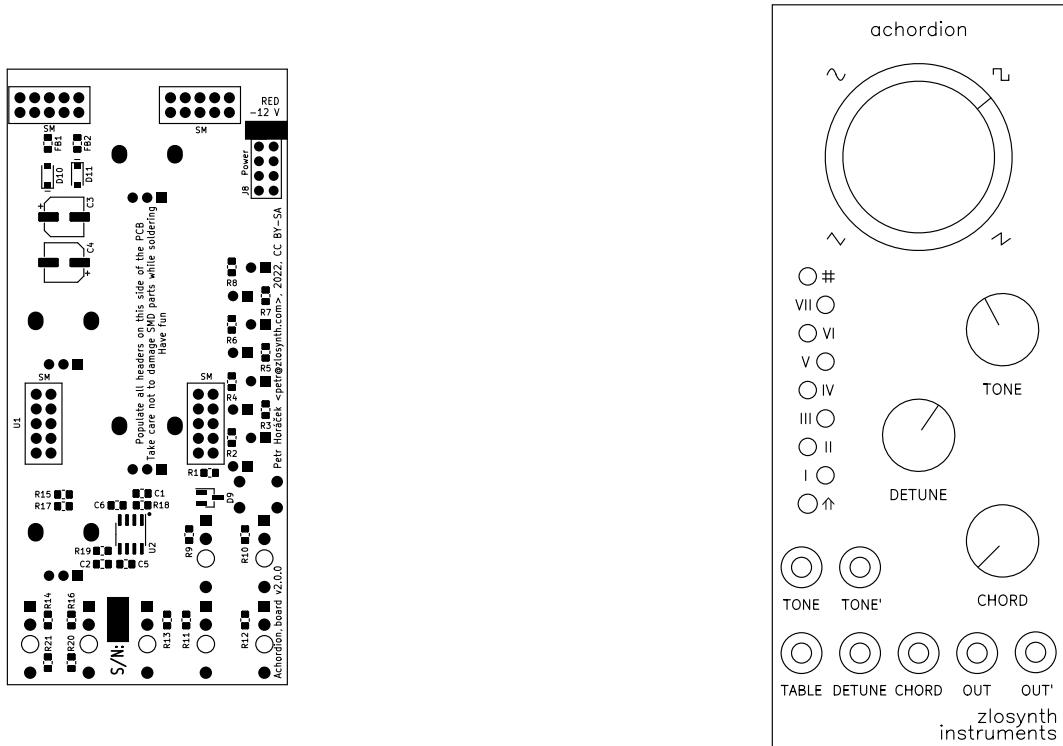


## Achordion – Build Manual



## 1 Overview

You can always find the latest version of this build manual on <https://zlosynth.com/achordion/build-manual.pdf>.

This kit contains a printed circuit board (PCB) with all the SMD parts already pre-soldered. The through-hole components are left to be assembled by you.

Pay attention to the orientation and position of all the parts. Desoldering them would be difficult and may break the module. Also be careful not to touch the pre-soldered SMD parts with the soldering iron. Read through the whole manual first. Make sure you understand all the steps before you start soldering.

## 2 Tools required

- Soldering iron
  - Masking tape
  - Small flat head screwdriver
  - Side-cutters

### 3 Bill of materials

Start by unpacking all baggies into a bowl, so you don't lose any components.

- 1 × Front panel
- 1 × PCB
- 1 × Daisy Patch Submodule (the yellow board)
- 4 × Potentiometer, M7 nut and washer
- 1 × Big knob
- 3 × Small knob
- 7 × 3.5mm jack socket, M6 nut and washer
- 1 × Tactile switch
- 8 × Red LED
- 1 × Male connector 2×5
- 4 × Female connector 2×5

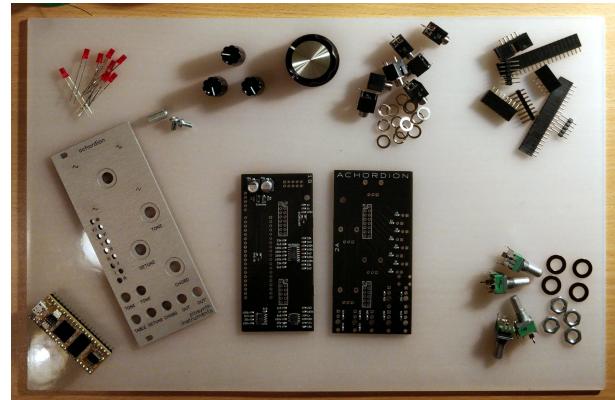


Figure 1: All the components laid out

### 4 Daisy Patch Submodule

The Daisy Patch Submodule is connected to the main PCB through a set of connectors.

1. Mount the four female 2×5 connectors on the pins of Daisy Patch Submodule. See figure 2. This will make it easier to properly align all the connectors.
2. Plug the connectors of the submodule into the PCB through footprints marked as "SM". Make sure to put it on the correct side of the PCB, where all four connectors are marked.
3. Solder all the pins in.
4. Once done, carefully detach Daisy Patch Submodule to prevent it from getting damaged while progressing with the build.

