

ArduiTouch ESP

Rev C

construction manual for pcb Version 01-02

Rev.	Date	Description
A	2018-10-25	First Release
B	2019-03-09	Different changings for pcb version 01-02-00
C	2019-04-02	Patch for ESP8266 based modules (step 15)

Tools:

*agregulated soldering iron
(25..40W) with small tip*



*a wet sponge to clean the
tip*



thin solder wire



Side cutting pliers




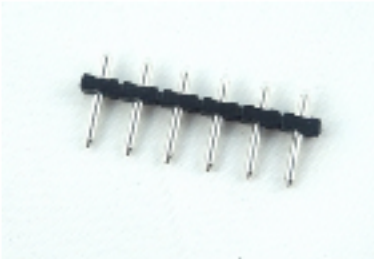



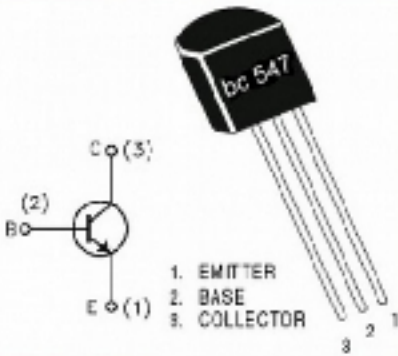
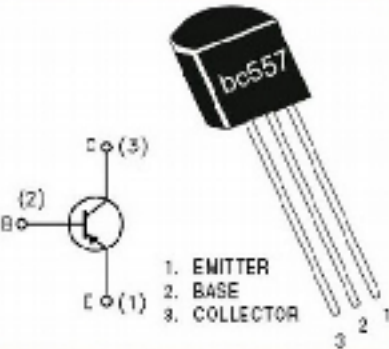
Needle nose pliers



Medium cross slot screwdriver



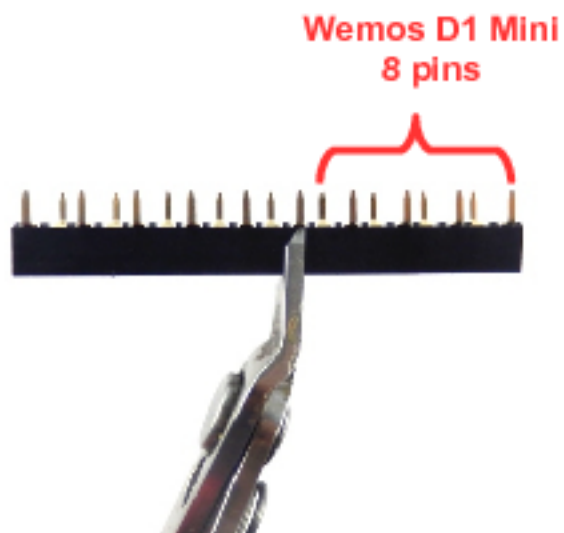
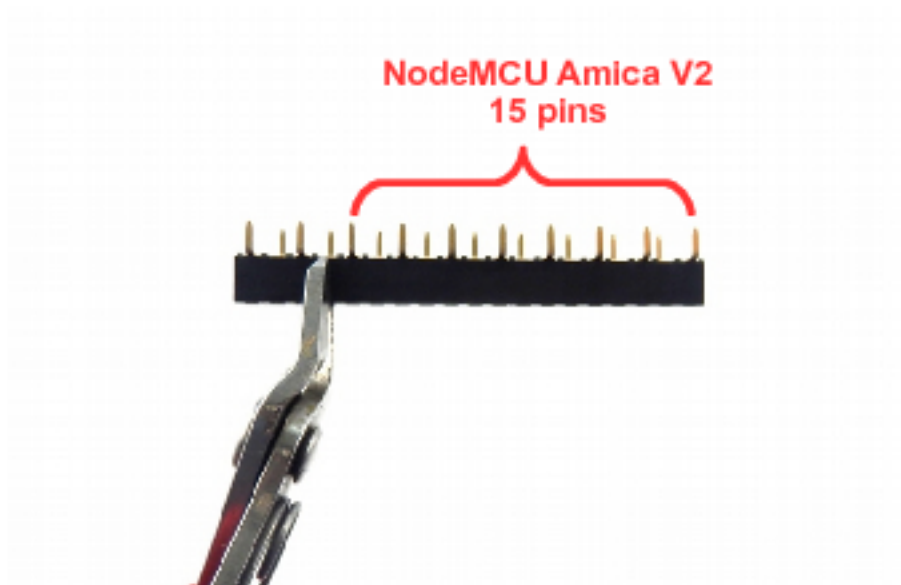
Part list:

 <p>1x 6pole terminal block (K4)</p>	 <p>1x 6pole terminal header (K4)</p>	 <p>1x 14pole female header (K3)</p>
 <p>2x 19pole centipede female header</p>	 <p>(brown, black, red)</p> <p>2x Resistor 1k (R1, R2)</p>	 <p>(brown, black, orange)</p> <p>1x Resistor 10k (R14)</p>
 <p>1x NPN Transistor BC547B (T2)</p>	 <p>1x PNP Transistor BC557B (T1)</p>	 <p>1x voltage regulator TL2576-5 (IC4)</p>

