

RasPiBox Zero Lite

Version 2.1

construction manual

Rev.	Date	Description
A	02.09.16	First release

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

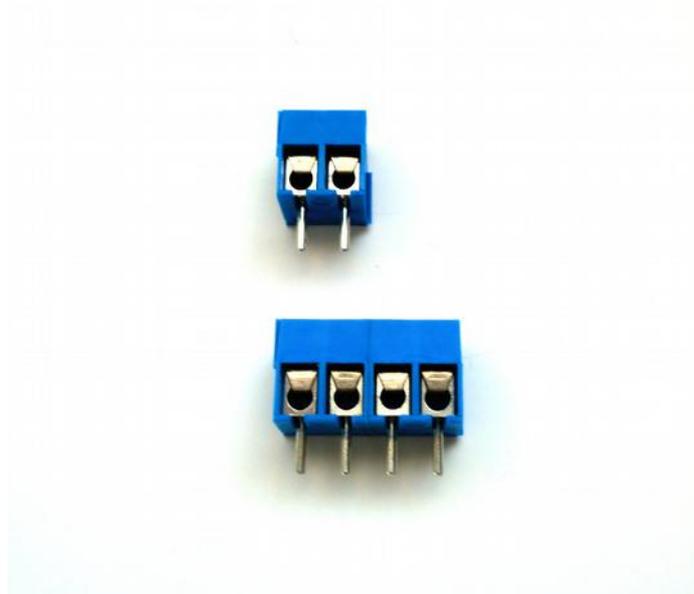


Parts Basic Version:

 <p>3x 2pole terminal block (K2, K6, K8)</p>	 <p>1x 2x20pole female header (K1)</p>	 <p>2x din rail holders</p>
 <p>2x self-tapping screws</p>	 <p>1x Schottky diode MBRS140</p>	

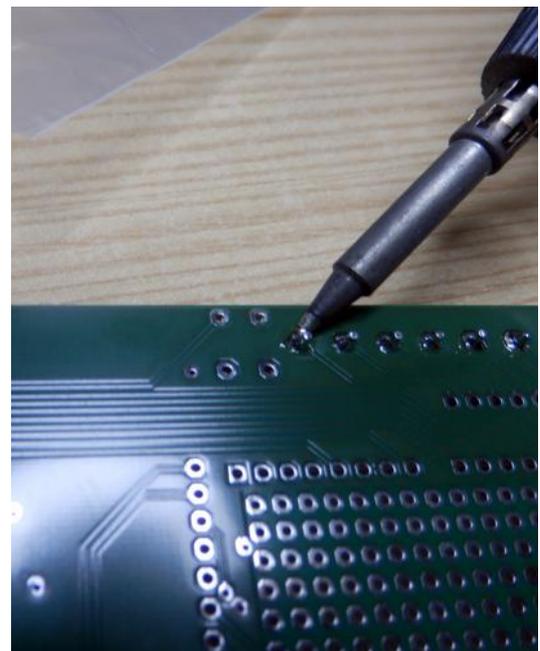
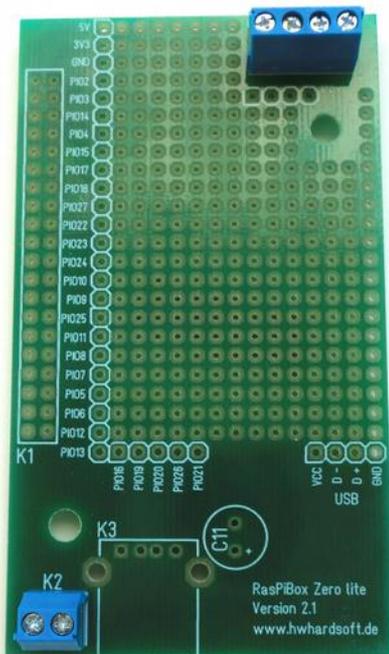
1.) Prepare the terminal blocks

Find the terminal blocks, they're grey or blue and come in 2-pin shapes. We'll need to slide two 2-pin blocks together:



2.) Place and solder terminal blocks

We've to put the blocks into the proto plate. Make sure you place them so that the open ends are facing out as shown:

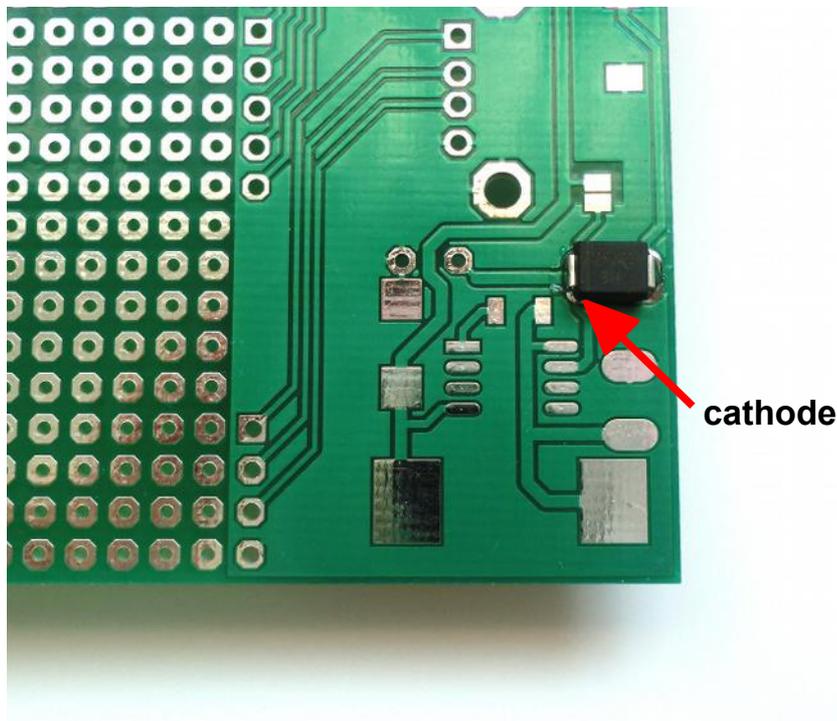


3.) Assemble and solder the 40 pole socket

We've to place and solder the 2x20 pin socket for the Raspberry Pi :

