

## 2. Assembly manual

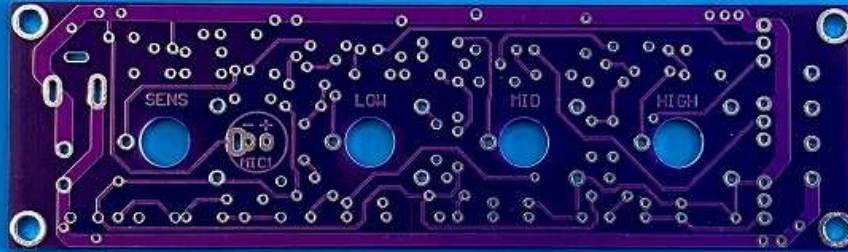
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### Analyzing the PCB

Component side:



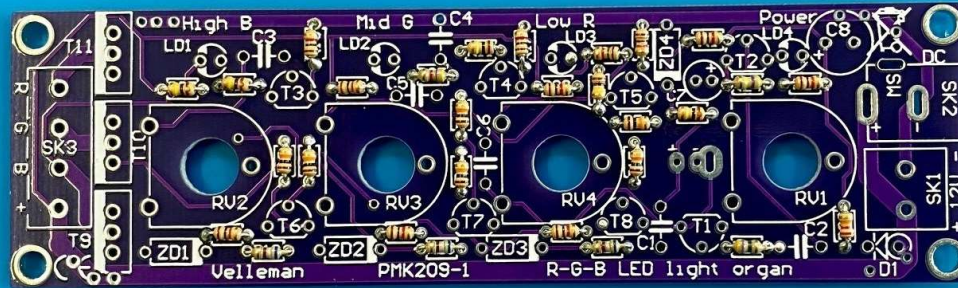
Solder side:



## Assembly

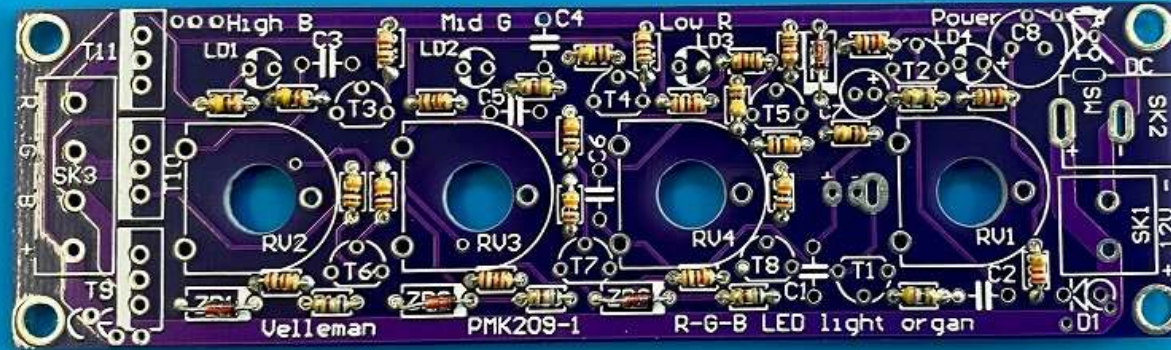
### 1. Resistors

- 10 x 1K ohm (brown, black, red): R1, R2, R6, R7, R8, R16, R17, R18, R28, R29
- 6 x 10K ohm (brown, black, orange): R3, R4, R5, R13, R14, R15
- 5 x 100K ohm (brown, black, yellow): R9, R10, R11, R12, R27
- 3 x 680 Ohm (blue, grey, brown): R19, R20, R21
- 1 x 4M7 ohm (yellow, purple, green): R22
- 1 x 22K ohm (red, red, orange): R23
- 1 x 470K ohm (yellow, purple, yellow): R24
- 1 x 4K7 ohm (yellow, purple, red): R25
- 1 x 1K5 ohm (brown, green, red): R26



