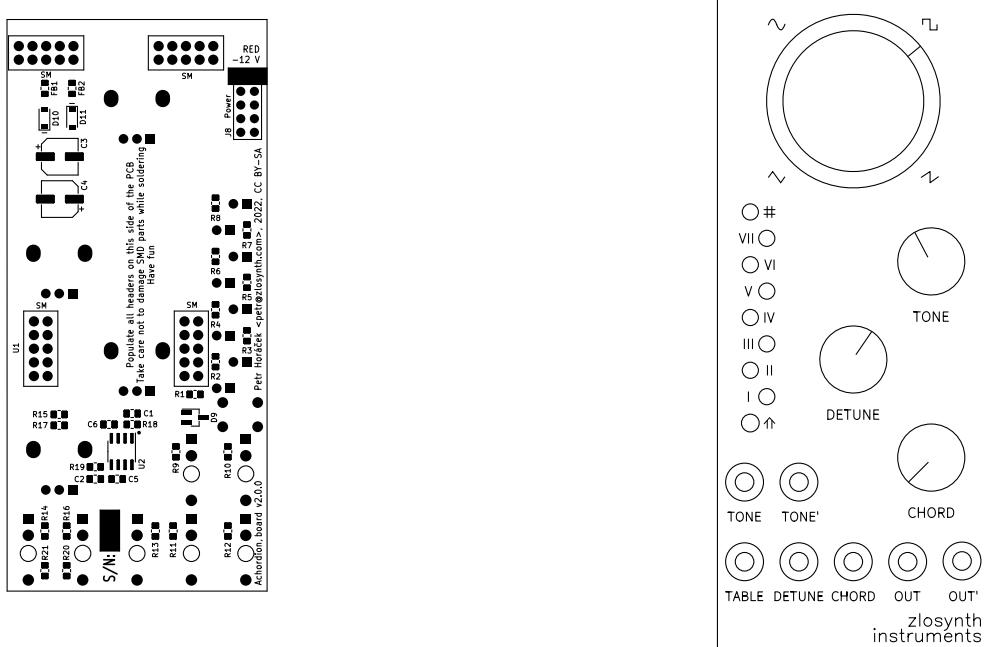


# Achordion – Build Manual



## 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 surface mount device (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 (the black board)
- 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 button
- 8 × Red LED
- 1 × Male connector 2×5
- 4 × Female connector 2×5

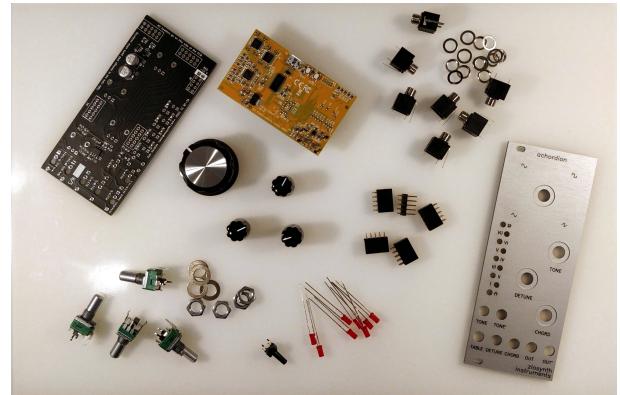


Figure 1: All the components laid out

### 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 the Daisy Patch Submodule. See figure 2. This will make it easier to align all the connectors properly.
2. Plug the connectors of the submodule into the black PCB through footprints marked as "SM". Make sure to put them 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. It may be a little difficult. Pull each connector by a millimeter at a time.

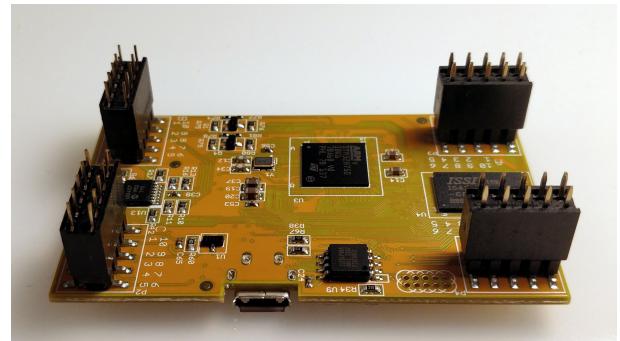


Figure 2: Connectors mounted on the submodule

### 5 Power

The next step is to solder on the power connector.

1. Take the male 2×5 connector and put the side with shorter legs through the footprint marked as "Power". Make sure to put it on the correct side of the PCB.
2. Solder all the pins in. The result is illustrated in figure 3.

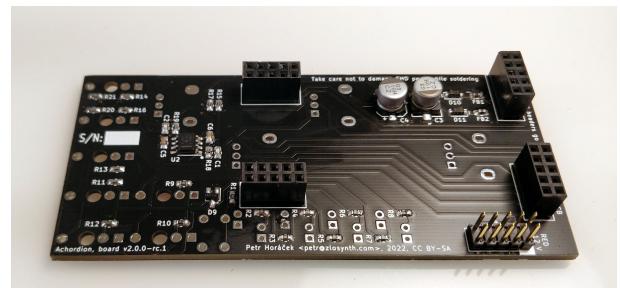


Figure 3: The power and submodule connectors

## 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. Snap in the button. Take care not to bend its leg. Don't push the button all the way to the PCB. See figure 4.
2. Place all potentiometers in the PCB, do not solder them yet. The big legs on the sides are used to snap the pot in.
3. Put all jack sockets into the PCB.
4. Put LEDs in place. The cathode (shorter leg) goes through the hole closer to the edge.
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 button 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. Pot washers fit tightly into the panel, don't be afraid to push them in.
7. Tighten all the potentiometers and jack sockets in place with their nuts. Take care not to scratch the panel. Plastic tools are prefered, and 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, even with the panel surface.
10. Solder the LEDs. Then snap their legs off.
11. Use tweezers to align the button. About 2 mm of the button should be sticking out of the panel. 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, and solder the remaining legs.

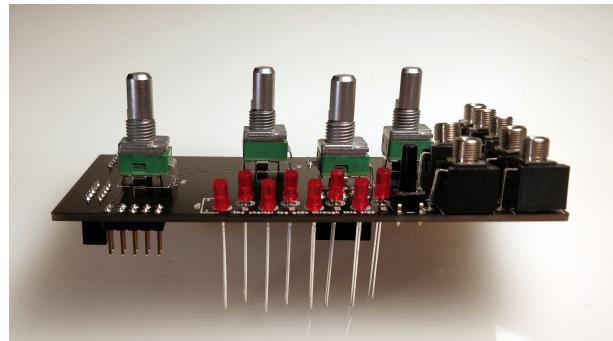


Figure 4: Side view with the front components in



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. The silver part of the big knob is protected with a sticky foil. Peel it off.
2. 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.
3. 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 black 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