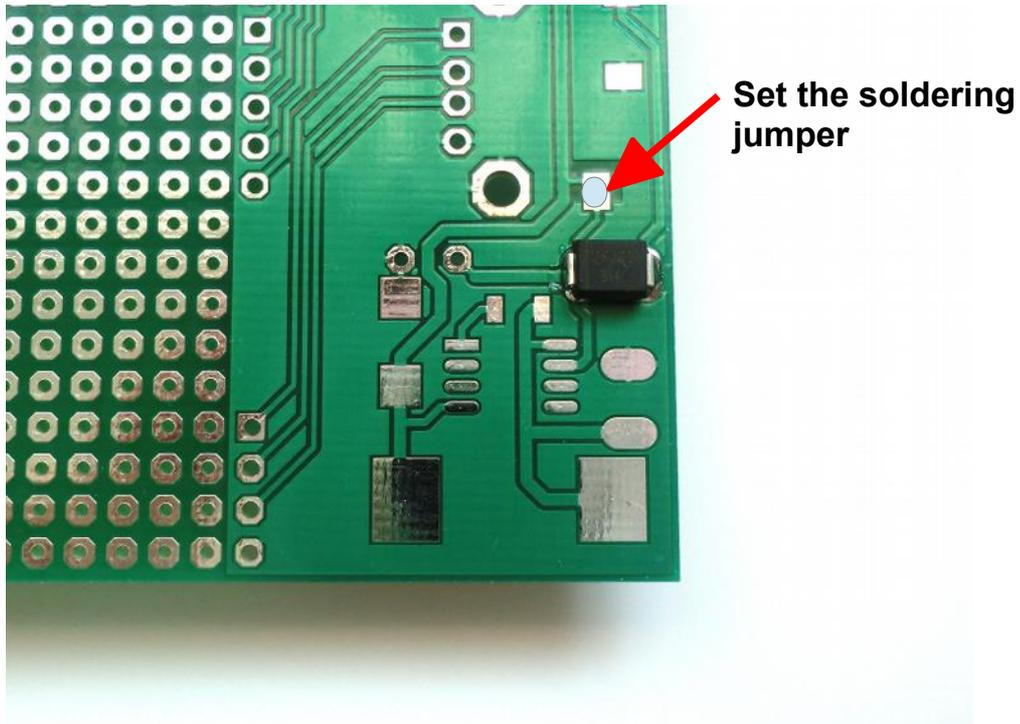


4.) Place and solder the schottky diode



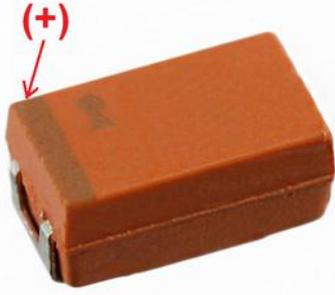
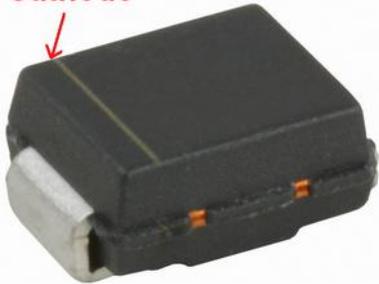
5.) *Set the solder jumper (basic kit only)*

Attention: Please set this jumper in the basic version only! You can supply the PiZero with 5V DC directly from the terminal K2 now.