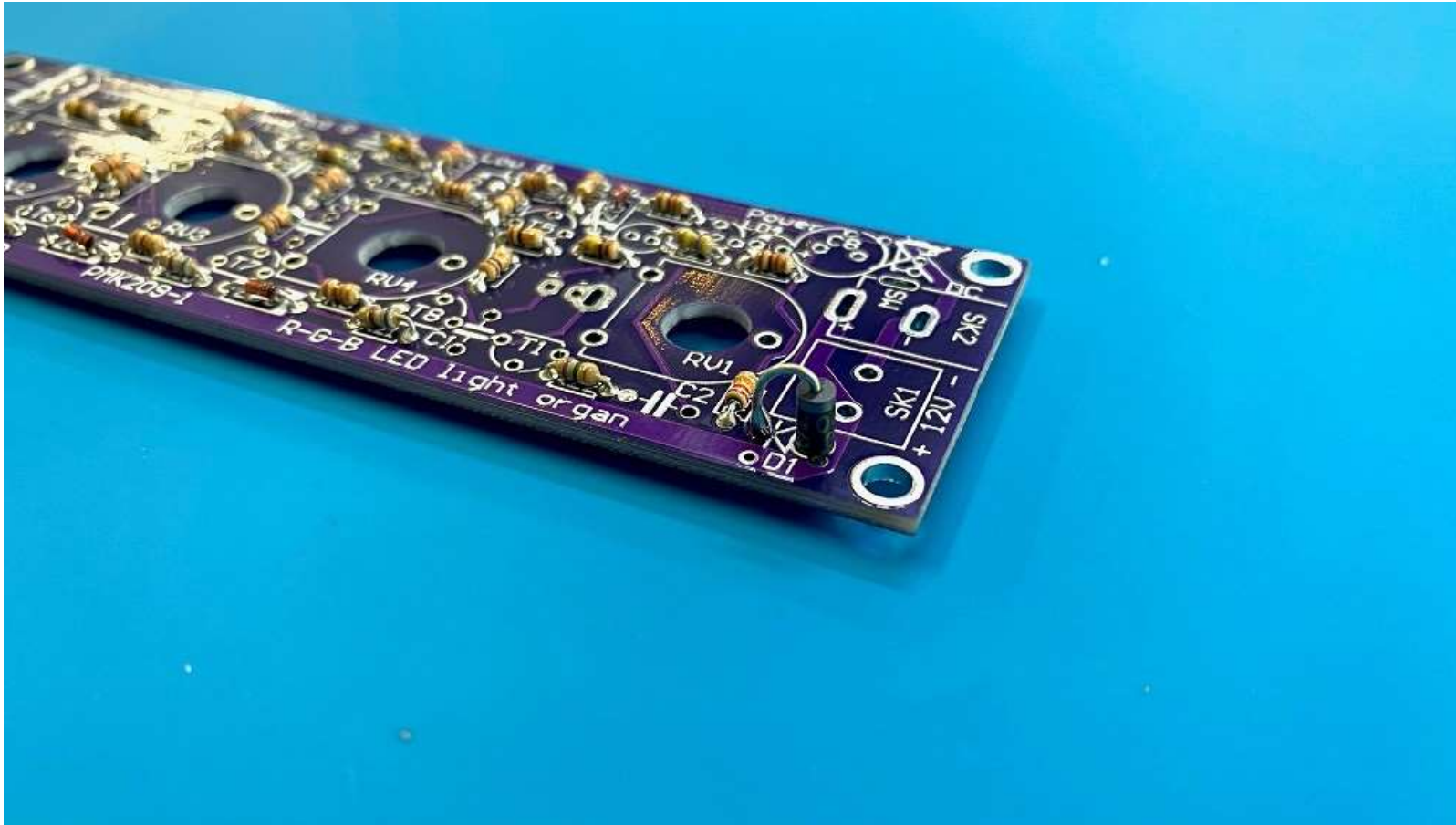
## 2. Zener diode

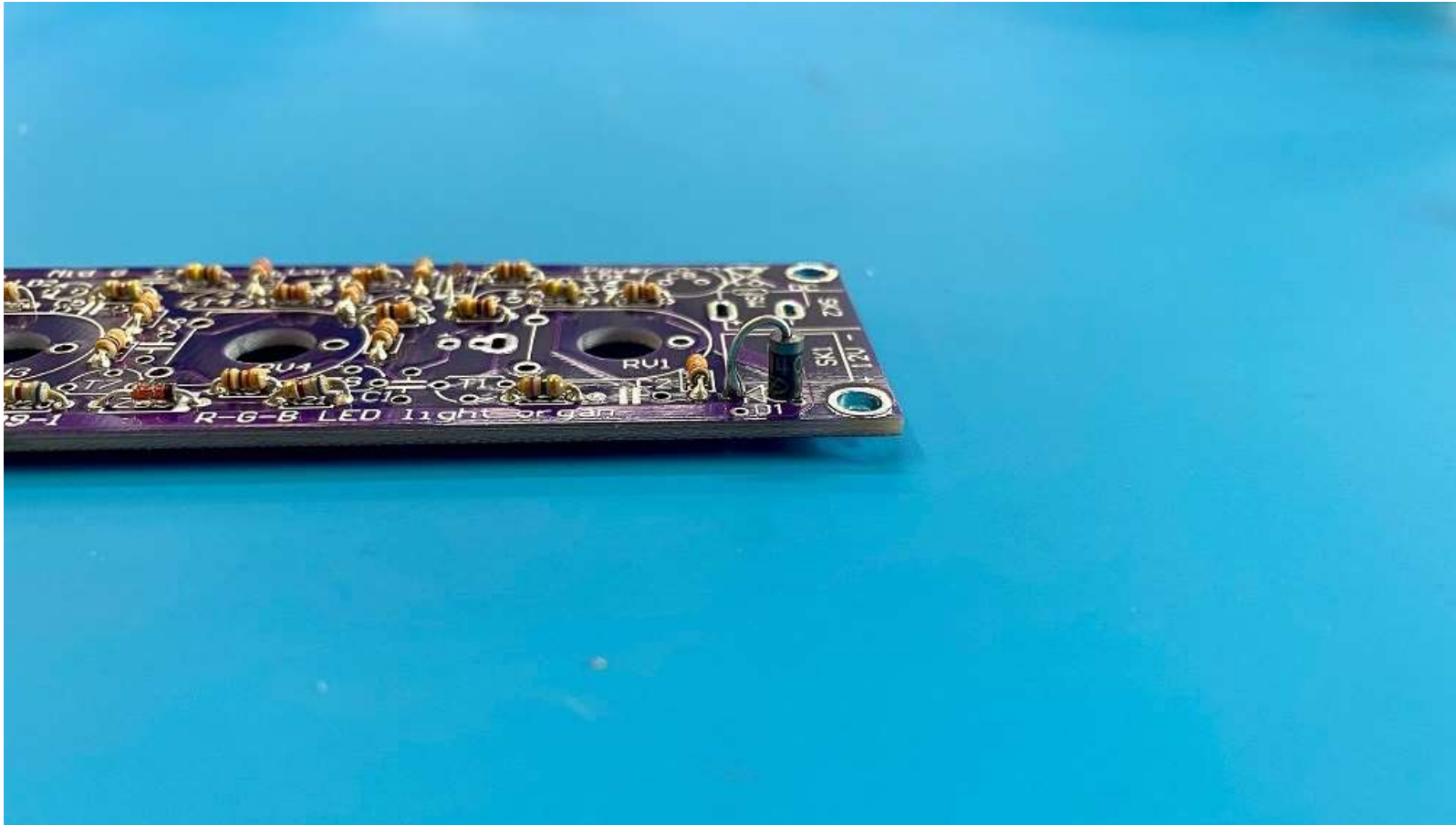
- 4 x Zener diode 15V- 500mW: ZD1, ZD2, ZD3, ZD4 - **Watch the polarity!**



### 3. Diode

- 1 x Diode 1A - 1000V 1N4007: D1 (mount vertical!) - **Watch the polarity!**





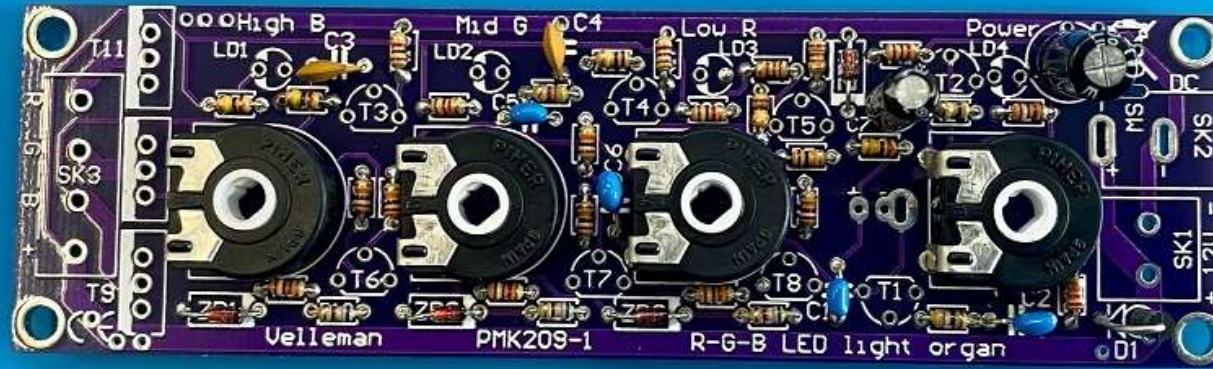
#### 4. Capacitors

- 3 x Ceramic multilayer capacitor 100nF [104]: C1, C2, C5
- 1 x Ceramic multilayer capacitor 220nF [224]: C6
- 2 x Ceramic capacitor 4.7nF [472]: C3, C4
- 1 x Elco radial 10 $\mu$ F / 35V: C7
- 1 x Elco radial 100 $\mu$ F / 35V: C8

Watch the polarity!

