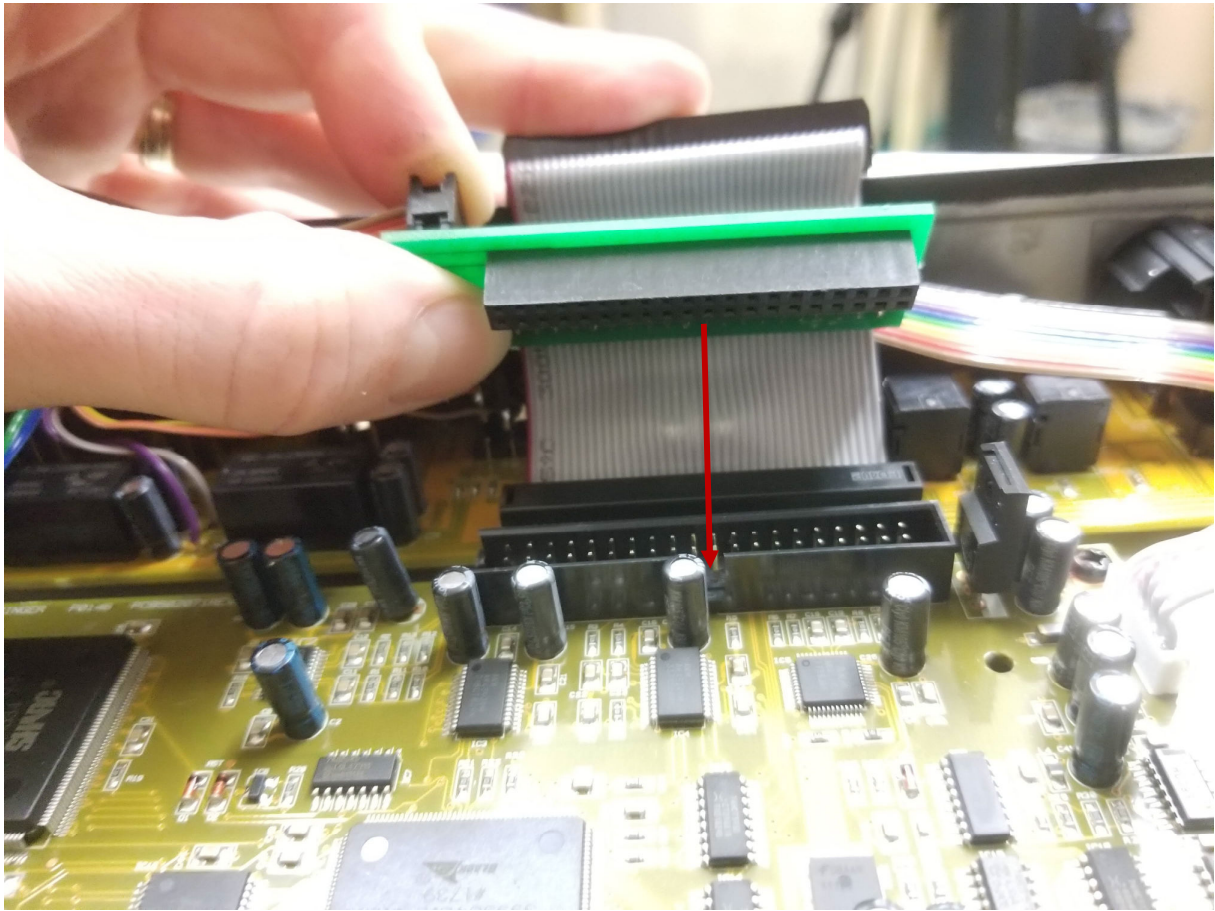
Place the upgrade PCB in the case as shown, using the self-adhesive pads.



Re-install the rear PCB in the case.

Place the upgrade PCB in the case as shown, using the self-adhesive pads.

