

# Link SDIY

## Assembly Manual

### Revision A

## Introduction

Thanks for purchasing the Link SDIY kit from Evaton Technologies! Link is a module that is useful for bridging two Eurorack cases together, or for making a large number of interconnects between two different areas in a single large Eurorack synthesizer. Link is a passive interconnection module that passes up to 18 control voltage, audio, or gate signals to another connected Link module, over a standard HDMI connection cable. Because Link is completely passive, signals are bidirectional; signals can pass in either direction.

## Skill Level

The Link SDIY kit requires basic soldering skills to complete. While all of the surface-mount components come pre-installed, all remaining components are standard thru-hole components. These instructions assume you already know how to solder.

## Precautions

Soldering irons are **HOT**! Be careful not to touch the business end of your soldering iron at any time. Also note that components that have been soldered will remain hot for a few moments. If you need to hold something to solder it, it is recommended **NOT** to use your fingers. Wear long pants and long sleeves to avoid solder splash from burning exposed skin.

## Tools Required

A few basic electronic assembly tools are needed to complete the assembly of the circuit board.

**Soldering iron.** Minimum 25 watt pencil iron; preferred temperature-controlled, but not necessary.

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**Small wire cutter**

**Electronic solder.** 60/40 lead/tin or 63/37 lead/tin, or lead-free. Use rosin-core solder. Do **NOT** use acid-core<sup>1</sup> (plumbing) solder! Small-diameter solder is preferred (0.039")

**Pair of needle nose pliers** for bending leads and holding components

**Small bench vise or “helping hands”** (optional) for holding the PCB.

**8mm open-end wrench** for tightening jack nuts. In a pinch, a 11/32" wrench or pair of needle nose pliers will work.

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<sup>1</sup> Acidcore music is great. Acid core solder is not.

## Kit Contents

- 2 partially populated printed circuit boards (PCB)
- 8x Green Stereo 3.5mm THONKiconn jacks
- 20x Black Mono 3.5mm THONKiconn jacks
- 2x Stainless Steel, laser-etched faceplates
- 1x HDMI cable
- 4x faceplate screws

## Assembly Instructions

### Preparation

To begin assembly, clear a space on your workbench<sup>2</sup>. It helps to have good lighting, and your tools located where they can be easily reached. Plug in your soldering iron and let it come up to temperature. It helps to have a dampened sponge nearby, to wipe the solder tip on to keep it clean<sup>3</sup>. Place the bare circuit board in the middle of your work area, with the white silkscreen legend facing you.

The next few paragraphs will go step-by-step through the process of assembling the circuit board. You may wish to check these steps off as you go, to keep track of your place.

Note that the instructions listed here are for building one Link module. Repeat the instructions again to build the second module of the pair.

Also note that, while your PCB will have the HDMI connector pre-soldered, the photos in this assembly document show that connector not installed, to make it easier to see the components you will be soldering.

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<sup>2</sup> Hey, that's **my** first step. My bench is always a complete mess!