#### 5. Potentiometers

- 4 x Potentiometers piher trimmer 10K: RV1.. RV4

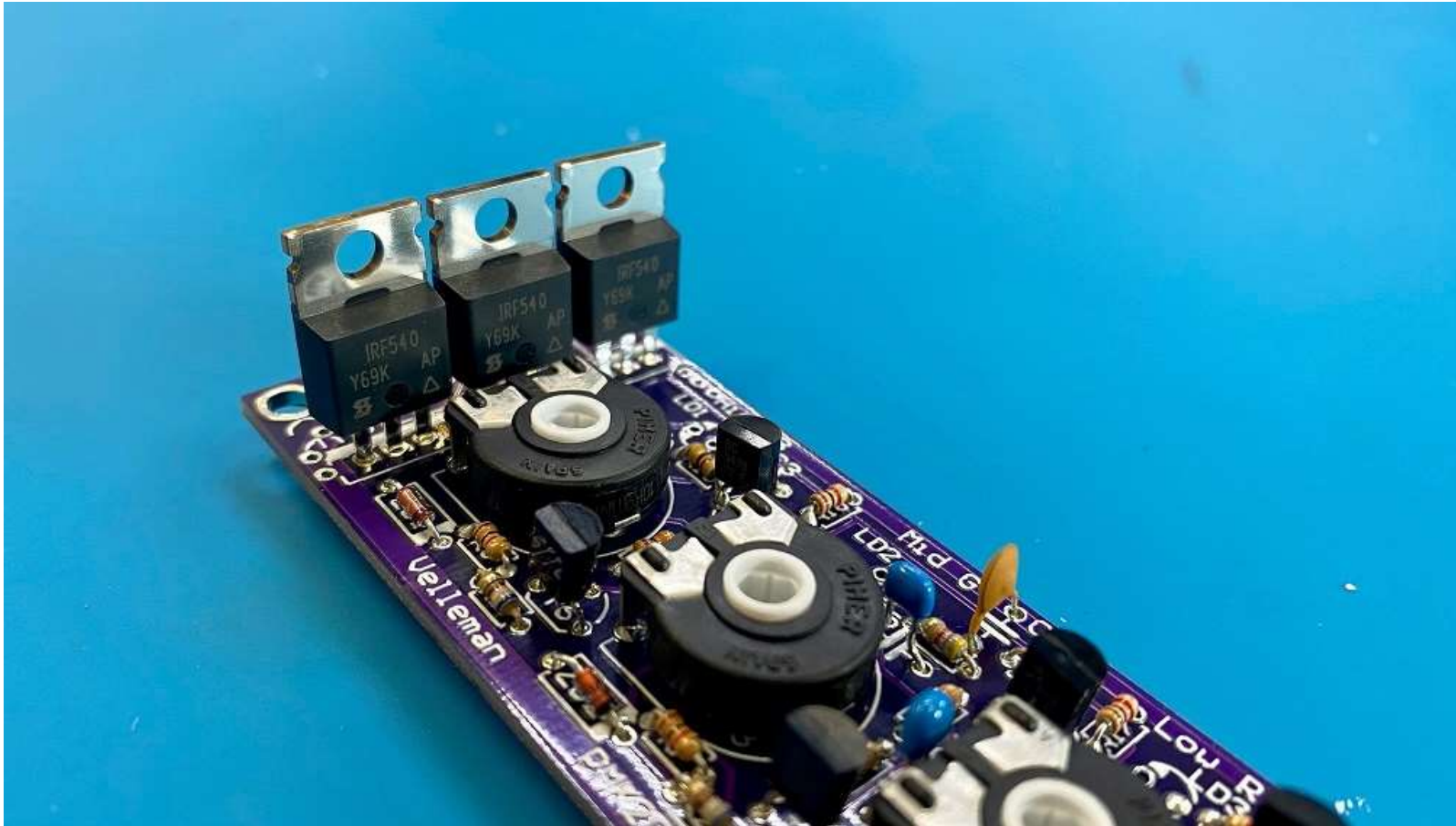


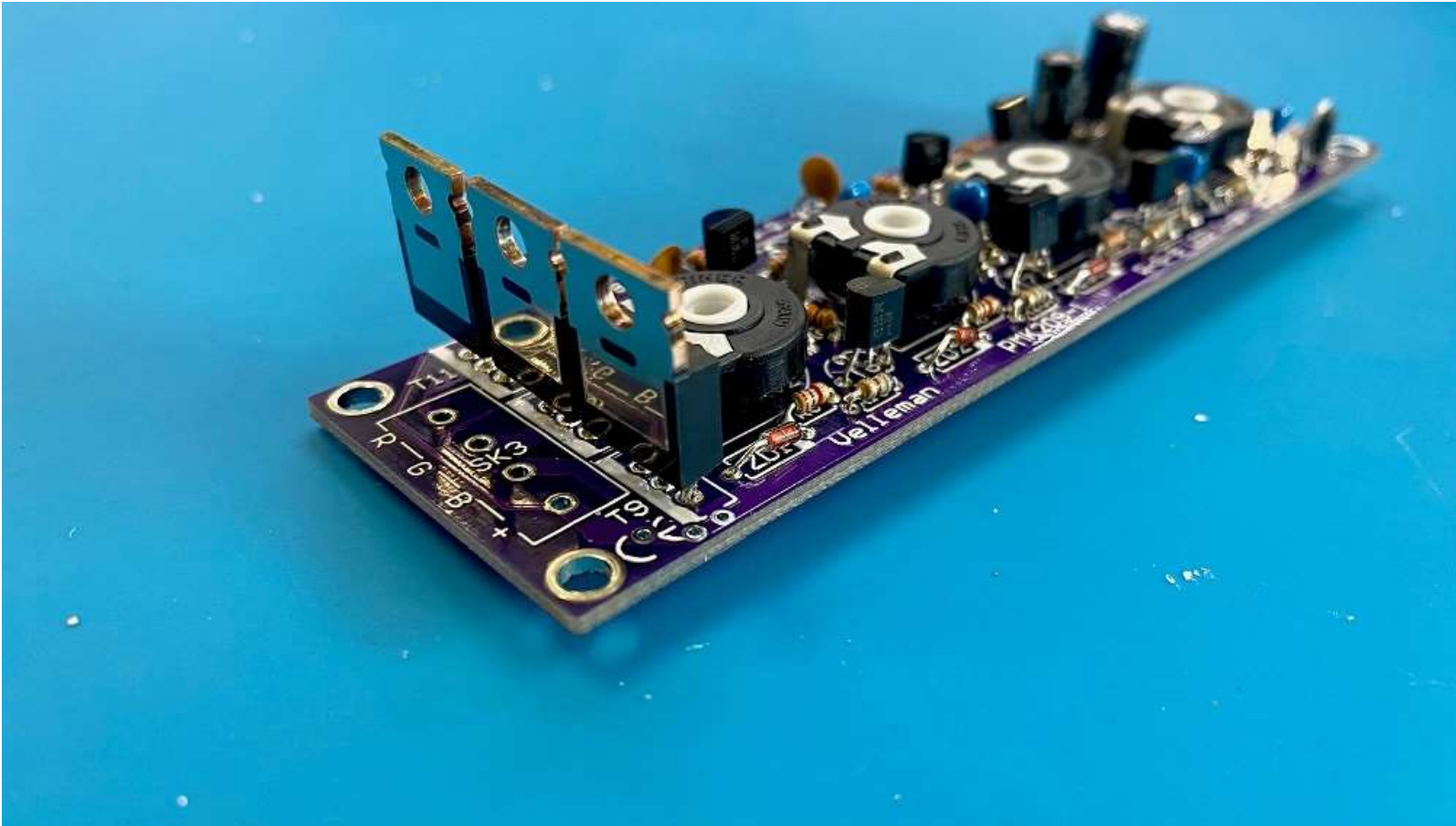


## 6. Transistors

- 5 x SI transistor NPN (BC547B): T1... T5
- 3 x SI transistor PNP (BC557B): T6, T7, T8
- 3 x Power MOSFET transistor (IRF540): T9, T10, T11 - **mind the position of the metal part! Place it so the metal part is facing the connectors in SK3!**