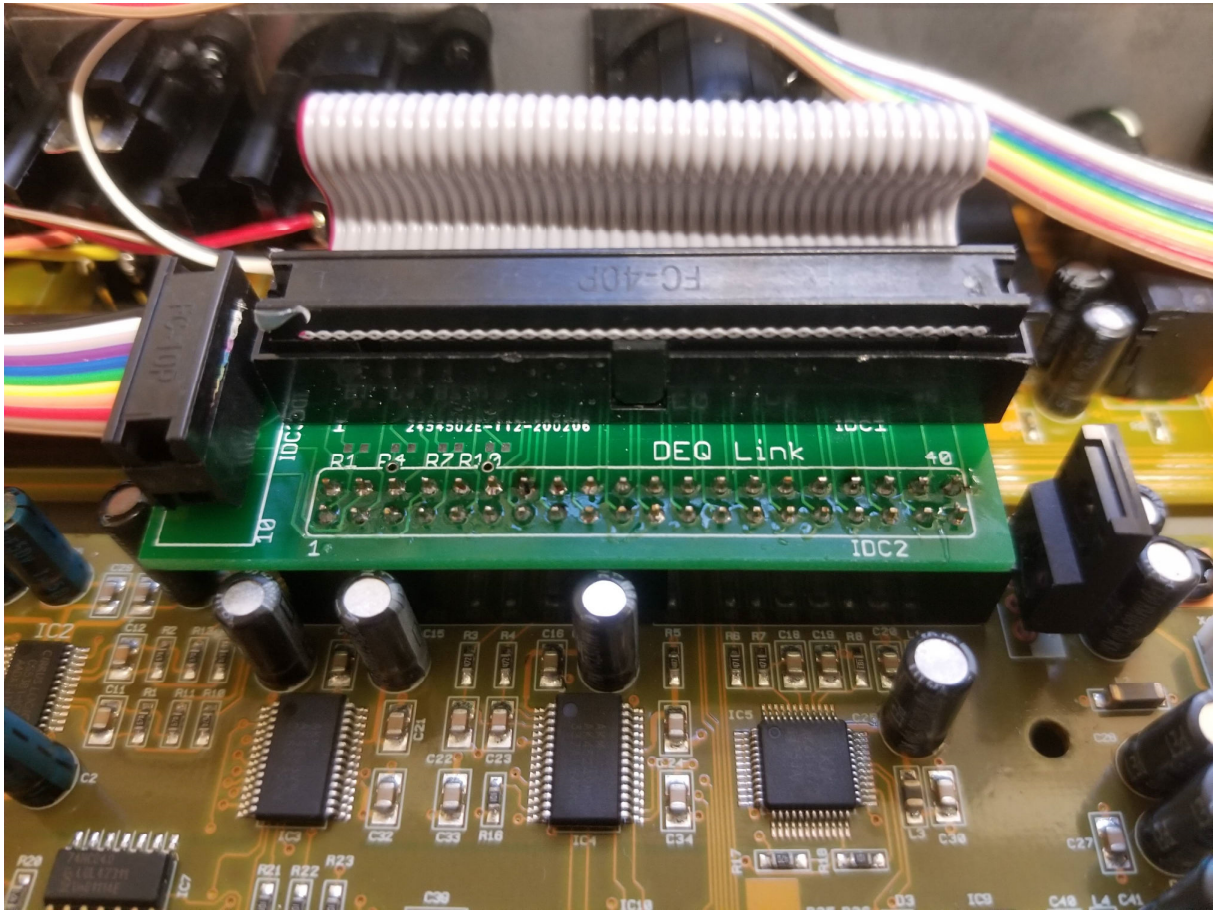
Connect the ribbon from rear PCB to the upgrade PCB 'IDC 2' as shown.