 <p>1x inductor 100uH/1.2A (L1)</p>	 <p>cathode</p> <p>2x Schottky diode SB260 (D10, D12)</p>	 <p>1x overvoltage limiting diode P6KE36CA (D11)</p>
 <p>1x electrolytic capacitor 1000uF/16V (C2)</p>	 <p>1x electrolytic capacitor 100uF/63V (C1)</p>	 <p>1x Piezo Beeper (LS1)</p>
 <p>1x 3pole male header (JP1)</p>	 <p>8x Screw M3 6mm</p>	 <p>4x Spacer M3 11mm</p>

1.) *Preparation of the female centipede headers*

Depending from the ESP module of your choice you have to cut the both female centipede headers to the right length:

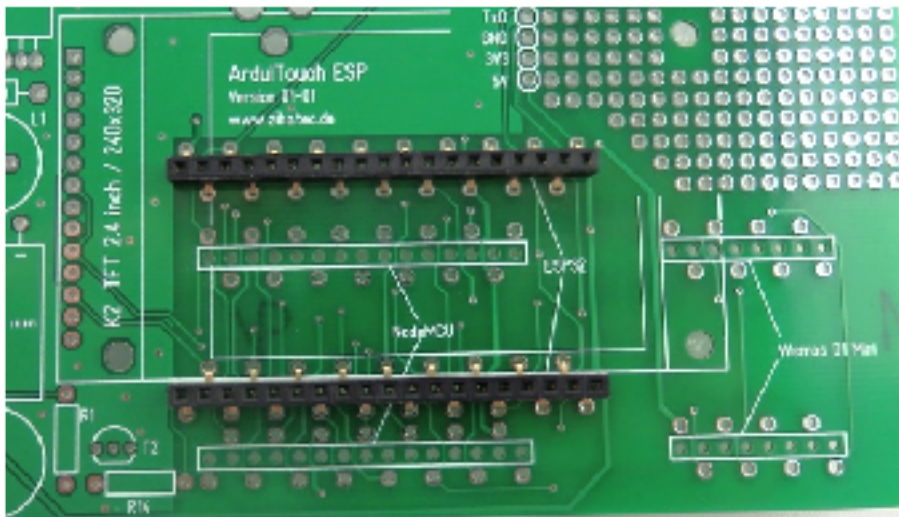


For the NodeMCU ESP32 module no cutting is needed.

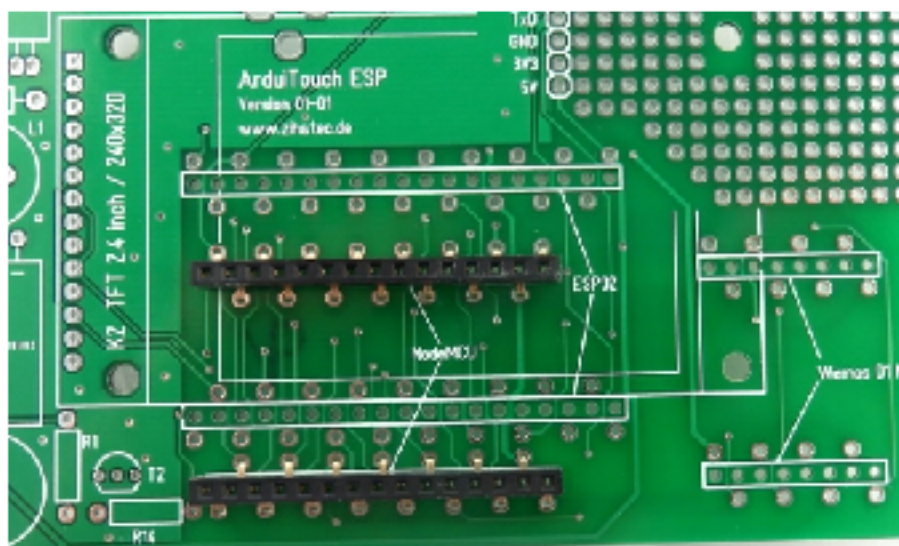
2.) Place and solder the centipede headers

Depending from the ESP module of your choice you have to place the prepared female centipede headers to the right position on the pcb:

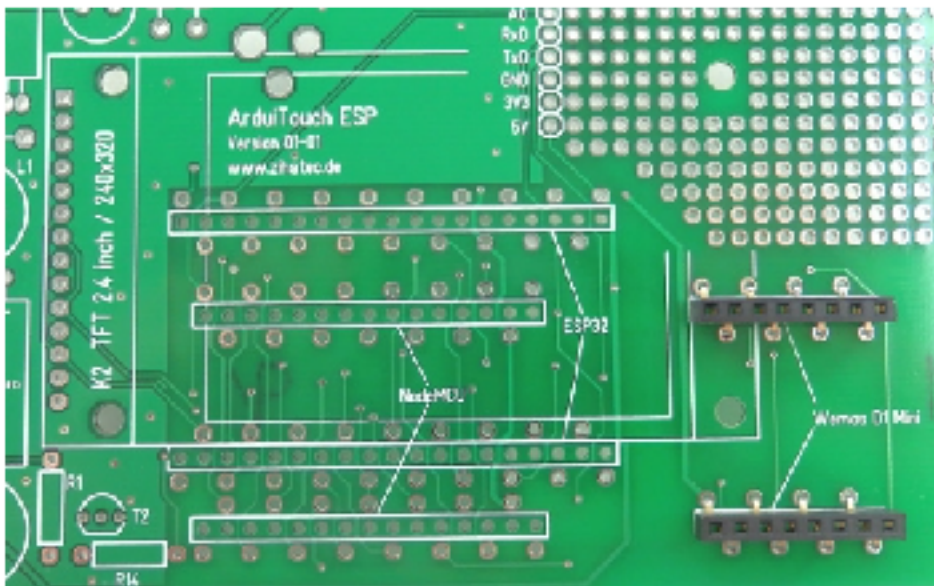
NodeMCU ESP32:



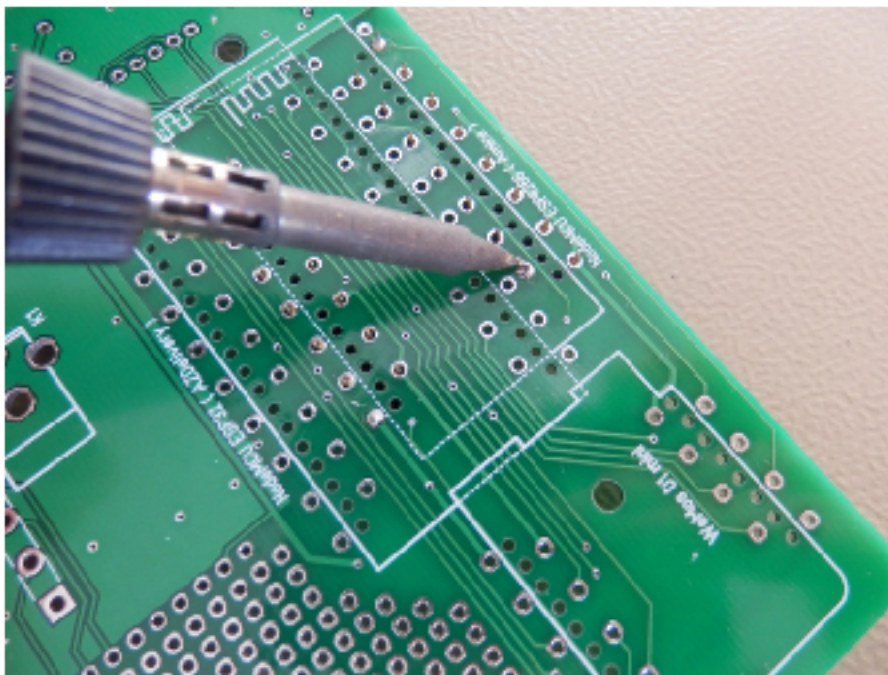
NodeMCU Amica V2:



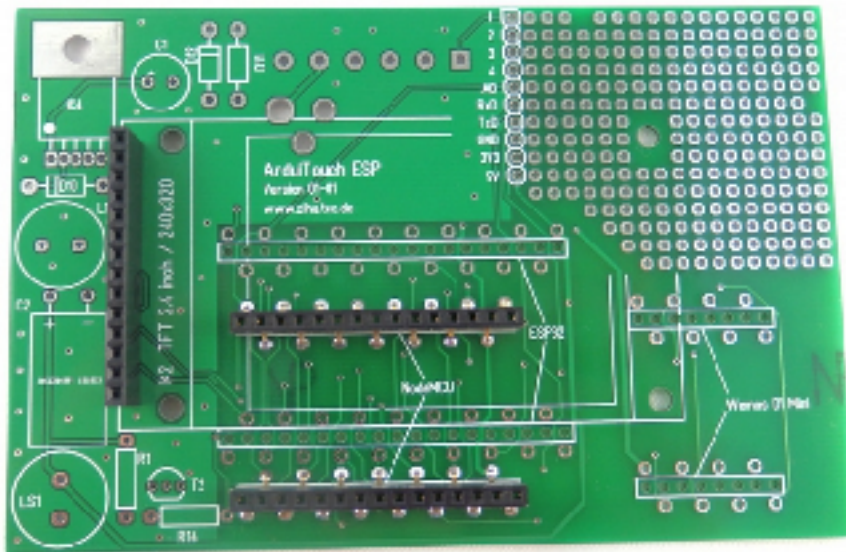
Wemos D1 Mini:



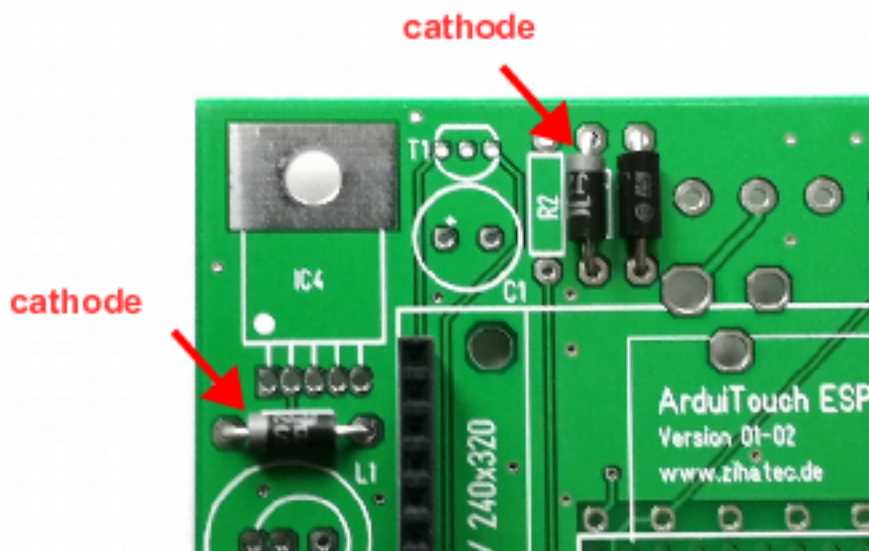
Now you can solder the centipede headers from the opposite side. Please take care that the headers placed tight as possible to the pcb:



3.) Place and solder the header K1

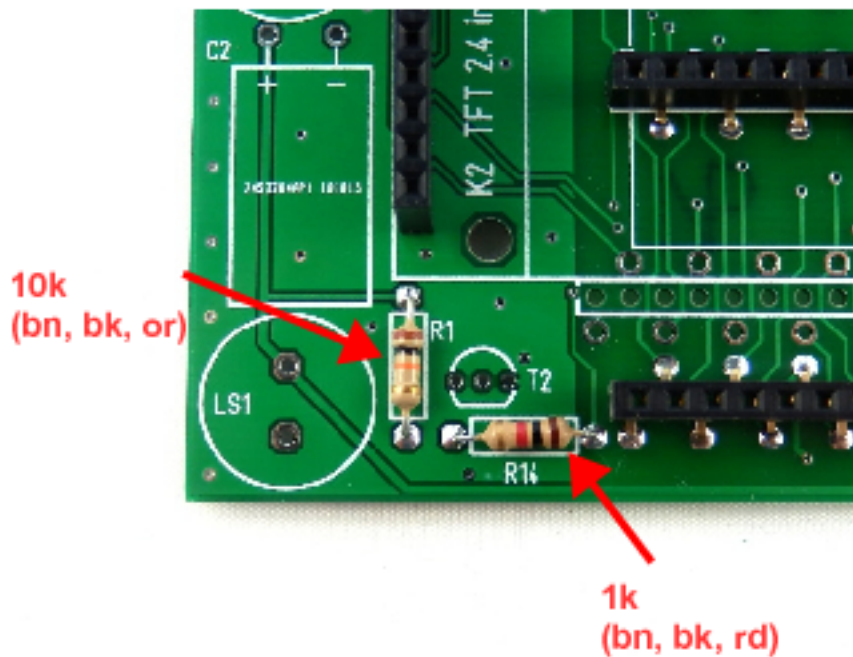


4.) Place and solder the schottky diodes D10, D11 & D12

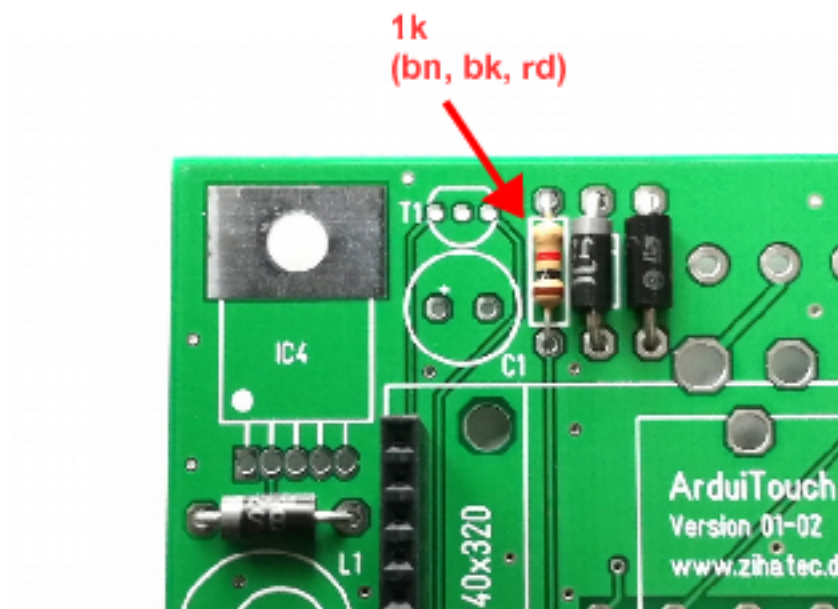


Please Note: D11 has no polarity!

5.) Place and solder the resistors R1 and R14



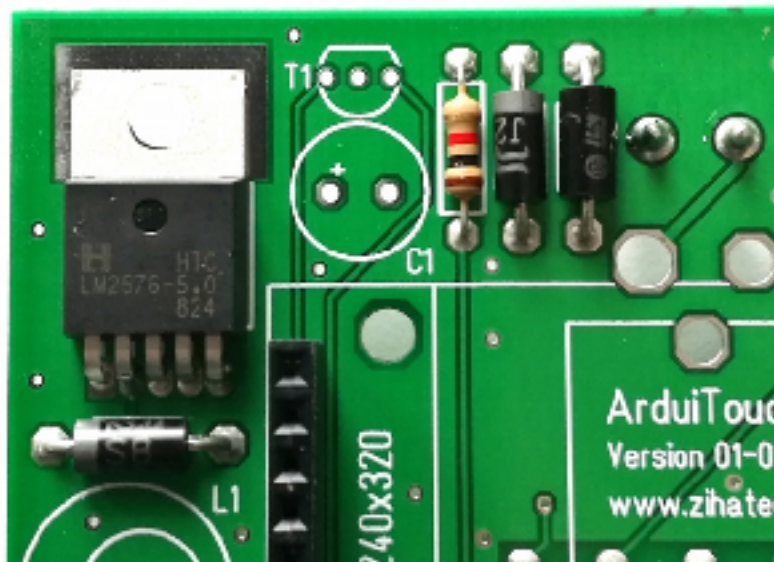
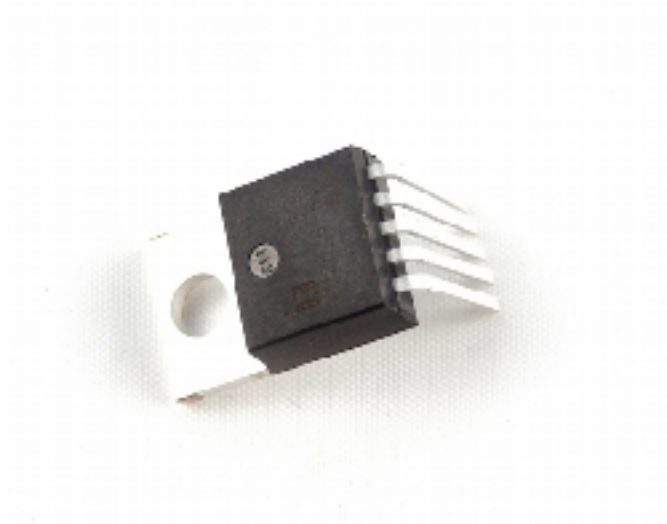
6.) Place and solder the resistor R2 (ESP32 only)