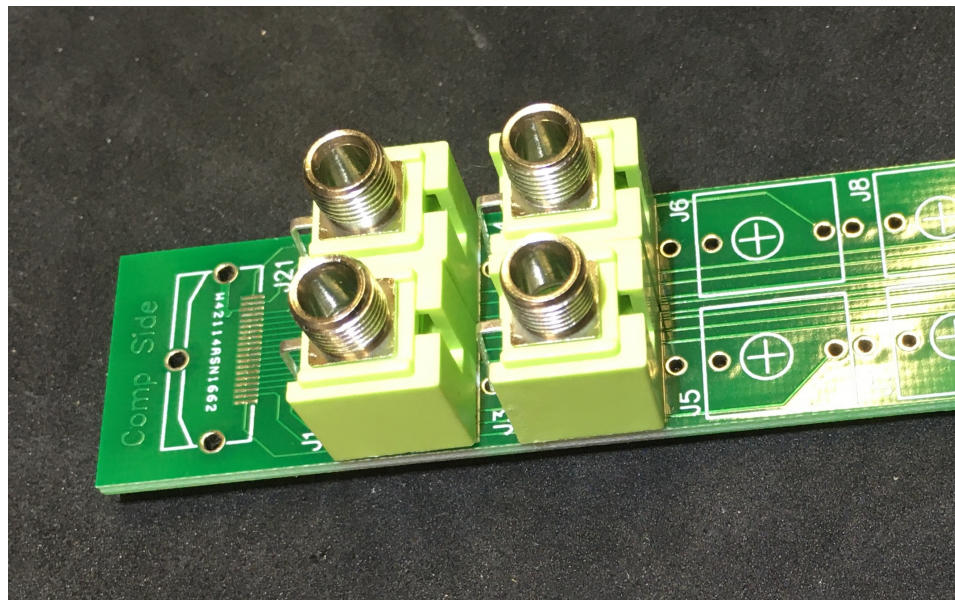
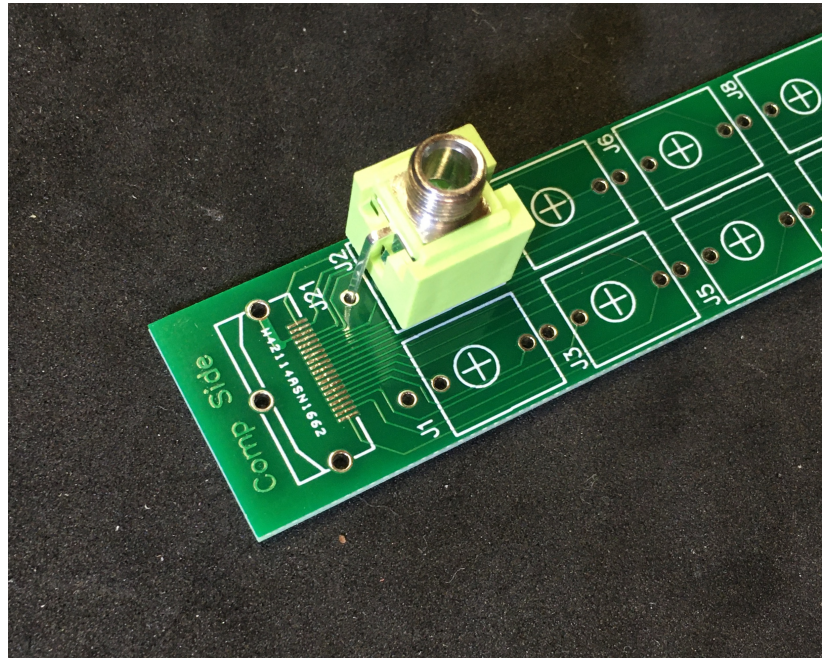
<sup>3</sup> Actually, those nifty brass-wool sponges work even better. Wish I had figured that out 30 years ago...

### Green Thonkiconn Stereo Jacks

J1 thru J4 are stereo 3.5mm jacks. Insert the jack into the holes on the PCB carefully; pay attention to the orientation. The single external leg on the jack points towards the HDMI connector on the board.

For now, only solder the middle of pin of the jack. We'll go back and solder the other two pins later.

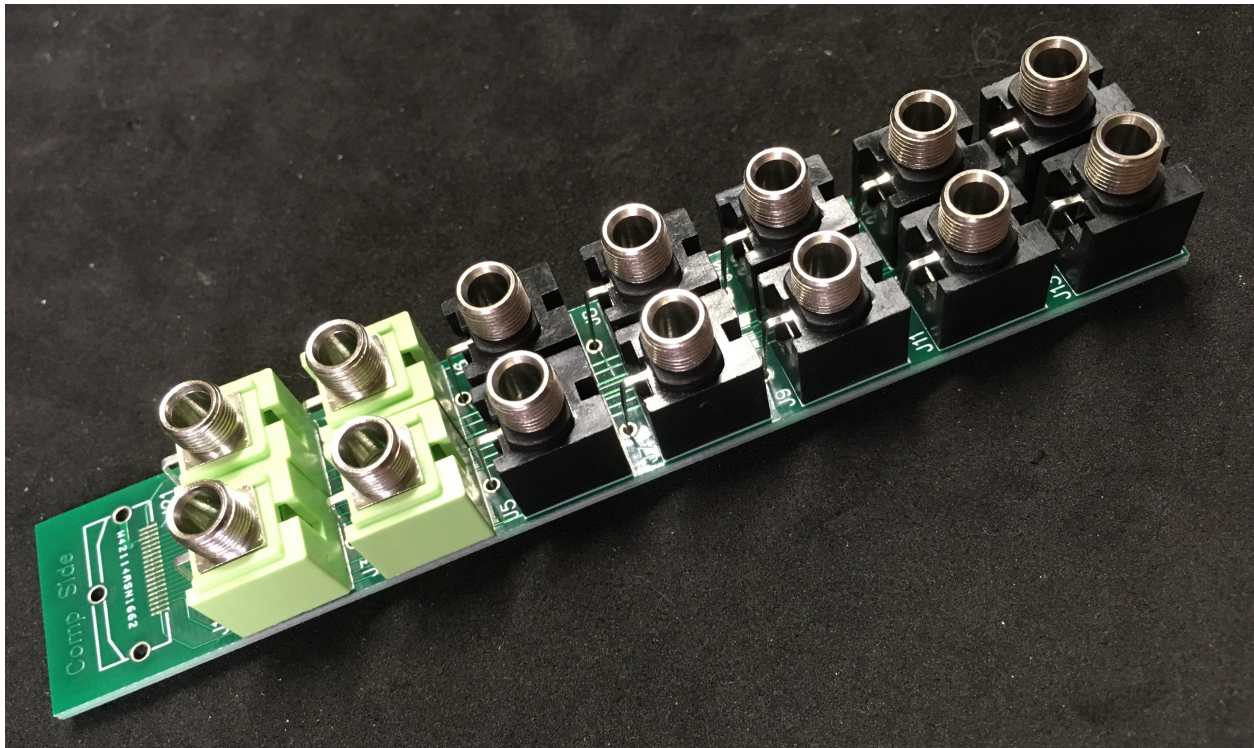
Install all four green jacks as shown, and solder only the center pin.





