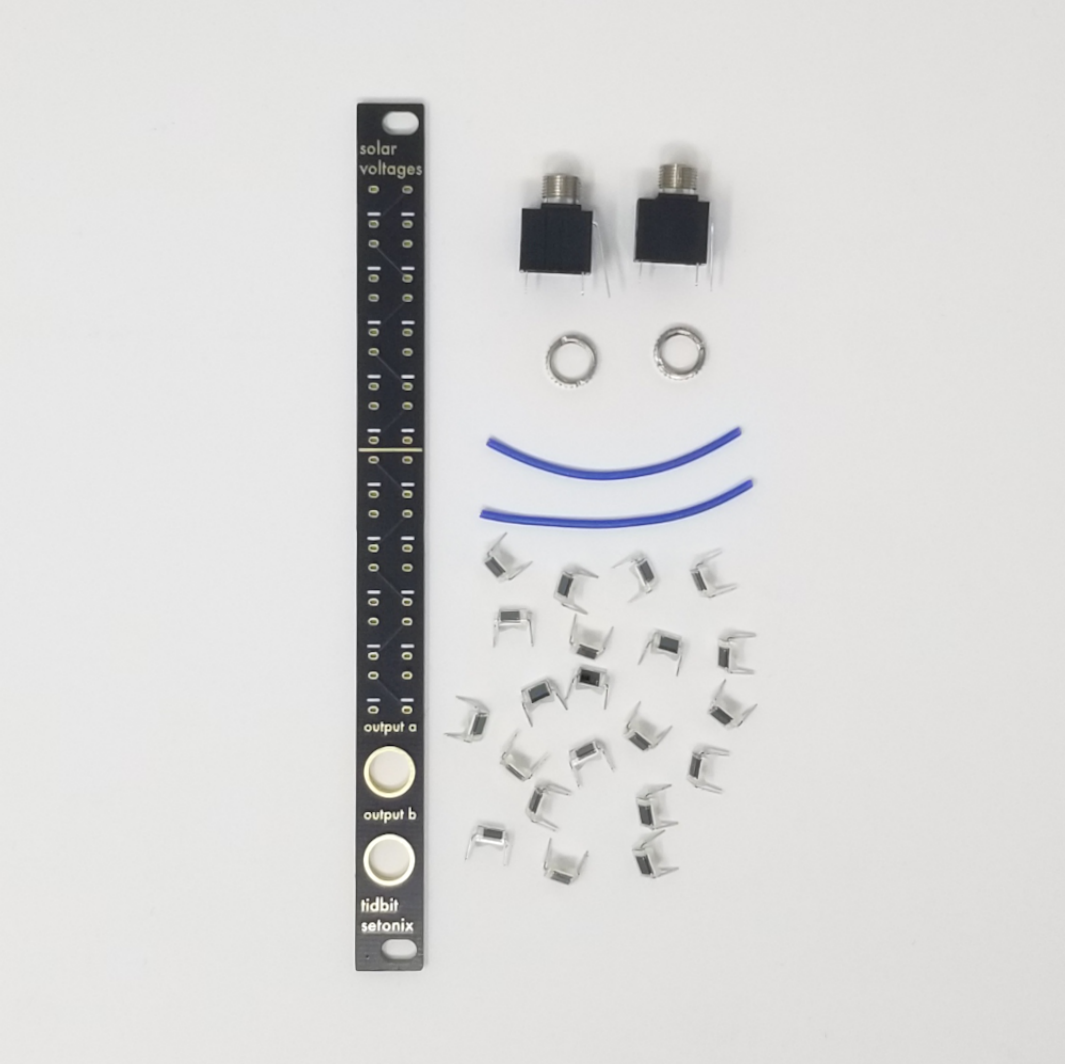


Solar Voltages Dual Light-Controlled Voltage Source - Eurorack

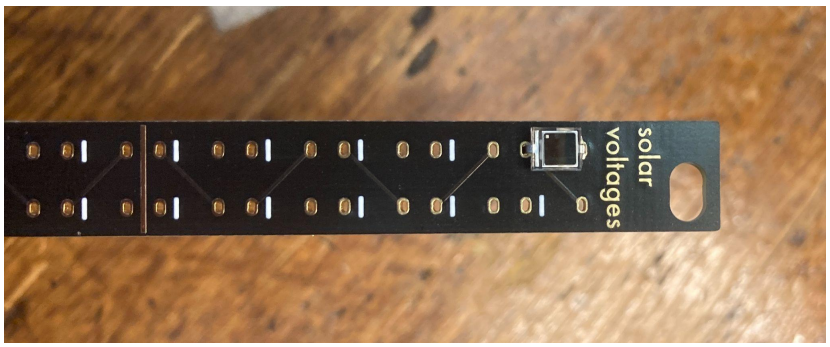
Assembly Instructions - Eurorack (2hp)

Hello and thank you for using the Solar Voltages DIY kit. We hope you have a fun build!