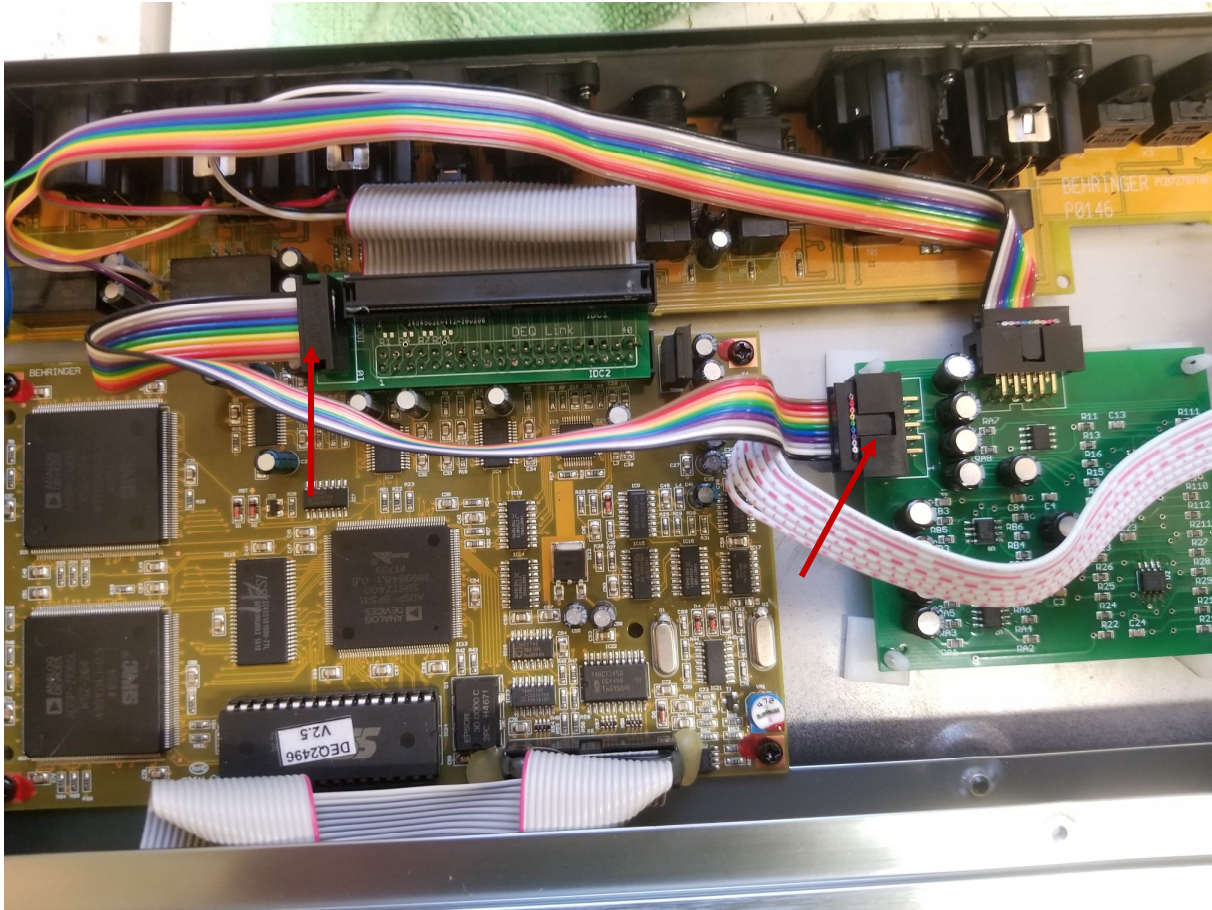
Remove the ferrite clamp from the main ribbon cable (it really does nothing).

Install the Link PCB where the main ribbon used to connect on the main PCB.

Be careful to **ensure the plug goes in centrally**, it is possible to install the plug off-centre because there is no notch.