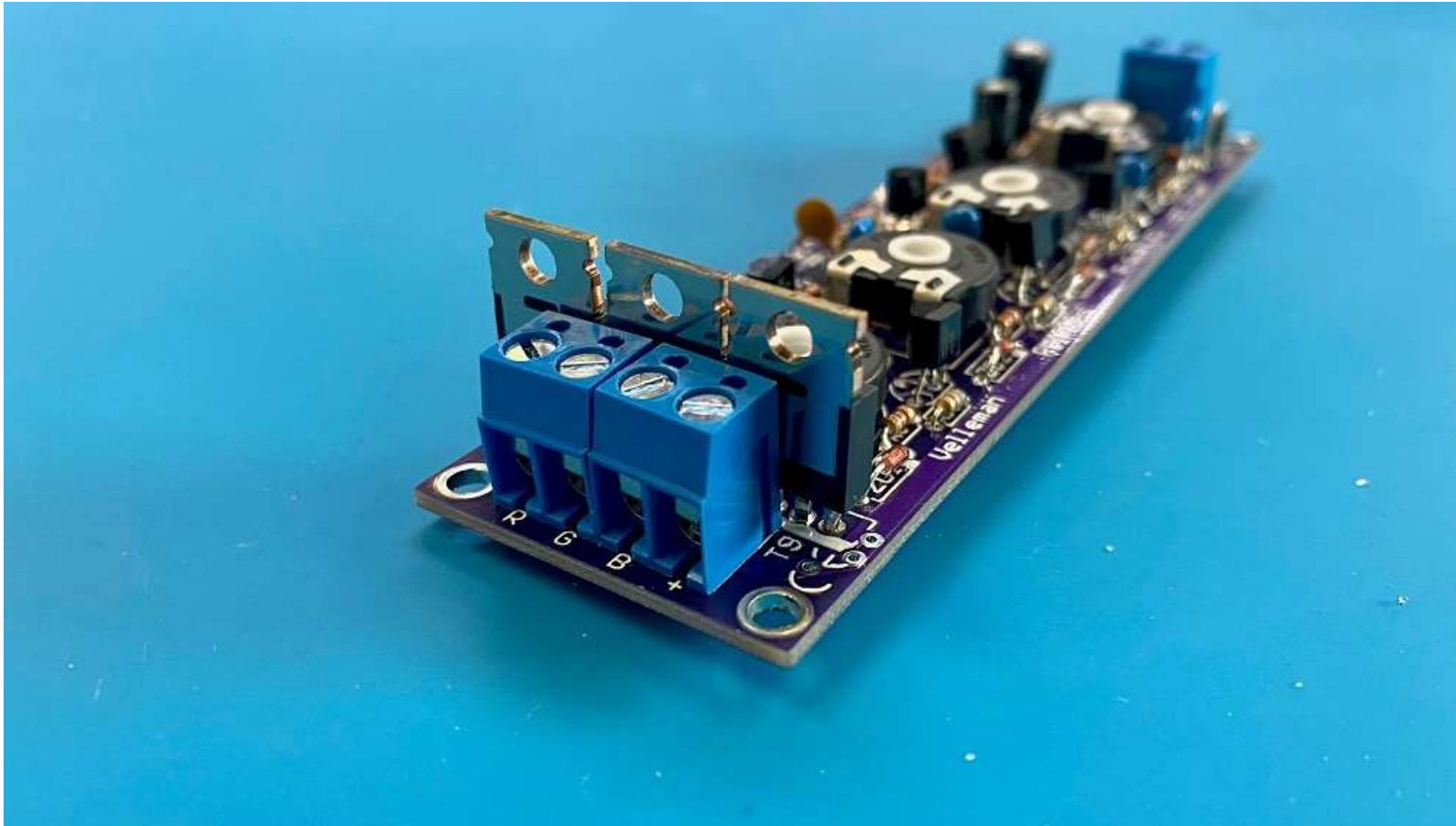




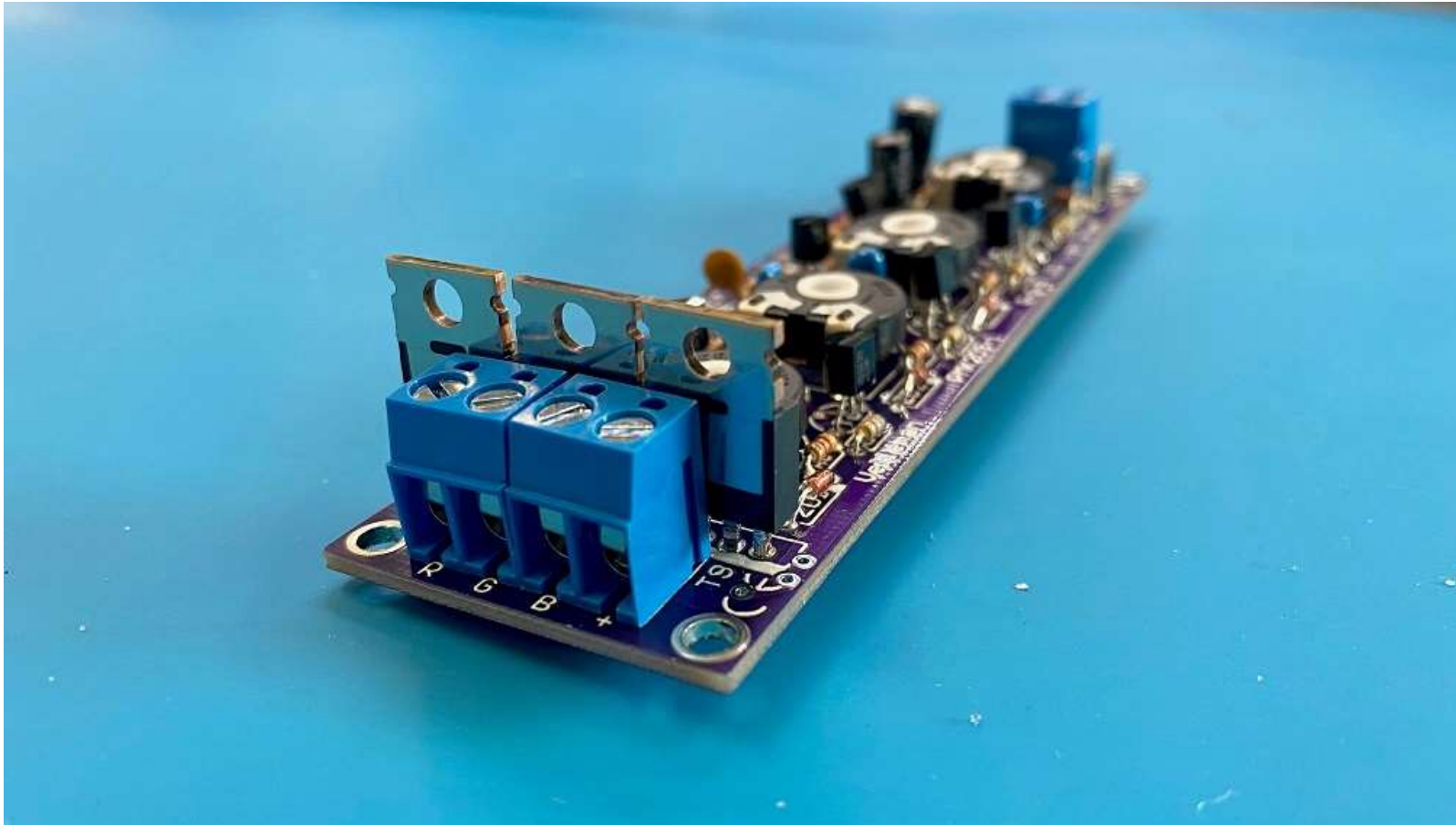


## 7. Connectors

- 3 x Screw connector prints, blue: SK1, SK3 (mount two connectors in SK3, slide them together)