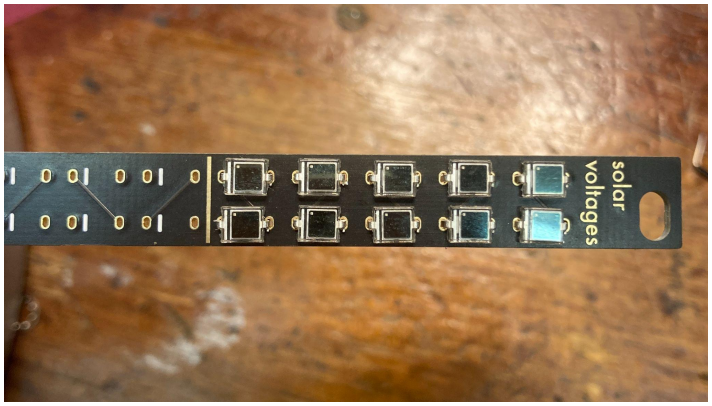
The Solar Voltages kit contains:
1x PCB with SMT capacitors pre-installed
20x Photodiodes
2x Thonkiconn Jacks + Knurled Nuts
2x 1” stranded core wires

To build this DIY Kit you will need:
-Soldering iron
-Good solder (recommend lead free no-clean type, Kester brand or similar)
-Wire stripper
-Edgecutters
-Table vice (recommended)
-Blue painter’s (highly recommended) or masking tape

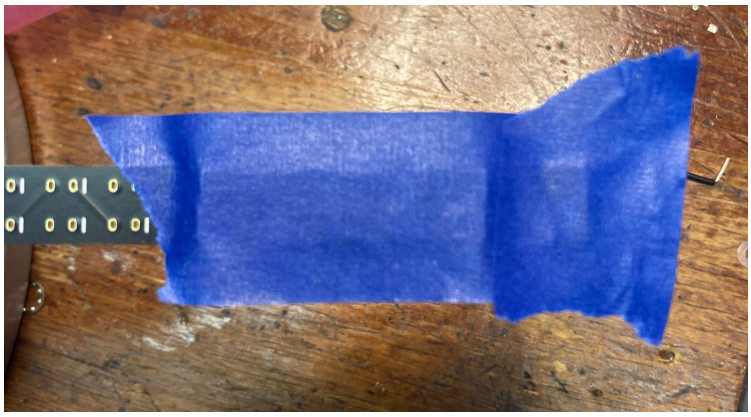
Assembly Instructions:



1. Place the PCB face up, holding it secure with a table vice or similar. Begin placing the Photodiodes in the appropriate footprints. **Note that the Photodiodes are polarized! The side with the dot and line corresponds to the silkscreen line on each footprint. Each Photodiode must be installed facing the same direction, i.e. downwards if looking at the module head-on, in order for it to work.**

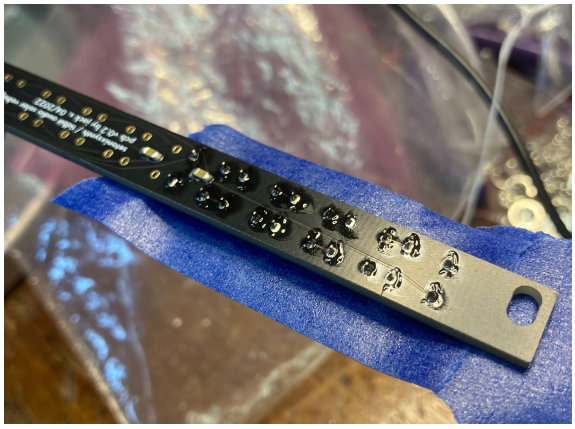


2. Stop after you have placed a few photodiodes and double check that they are all facing the right direction. We did 10 Photodiodes at once in this example, but 4-6 at a time is probably easiest.



3. Place a strip of Painter's or Masking Tape over the photodiodes and stick the tape to the board on either side. This will hold the Photodiodes in place.

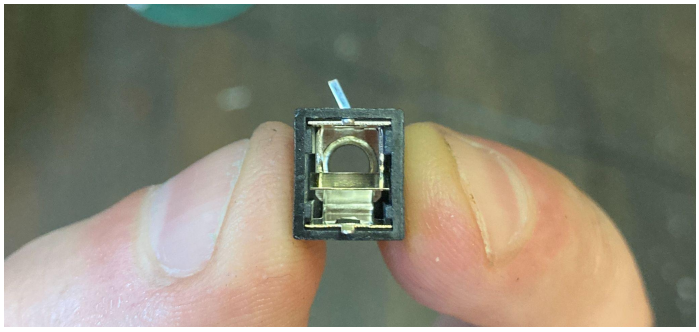
4. Flip the board over and place it in your table vice so it is held securely once again.