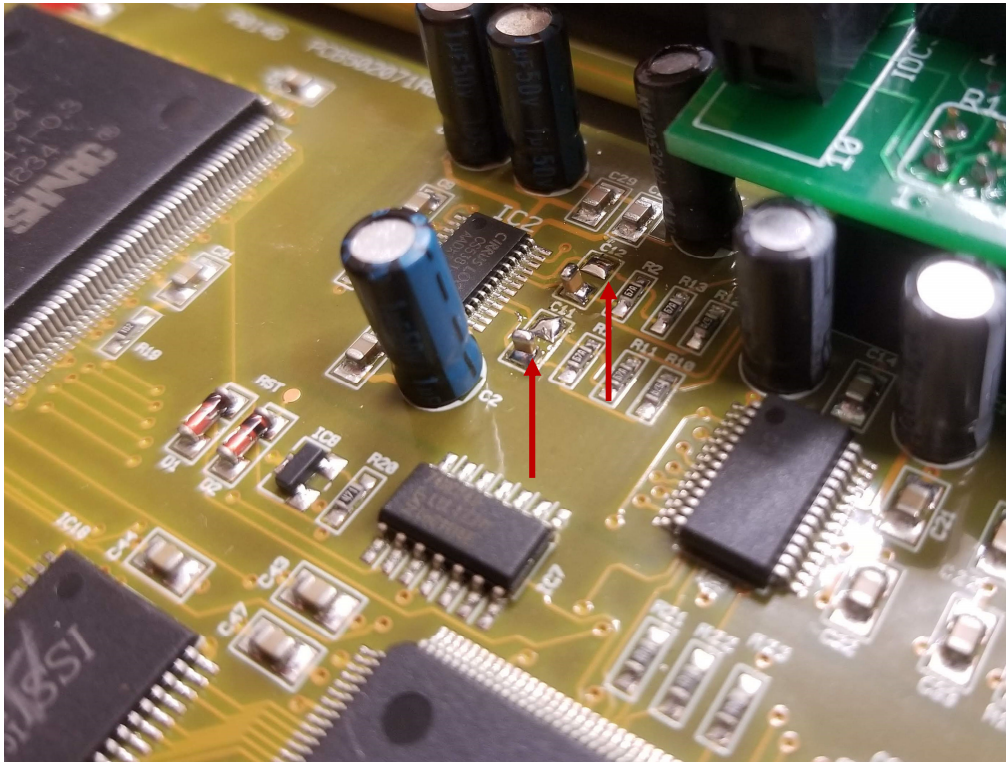


Connect the main ribbon to the top of the Link PCB.



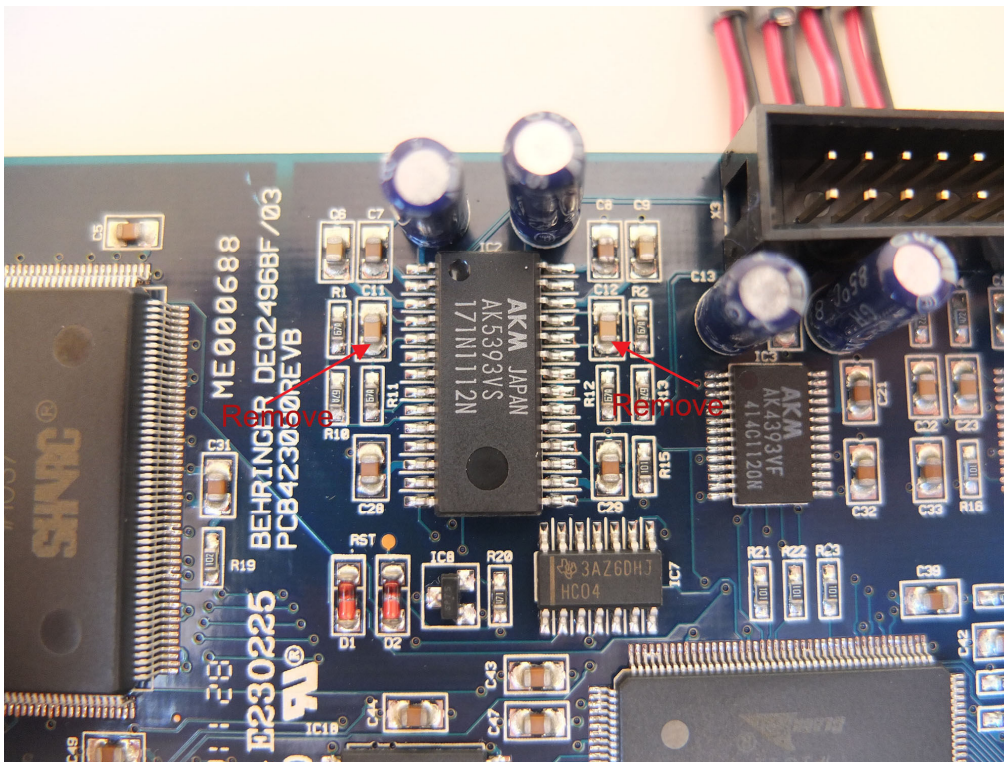
Connect the Link PCB to the Upgrade PCB as shown.

Link PCB to Upgrade PCB IDC 1.