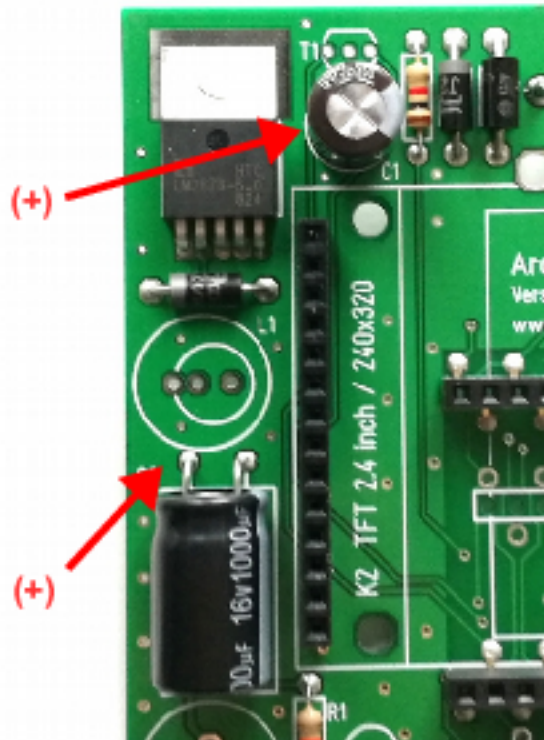
Don't assemble this resistor for Wemos D1 Mini or NodeMCU V2

7.) Preparation and Assembly of IC4

Bend the straight pins of the voltage regulator IC4 2mm beside the regulator in a 90 degree angle first:



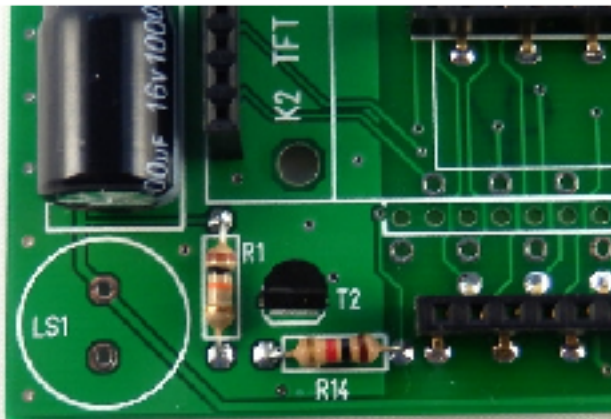
8.) Place and solder the capacitors C1 and C2



9.) Place and solder the inductor L1

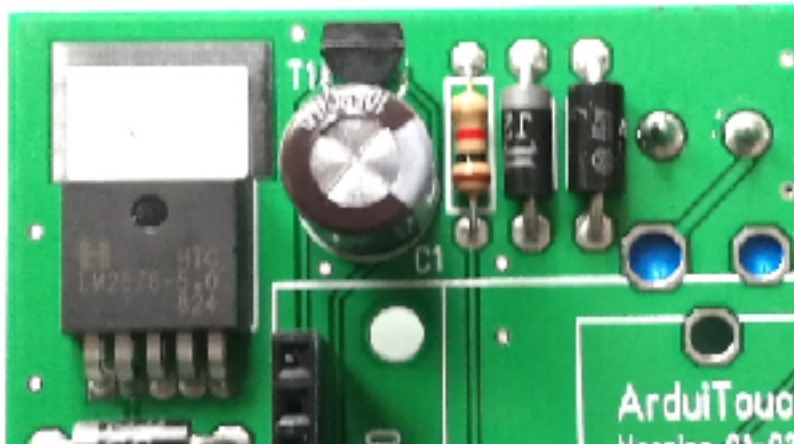


10.) Place and solder the transistor T2 (BC547)



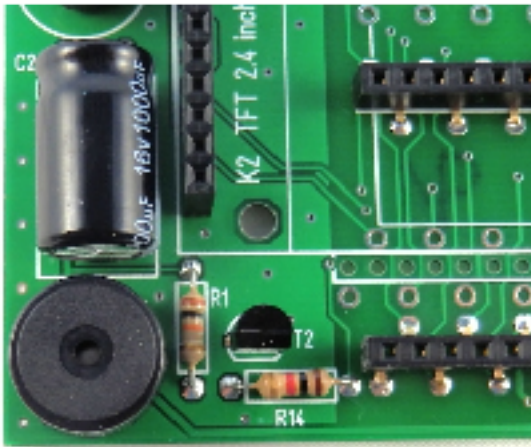
NPN Transistor BC547!!!