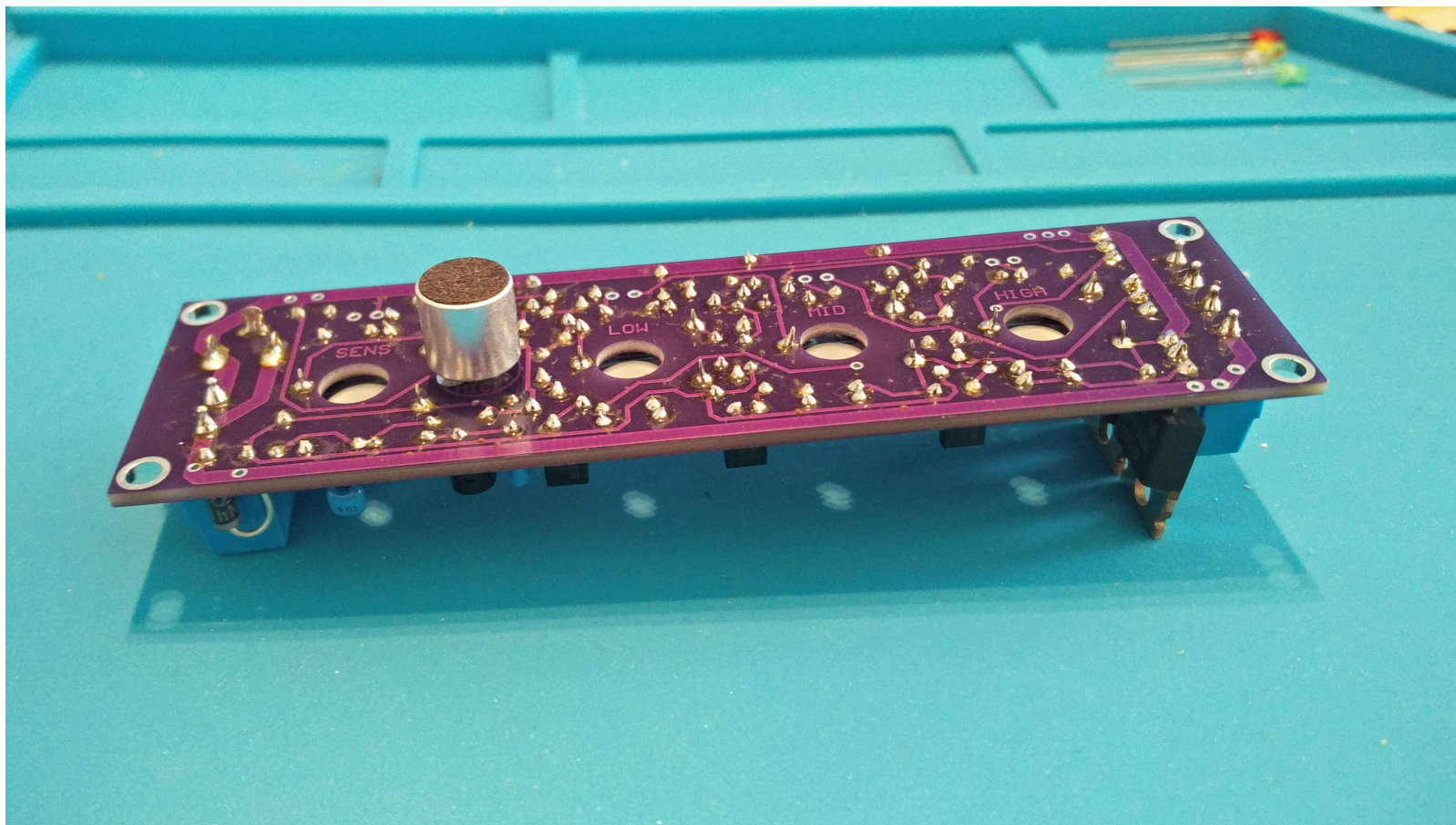
## 8. DC socket

- 1 x DC socket: SK2



## 9. Microphone

- 1 x Electret microcel 10mm diameter: MIC1 - **mount this component on solder side of PCB!**