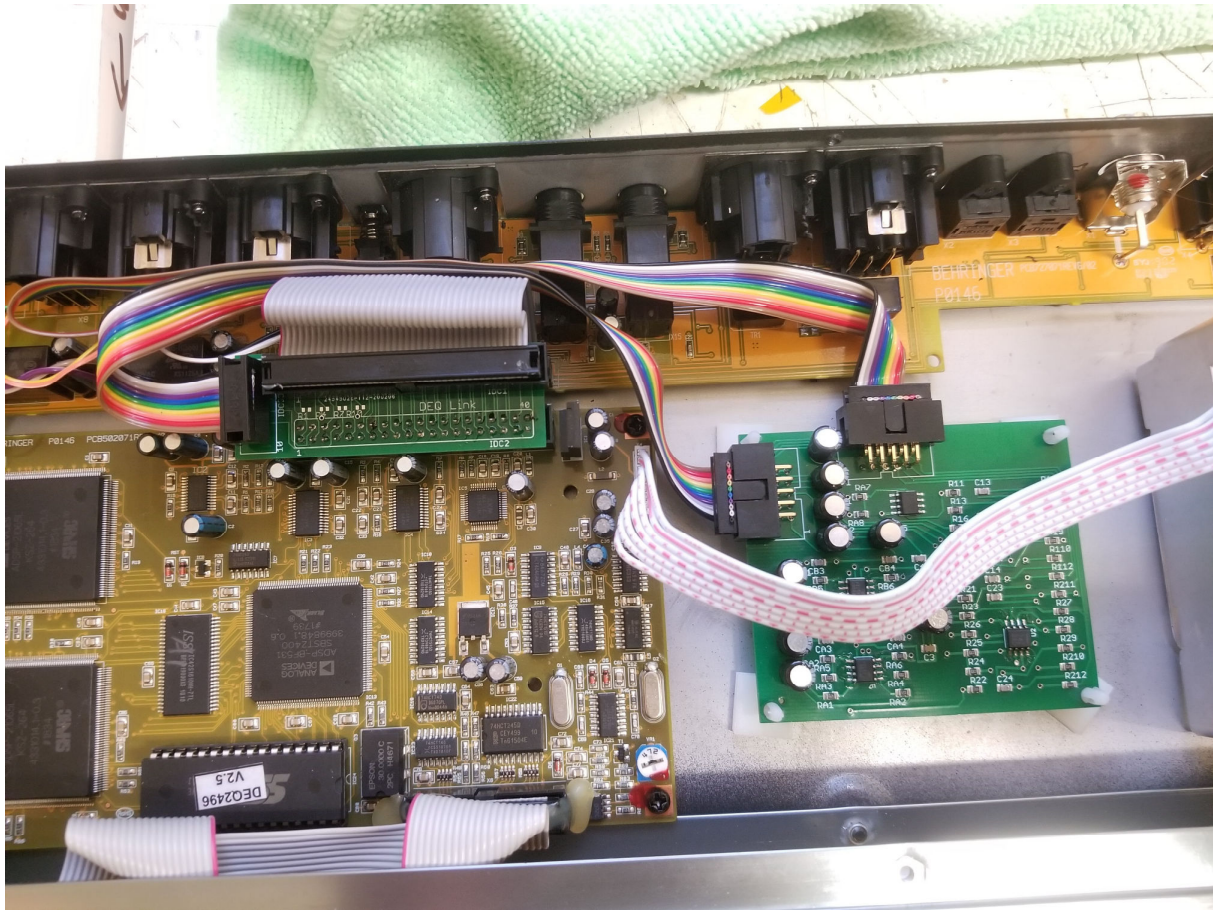


On the Main PCB locate and remove SMD capacitors C11 and C12 with value 1n5 next to the ADC chip IC2.

In this image the capacitors are 'tomb-stoned' (turned upwards and connected on only one end) so they can be put back in the future if desired.



If you have an older DEQ, the SMD caps that need to be removed are shown here either side of the AK5393 chip. They might be C11, C12 or C18, C19. They are always 1n5.