11.) Place and solder the transistor T1 (BC557)

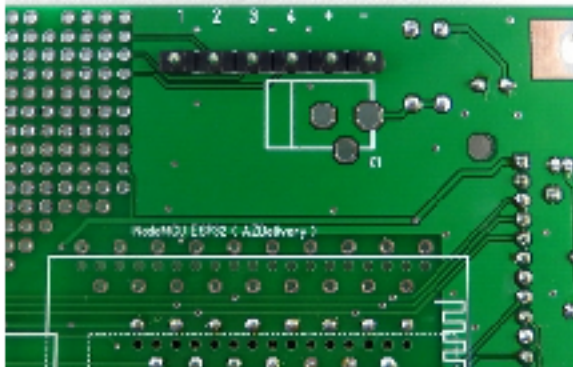


PNP Transistor BC557!!!

12.) Place and solder the piezo loudspeaker LS1

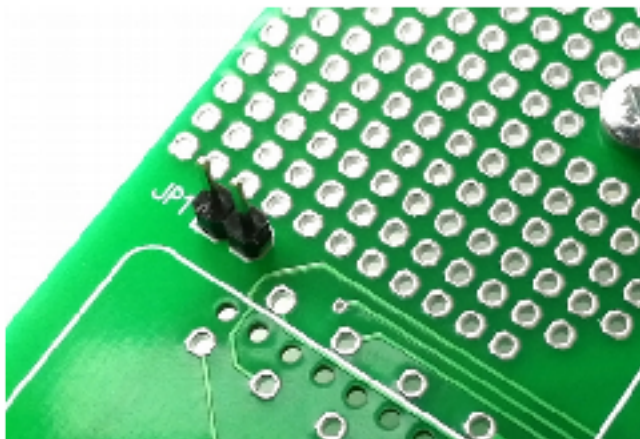


13.) Place and solder the header K4



Attention!
K14 is placed on
the pcb backside

14.) Place and solder the Jumper JP1 (for ESP32 only)

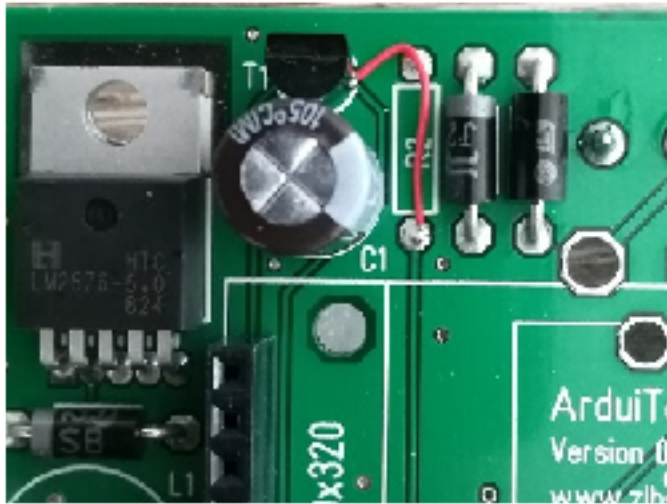


Close this Jumper
during programming of
ESP32!

Leave it open during
Run time!