### **Black Thonkiconn Mono Jacks**

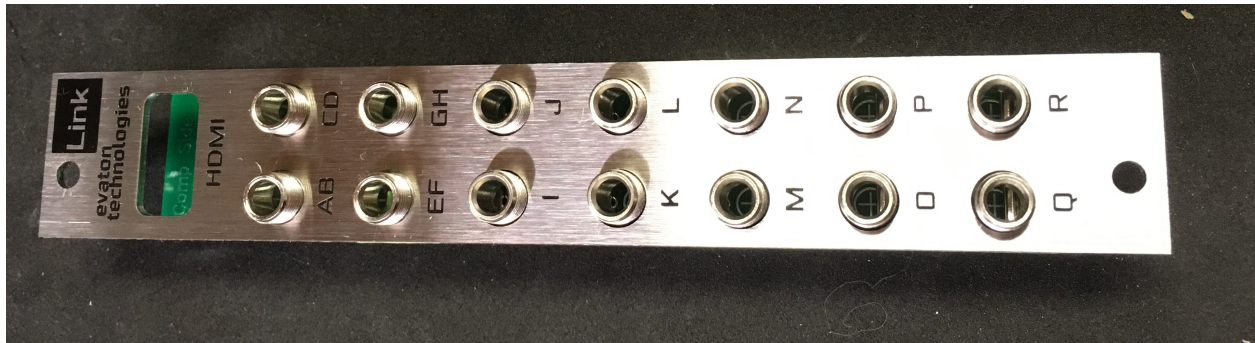
J5 thru J14 are mono 3.5mm jacks. Just like the green stereo jacks, insert the jacks carefully, making sure the external leg is facing the HDMI end of the board. Solder just the middle pin for now.



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### Align the faceplate

Place the faceplate onto the jacks as shown. Now you can see why we only soldered one pin of each jack. If there is a jack that isn't lining up perfectly, melt the solder on the center pin of that jack and reposition the jack while the solder is melted, so that it lines up better. Check all the jacks, and make sure the holes in the faceplate line up with all the jacks. Once you are done, remove the faceplate temporarily.



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### Solder All Remaining Pins

Now that you are sure all the jacks are aligned properly, solder the remaining pins on all the jacks. Make sure you don't miss any; and you may even want to go back and check your original solder joints when done.