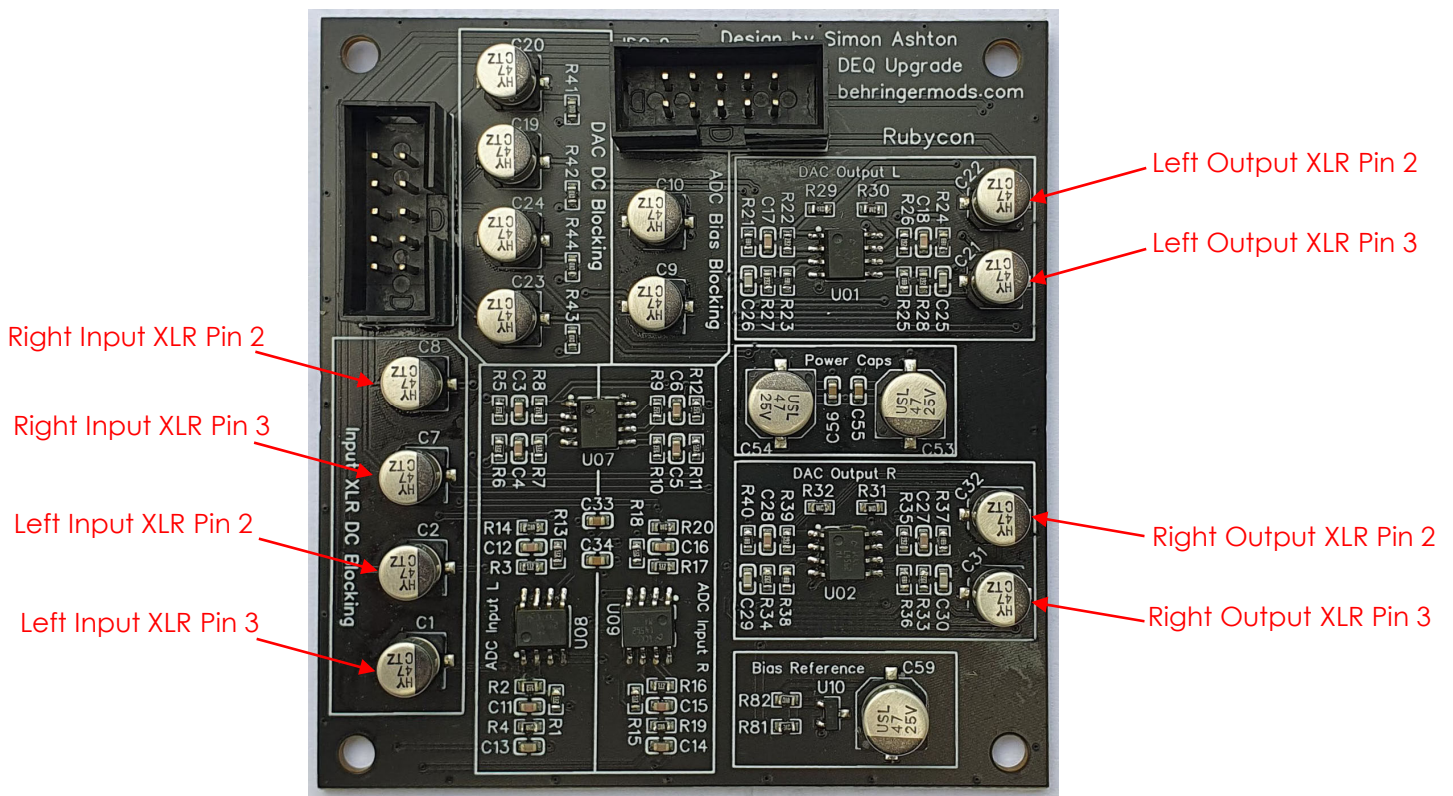
If all went well you should have an upgraded DEQ!

Before turning on the unit for the first time, it is recommended to confirm correct installation by following the troubleshooting details below.

Once you know it is working right, you may like to add some hot glue or silicone sealant to the connections and plugs so they do not shake loose.

Troubleshooting

Ensure the equipment is turned off.
Use a multimeter on continuity or resistance setting to check the following connections are made correctly. The meter should read below 1 ohm.