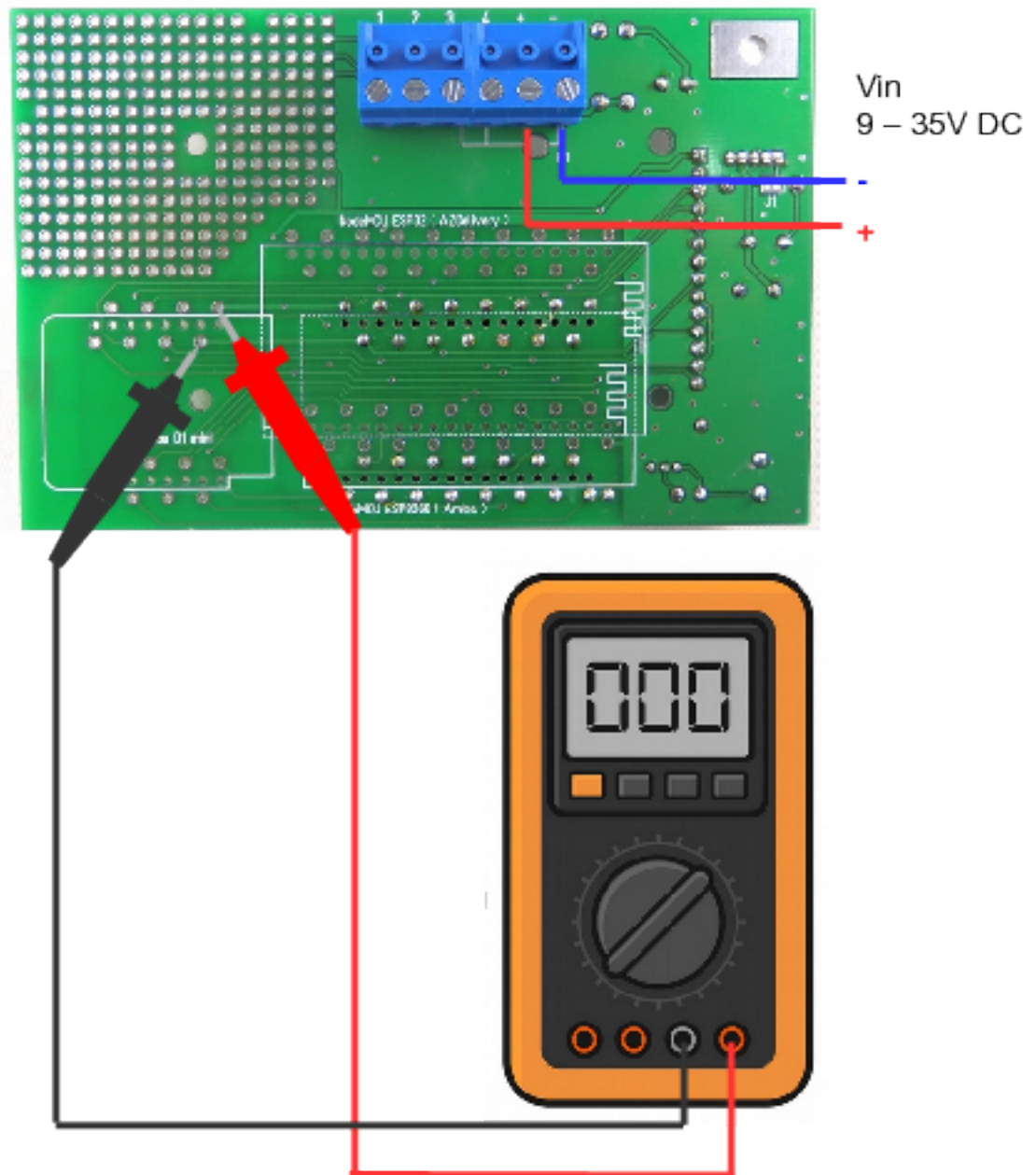
15.) Patch for ESP8266 only

Solder a wire between the collector of T1 and the pin of R2:



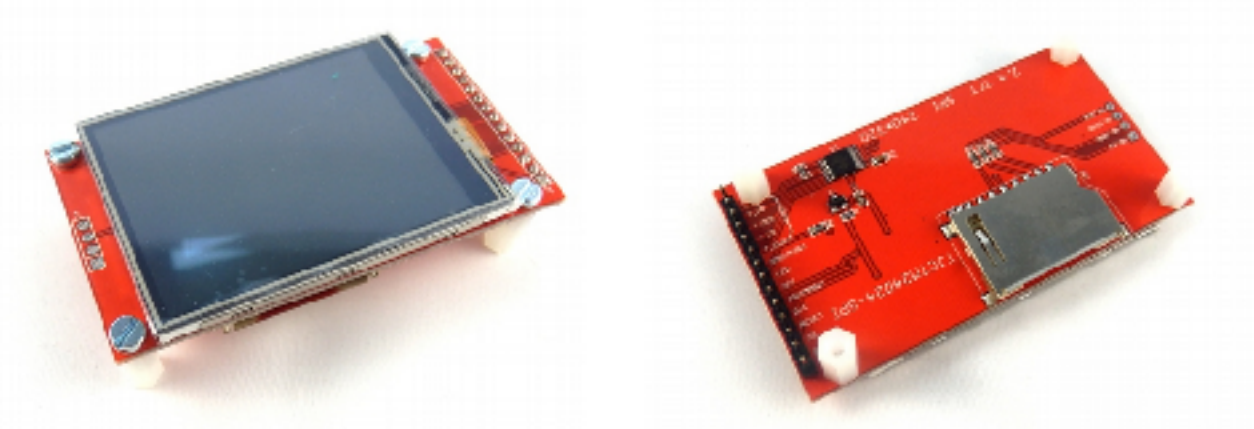
16.) Check the power supply

Its time to check the function of the power supply before the final assembly of the unit.