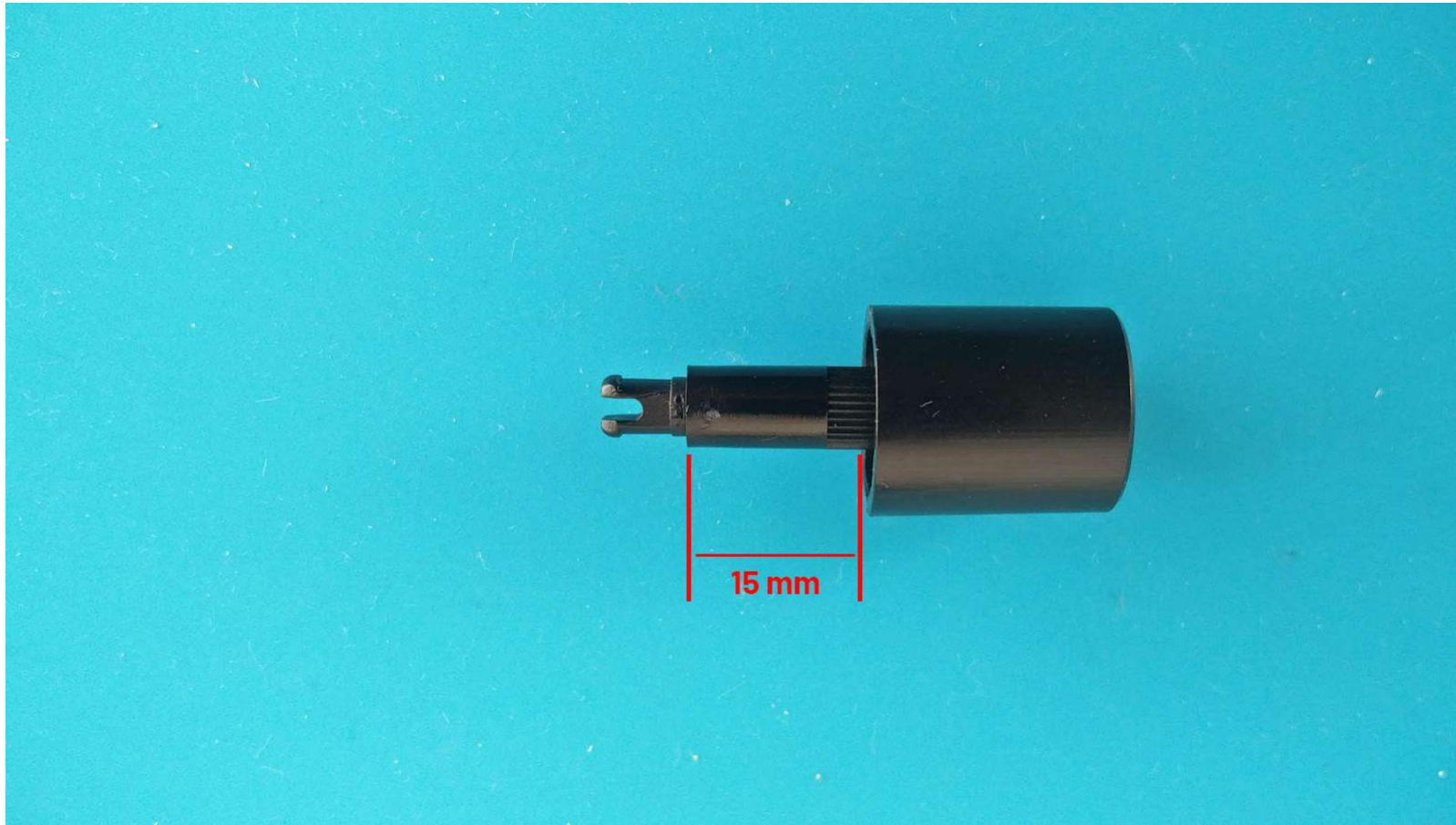
## 10. Knobs

- Hold the spindle with a plier, then slide over the knob but make sure that the white dot is in line with the plier (as shown in the picture)! Apply some pressure because it can be hard. Tip: enlarge the opening in the knob by using a 5.5 mm drill.

Again, mind the position of the dot and do not push the knob all the way down! Check the distance in the picture below! You **only want the knob to be on the top of the spindle** so it will stick out enough of the top plate.