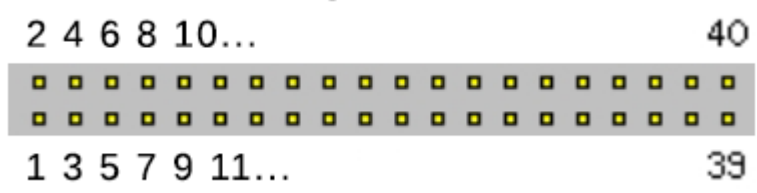
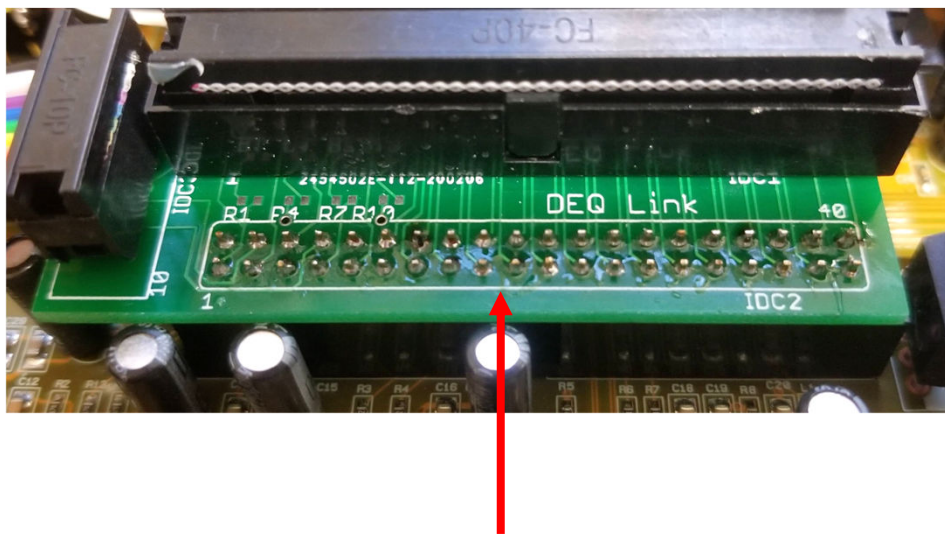
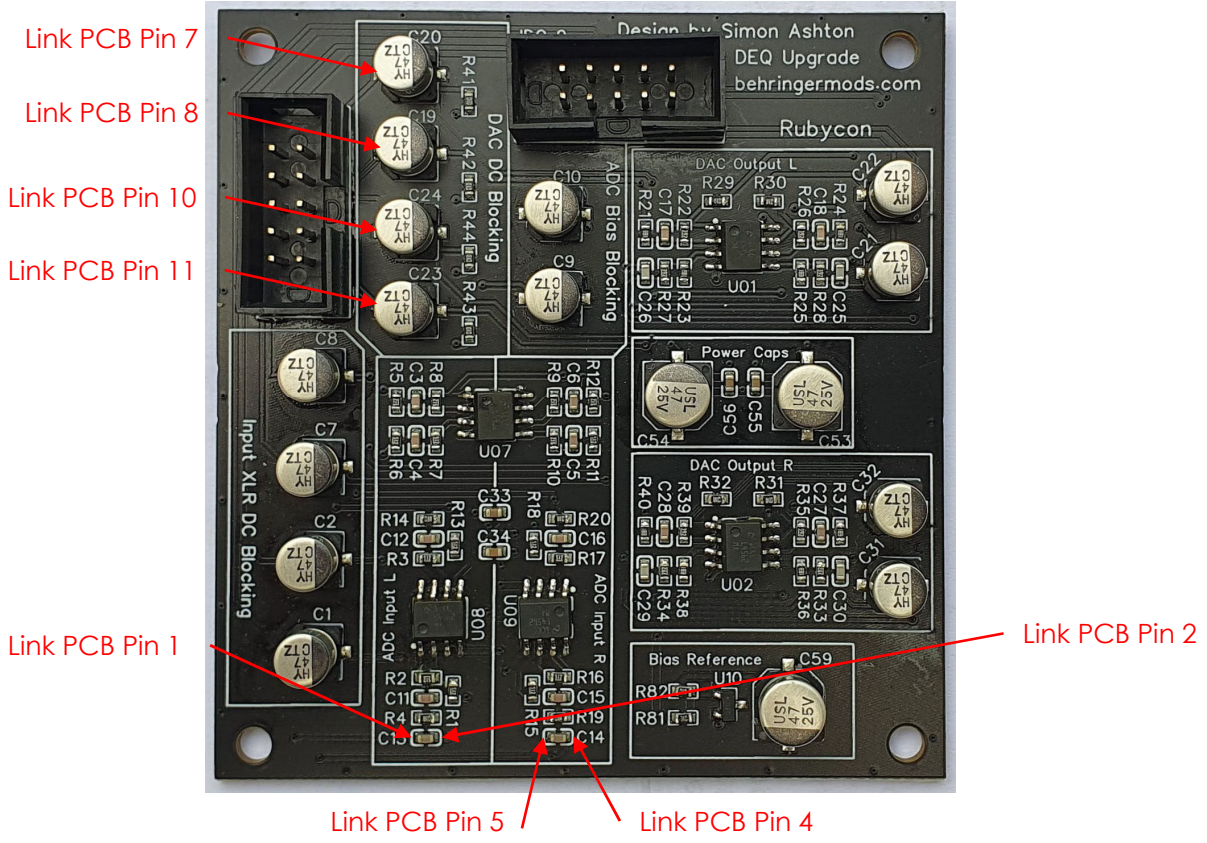


Input XLR



Output XLR





While the equipment is turned off, check there is continuity between the power supply and PCB points shown below.

Ensure that the multimeter probe touches the visible metal part of the PSU plug pins.