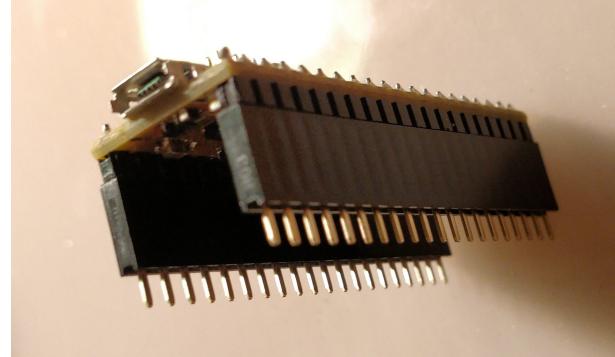


Figure 2: Connectors mounted on the submodule

### 5 Power

The next step is to solder on the power connector.

1. Take the male 2×5 connector and put it through the footprint marked as "Power". Make sure to put it on the correct side of the PCB.
2. Solder all the pins in.

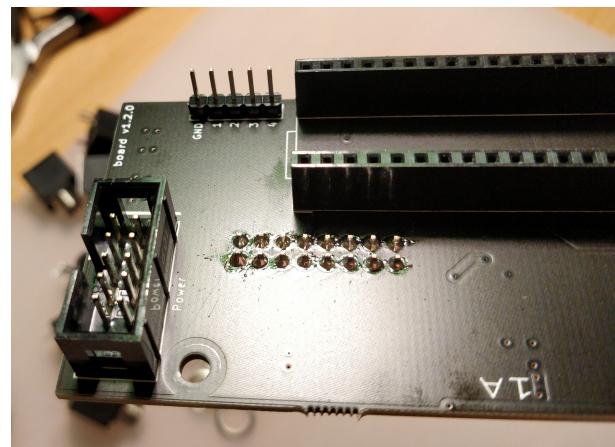


Figure 3: The submodule and power connectors

## 6 Front panel

Now when all the internal parts are soldered, the next step would be to assemble parts sitting in the front panel.

1. Place all potentiometers in the PCB, do not solder them yet. The big legs on sides are used to snap the pot in.
2. Put all jack sockets into the PCB.
3. Put LEDs in place. The cathode (shorter leg) goes through the hole closer to the edge.
4. Snap in the switch. Take care not to bend its leg. Don't push the switch all the way to the PCB. See figure 4.
5. Now when all parts are in, carefully put the front panel on them. Be patient aligning all parts so they fit through holes. The switch may be a little problematic, if you see it not getting through, use tweezers to align its bottom part. Don't worry about the LEDs for now.
6. Put washers on the pots and jacks. See figure 5.
7. Tighten all the potentiometers and jack sockets in place with their nuts. Take care not to scratch the panel. Plastic tools are preferred, steel drivers should also serve well. If you only have pliers, put them in a thick plastic bag. Protect the panel!
8. Solder in all the potentiometers and jacks. Only solder the three smaller terminals of each potentiometer.
9. Use a masking tape on the portion of the panel with holes for LEDs, see figure 6. Push the LEDs against the tape so they are even with the panel surface.
10. Solder the LEDs. Then snap their legs off.
11. Use tweezers to align the switch. The button should be holding right angle against the panel, with about 2 mm of it sticking out. Test that the button can be easily clicked and returns to its resting position.
12. Once the button is in a satisfying position, solder one of its legs, double check it can be clicked and that it returns, then solder the remaining legs.

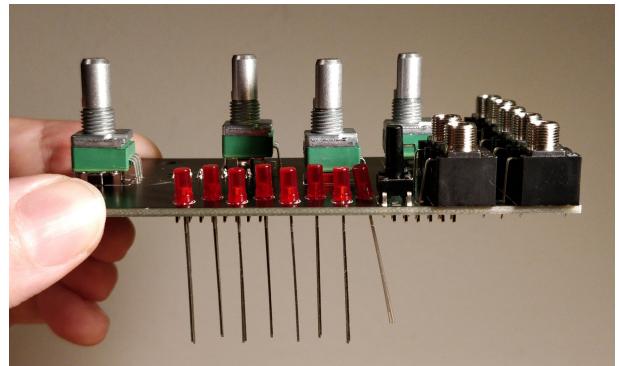


Figure 4: Side view with the front components in



Figure 5: Pots and jacks with their washers on



Figure 6: Taped LED holes

## 7 Knobs

You can now put knobs on the potentiometers.

1. Put the big knob on the topmost potentiometer. Use a small flat screwdriver to tighten the screw of the pot. The screw should be pressing against the flat part of the shaft. Keep some distance between the knob and the panel.
2. Put smaller black knobs on the remaining pots. Align them with the D-shaped shaft and press them in. You may need to pull them a little bit if you see they are scratching the nut.

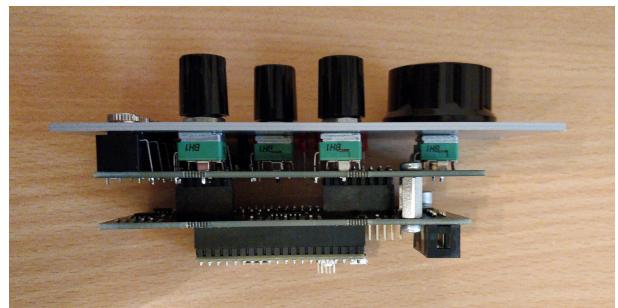


Figure 7: Side view of the assembled module

## 8 Final assembly

Connect the Daisy Patch Submodule to the main PCB to complete the build.

## 9 Congratulations

The module is now complete. Have fun!

You can find the user manual on <https://zlosynth.com/achordion/user-manual.pdf>.



Figure 8: Front view of the assembled module