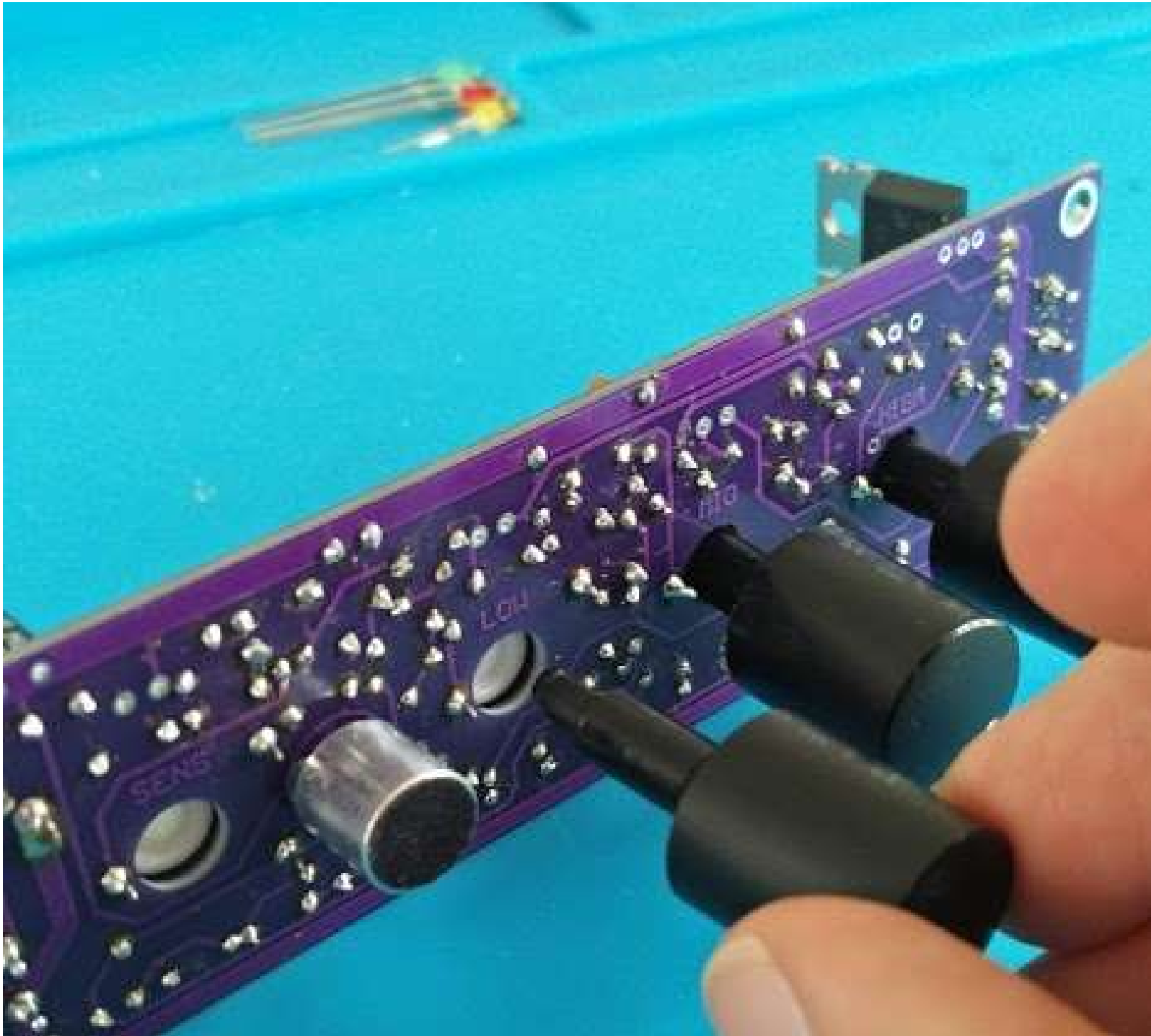




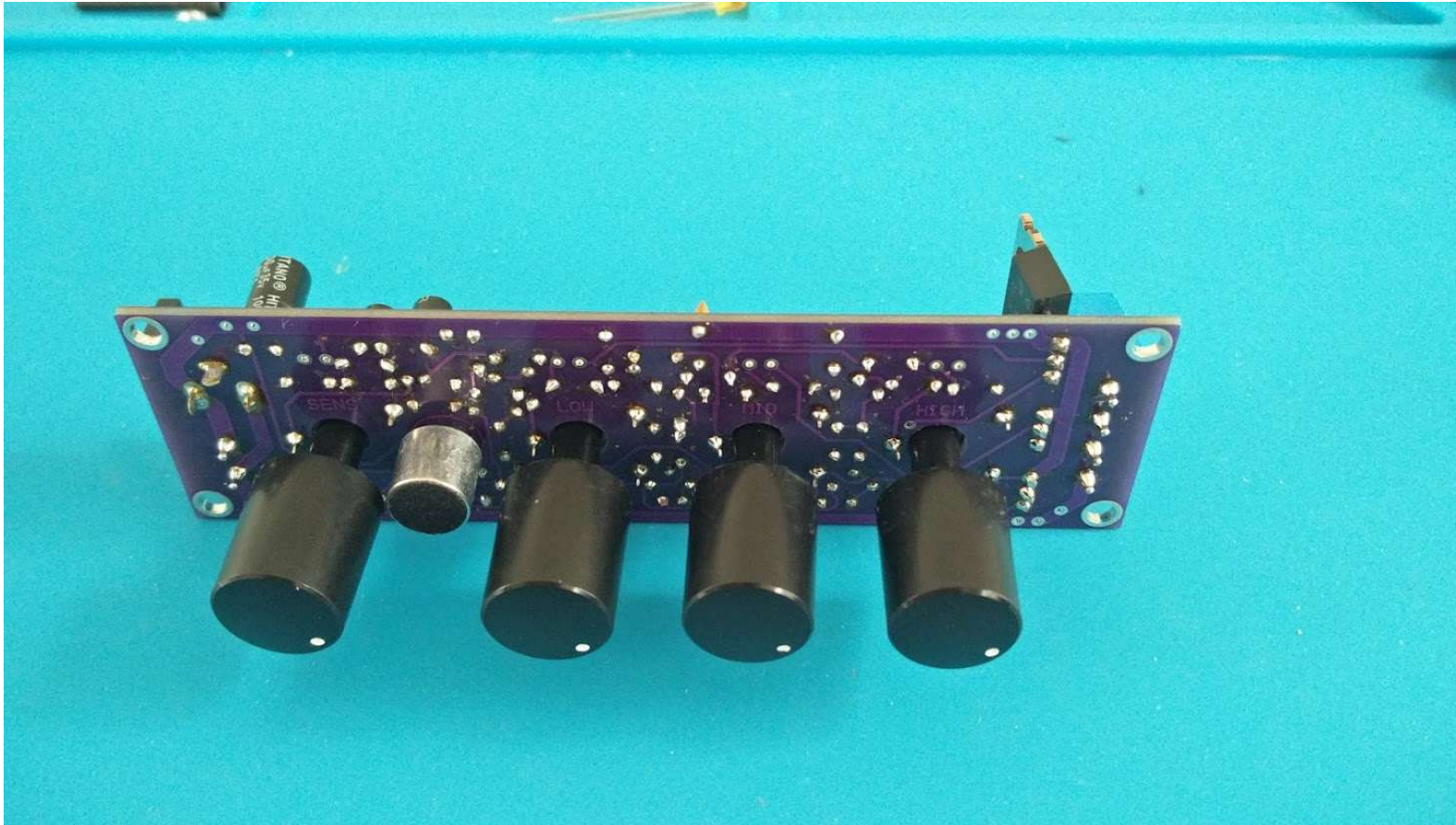


b. Then insert the knob assembly onto the potentiometers. Again, mind the position of the white dot.