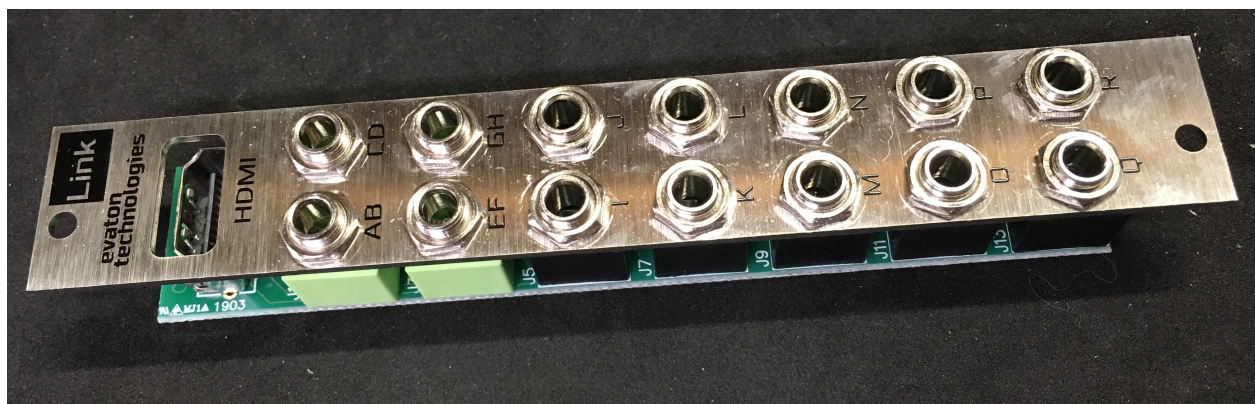
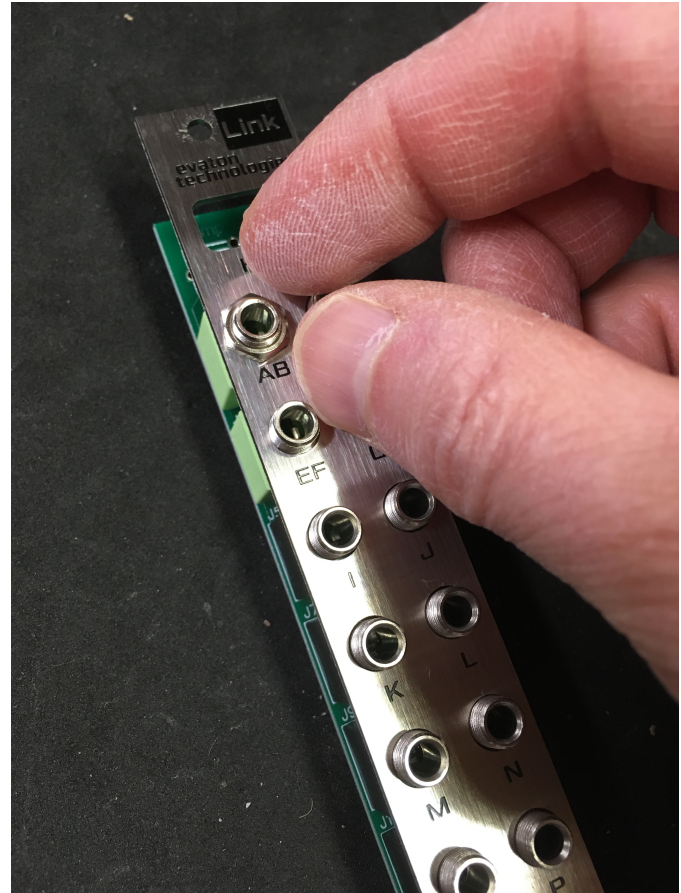


## \_\_\_ Assemble the Faceplate

Put the faceplate back onto the jacks on the module, and finger-tighten a nut onto each jack. Once all the jacks are finger-tightened, use an 8mm or 11/32" wrench or socket to make the nuts snug.

**NOTE: Be careful not to scratch the faceplate while tightening the nuts!**

Stainless steel scratches more easily than anodized aluminum. You may wish to wrap your wrench or pliers in adhesive tape before tightening the nuts, to help avoid scratching the faceplate. Stainless steel was used in order to get the correct stackup thickness needed by the HDMI connector to allow the HDMI plug to fully seat, and anodized aluminum was not available in that thickness.



### \_\_\_ Assemble the other module

Repeat the above instructions to assemble the second Link module. Follow the instructions in the user manual on how to install and use your Link modules!

### **Congratulations!**

With some skill and a little luck, you should now have a fully functioning RF Nomad that you built yourself. Congratulations!

Please join the Evaton Technologies user forums at:

<http://www.evatontechnologies.com/apps/forums>

Or, follow us on Facebook at <https://www.facebook.com/evatontechnologies>

And please join the mailing list: <http://www.evatontechnologies.com/join>

If you have any questions, mail [info@evatontechnologies.com](mailto:info@evatontechnologies.com) or check out the RF Nomad FAQ at <http://www.evatontechnologies.com/rf-nomad>

### **Warranty**

Regretfully, because this is a DIY project, Evaton Technologies cannot warrant the finished project, but please do contact [info@evatontechnologies.com](mailto:info@evatontechnologies.com) if you have any questions or concerns with your DIY kit, and Russ will try to help you out.