AZ-Touch Feather
Rev A

construction manual for pcb Version 01-00

<table>
<thead>
<tr>
<th>Rev.</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2021-05-15</td>
<td>First Release</td>
</tr>
</tbody>
</table>
Tools:

a regulated 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:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6pole terminal block (K4)</td>
<td>1x</td>
<td></td>
</tr>
<tr>
<td>6pole terminal header (K4)</td>
<td>1x</td>
<td></td>
</tr>
<tr>
<td>14pole female header (K2)</td>
<td>1x</td>
<td></td>
</tr>
<tr>
<td>Piezo Beeper (LS1)</td>
<td>1x</td>
<td></td>
</tr>
<tr>
<td>Resistor 1k (R2, R3)</td>
<td>2x</td>
<td></td>
</tr>
<tr>
<td>Resistor 10k (R1)</td>
<td>1x</td>
<td></td>
</tr>
<tr>
<td>NPN Transistor BC547B (T2)</td>
<td>1x</td>
<td></td>
</tr>
<tr>
<td>PNP Transistor BC557B (T1)</td>
<td>1x</td>
<td></td>
</tr>
<tr>
<td>voltage regulator TL2576-5 (IC1)</td>
<td>1x</td>
<td></td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inductor 100uH/1.7A (L1)</td>
<td>1x</td>
<td>Electrolytic capacitor</td>
</tr>
<tr>
<td>Schottky diode SB260 (D2, D3)</td>
<td>2x</td>
<td>Electrolytic capacitor</td>
</tr>
<tr>
<td>Overvoltage limiting diode P6KE36CA (D1)</td>
<td>1x</td>
<td>12pole centipede header</td>
</tr>
<tr>
<td>Electrolytic capacitor 1000uF/16V (C2)</td>
<td>1x</td>
<td>16pole centipede header</td>
</tr>
<tr>
<td>Electrolytic capacitor 100uF/63V (C1)</td>
<td>1x</td>
<td>Screw M3 6mm</td>
</tr>
<tr>
<td>12pole centipede header</td>
<td>1x</td>
<td>Spacer M3 11mm</td>
</tr>
<tr>
<td>16pole centipede header</td>
<td>1x</td>
<td></td>
</tr>
</tbody>
</table>

- **Cathode**
1.) **Place and solder diodes D1, D2 and D3**

*Please Note: D1 has no polarity!*

2.) **Place and solder the resistors R1, R2 and R3**
3.) Preparation and assembly of the voltage regulator IC1

Bend the straight pins of the voltage regulator IC1 2mm beside the regulator in a 90 degree angle first:
4.) Place and solder the capacitors C1 and C2

5.) Place and solder the inductor L1
6.) Place and solder the transistors T1 and T2

7.) Place and solder the piezo beeper LS1
8.) Place and solder the female header K2

9.) Place and solder the dual entry headers for IC2

Attention – place these parts on the top side of pcb!

Don’t solder the headers - see next step first!
10.) Cut the inner pins of both connectors plain as possible

11.) Solder the pins
12.) Place and solder the terminal header K4

Attention – place this part on the bottom side of pcb!

13.) Assemble the terminal K4
14.) Check the power supply

It's 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!
15.) HUZZAH ESP8266 only!

The Adafruit HUZZAH ESP8266 has a very limited pin count. Some pins are doubled on both headers. It is necessary needed to set the 2 Jumpers for ESP8266 on the main board:

I2C is not available in this case. Backlight is always on!

16.) Sparkfun Thing Plus RP2040 only!

Cover these 3 connections with electrical tape to avoid short circuits
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!

20.) Mounting of Feather Board

Finish!