5. Solder the legs of every Photodiode. Make sure each pad has a good connection with enough solder, that you don’t miss any, and that you don’t mistakenly solder any pads that don’t yet have Photodiodes placed!

6. Repeat steps 2-5 until all the Photodiodes are soldered in place. When you’re done, every Photodiode should be facing the same direction with the dot and line facing downwards.

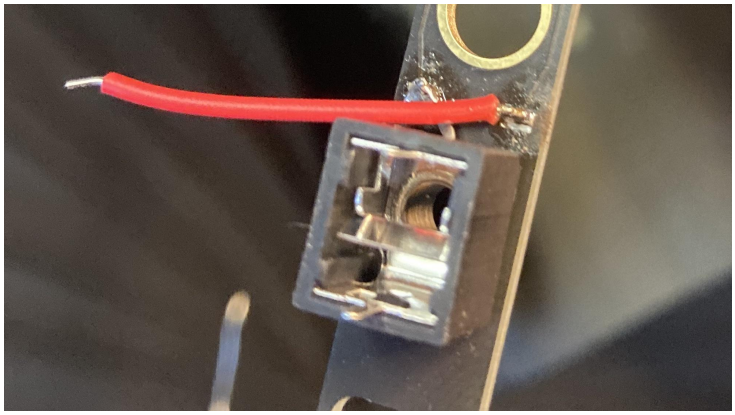
7. Use your soldering iron to “tin” the four pads near the bottom of the PCB labeled “+” and “-”, coating them with solder.



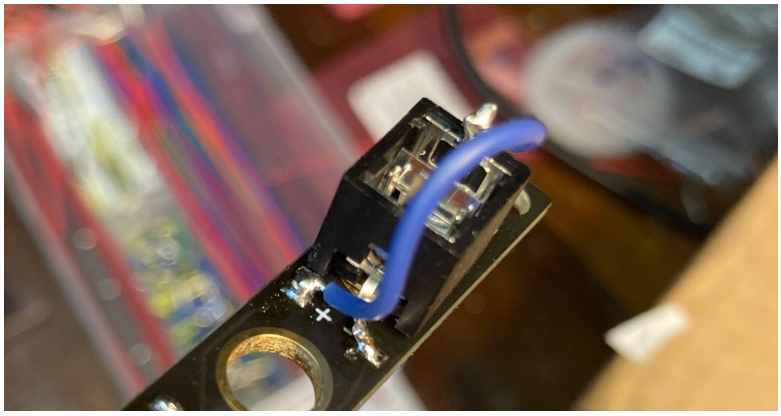
8. Prepare your first Thonkiconn jack. Bend the Ground pin towards the front of the jack and to the left as shown in the above picture. Clip it using your Edgecutters so it is about ¼” or 7mm long. It might also be a good idea to “tin” the Ground leg.

9. **Start with the Bottom jack**. Place the Thonkiconn in its hole so it sits in place and is relatively straight behind the PCB. Before you solder anything, use the knurled nut to secure the Thonkiconn jack to the PCB, ideally using a knurled nut driver tool. Solder the Ground pin directly to the pad labeled “-”.

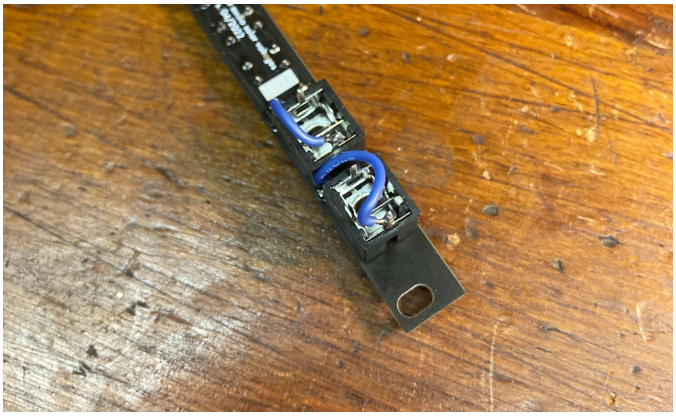
10. Strip about 1-2mm off each end of a wire and tin each end so it is well coated in solder.



11. Use your soldering iron to heat the pad labeled “+” above your jack. Place the end of your wire on the pad so that it is soldered in place.



12. Solder the other end of your wire to the rear signal pin of your Thonkiconn jack, making sure the wire is well connected to both the pad and the jack. If you have a Multimeter, you can use it to test continuity between the two sides of each surface mount capacitor installed on the PCB.



13. Once you are sure the lower jack is well soldered, Repeat steps 8-12 for the upper jack. When you are satisfied, that’s it! You have completed your Solar Voltages build and it’s ready for testing.

You can make sure it’s working by monitoring the output voltages using a Multimeter in response to light, or simply patch it to other modules and start playing with it.

Enjoy your Solar Voltages!