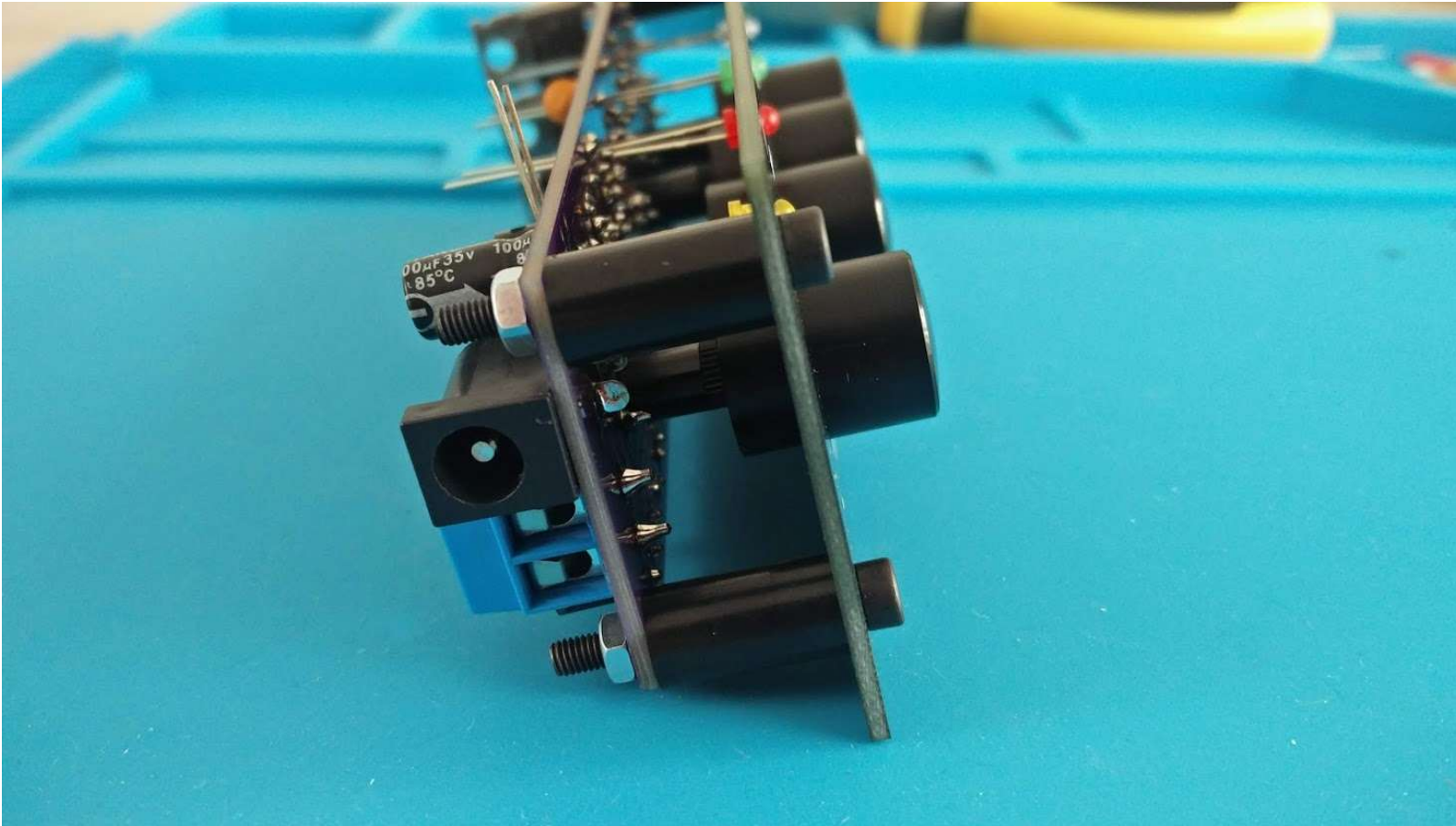




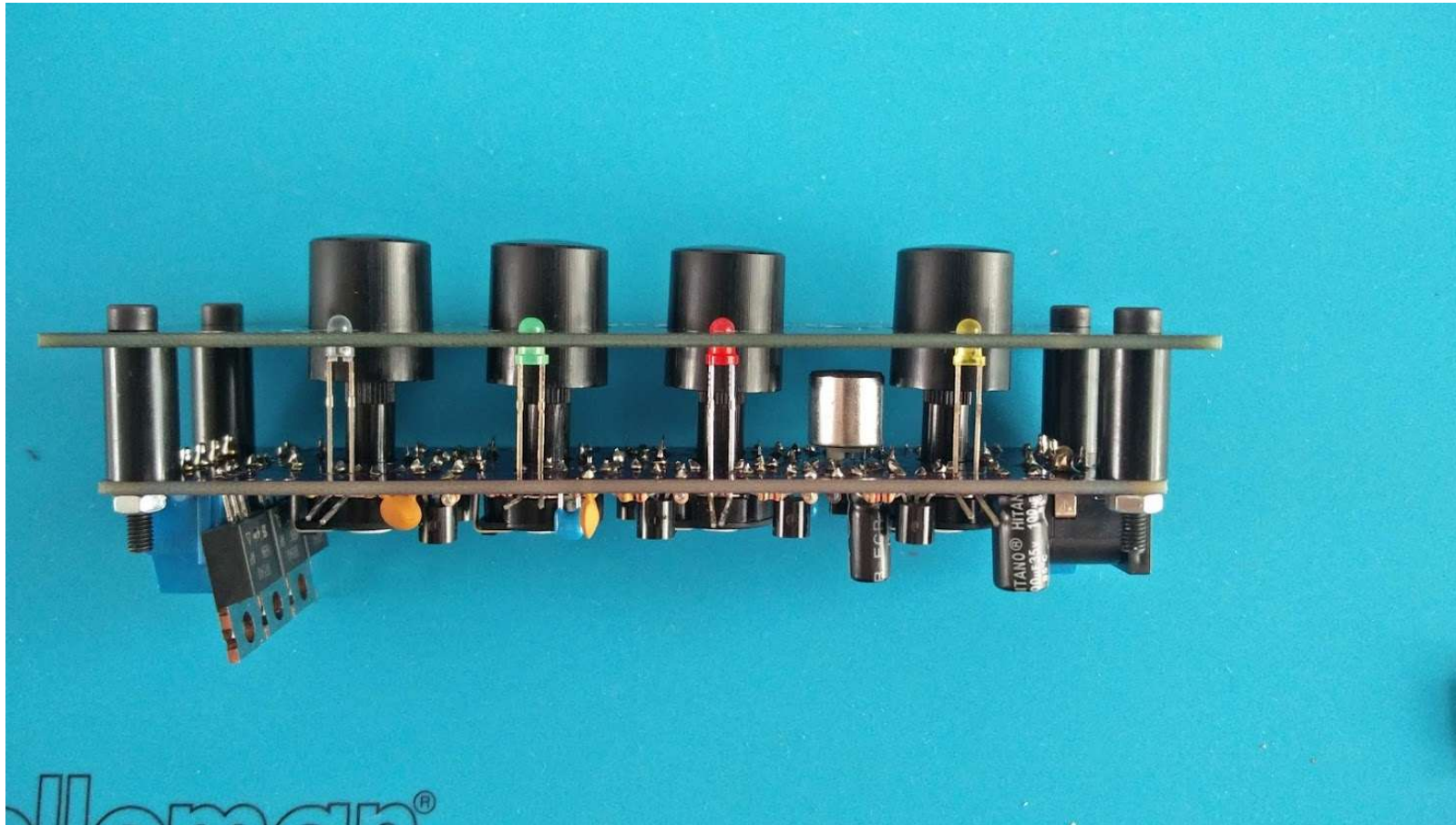


## 11. LEDs

- a. Insert the LEDs on the solder side of the PCB in the correct designator, and mind the polarity (short lead = negative or Cathode)! **Do not solder the LEDs yet!**
  - 1 x Yellow 3mm LED: LD1 (mount on the solder side of PCB)
  - 1 x Red 3mm LED: LD2 (mount on the solder side of PCB)
  - 1 x Green 3mm LED: LD3 (mount on the solder side of PCB)
  - 1 x Blue 3mm LED: LD4 (mount on the solder side of PCB)
- b. Before soldering, first, add the front panel to the board by using the supplied spacers and screws.



a. Now align the LEDs into the front panel, then solder the LEDs into position.



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