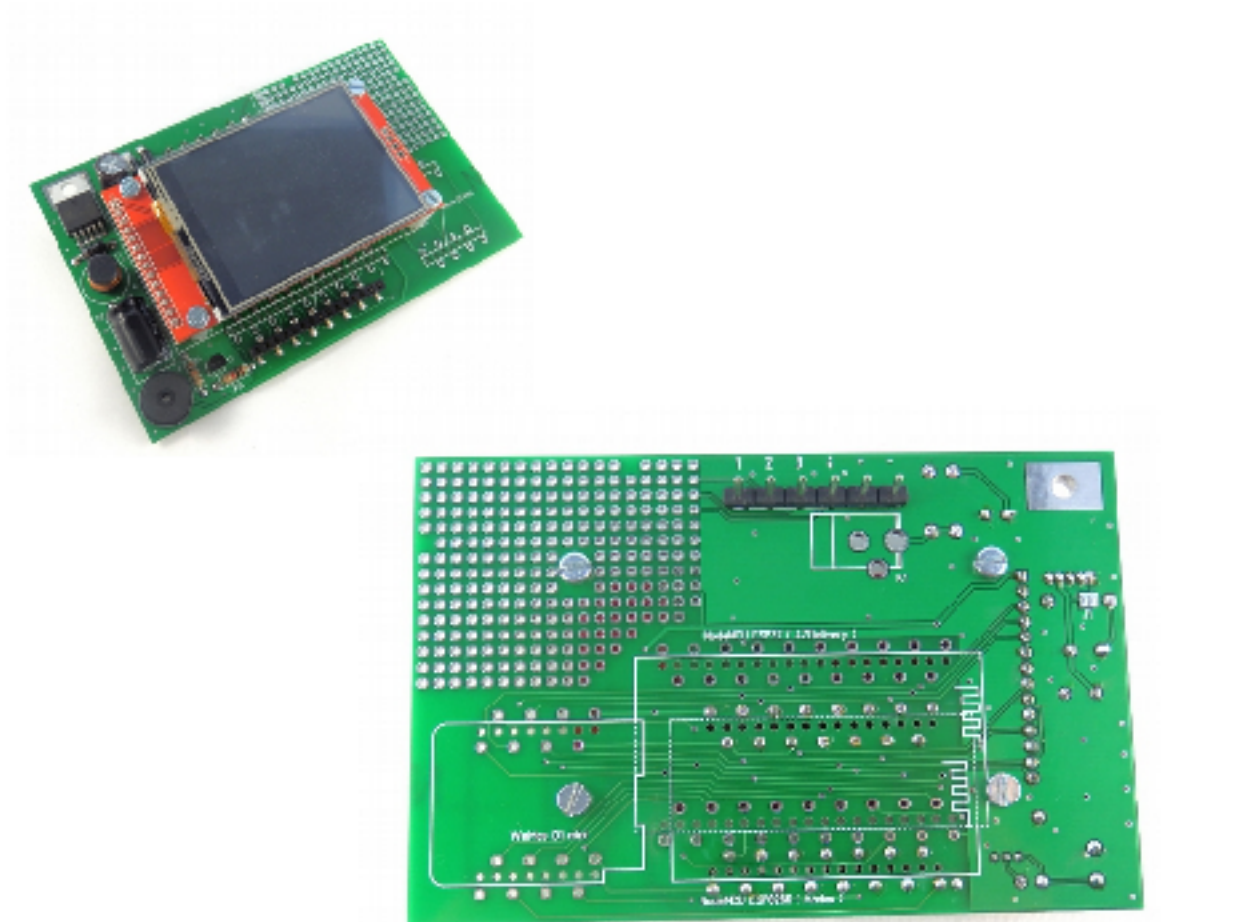


You have to measure a voltage between 4.9 – 5.1V!

17.) Mounting of Spacers

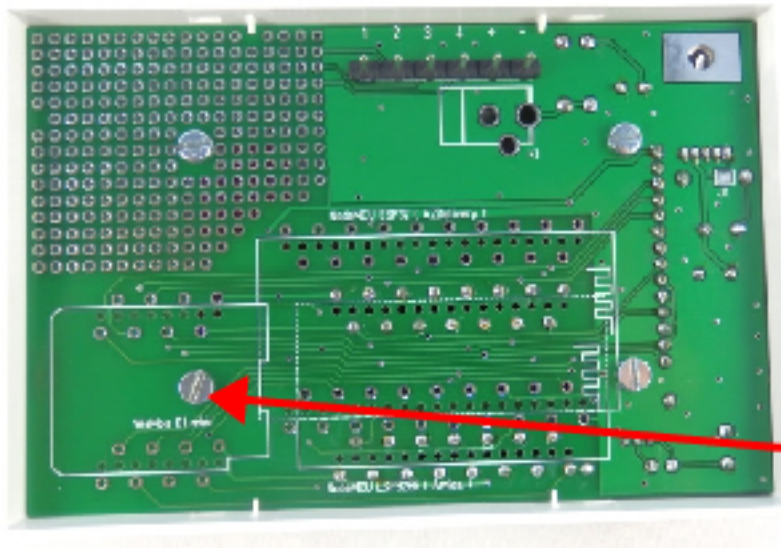


18.) Mounting of Touchscreen



Plug the touchscreen into K2 and fix it with 4 M3 screws on the pcb backside.

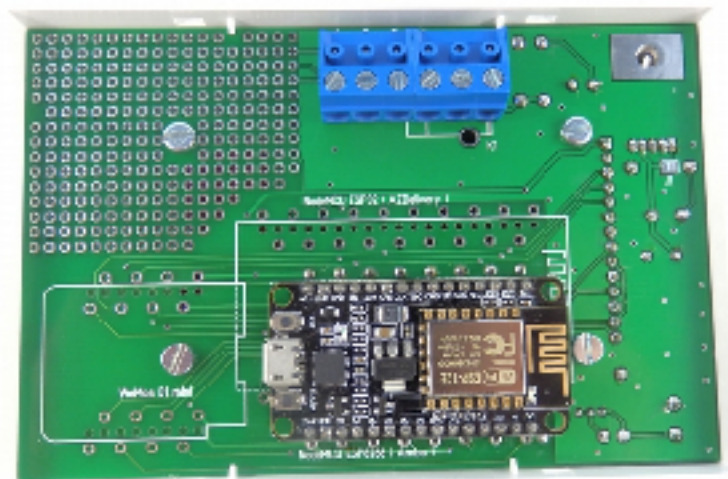
19.) Mounting of pcb in the top shell



Position of ventilation slots on this side!

Don't mount this screw if you want to use a Wemos D1 Mini!

20.) Mounting of ESP module and terminal



Finish!