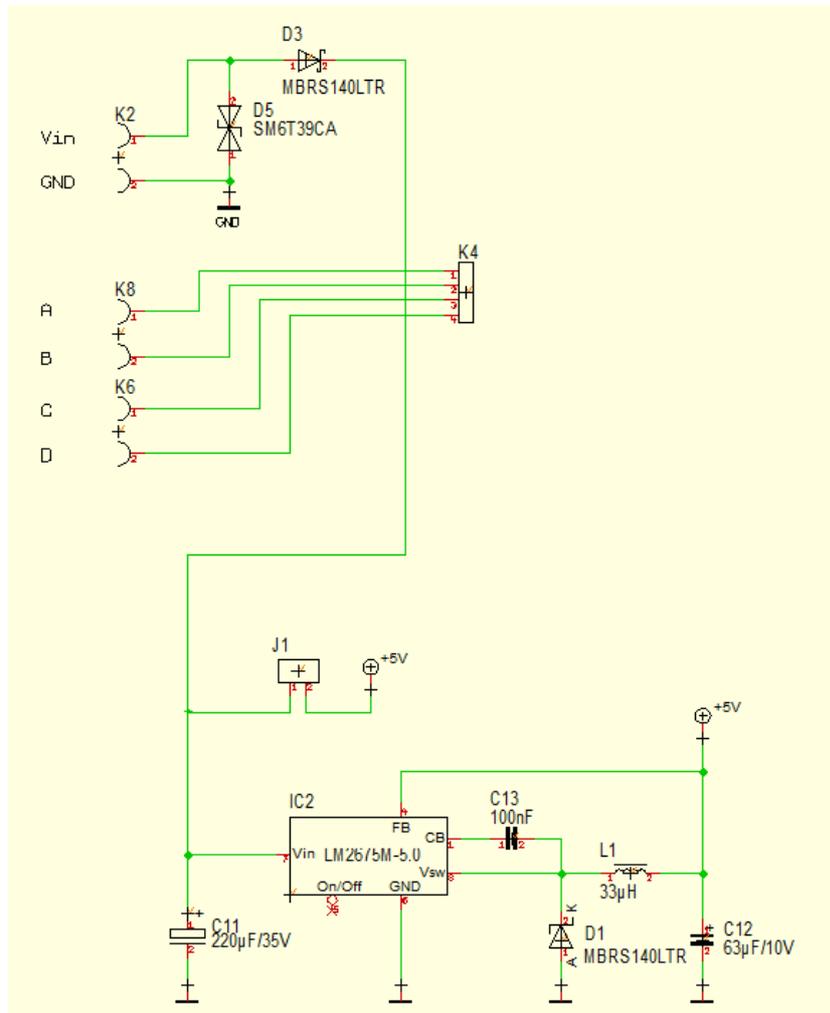


Perform the next steps only if you have the standard kit (includes the parts of the voltage regulator and USB socket). Otherwise continue with step 16.

Additional parts of Standard Version:

 <p>1x capacitor 100nF (C13)</p>	 <p>1x Electrolytic capacitor 220uF/35V (C11)</p>	 <p>1x Tantal capacitor 68uF (C12)</p>
 <p>1x suppressor diode SM6T39CA (code GP608) (D3)</p>	 <p>1x switching regulator IC LM2675 (IC2)</p>	 <p>1x Schottky diode MBRS140 (code pH21) (D1)</p>
 <p>1x inductor 330uH (L1)</p>	 <p>1x USB-A socket (K3)</p>	

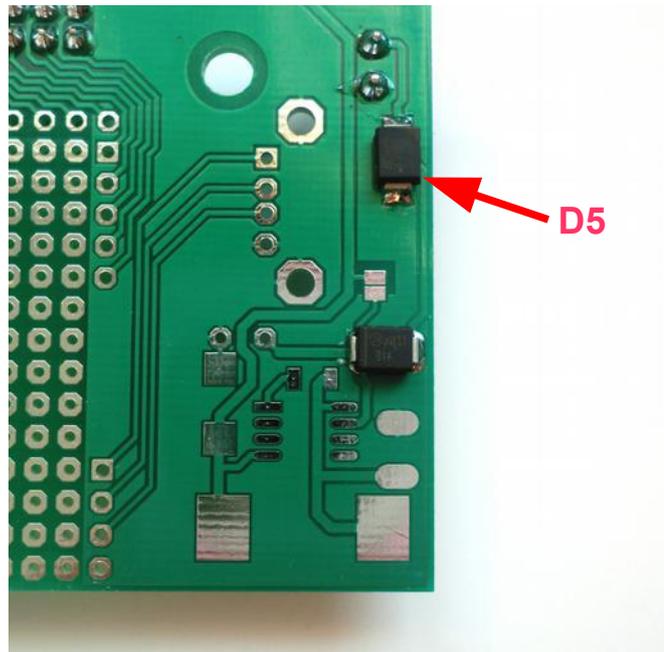
Power supply circuit:



Placement:

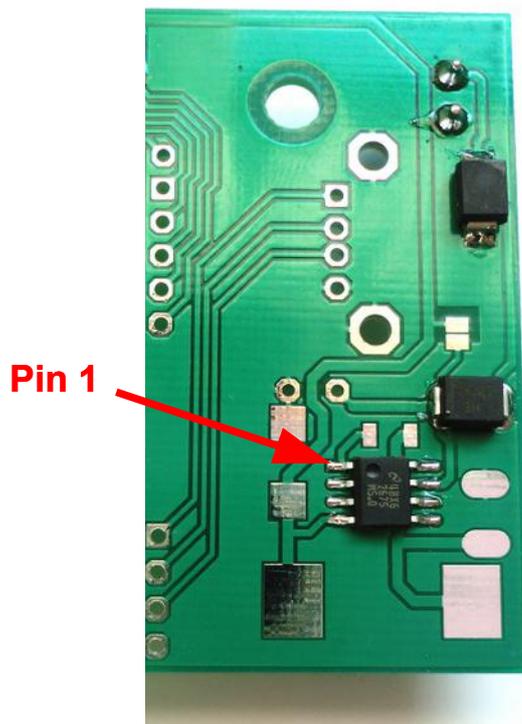


6.) *Assemble Diode D5*

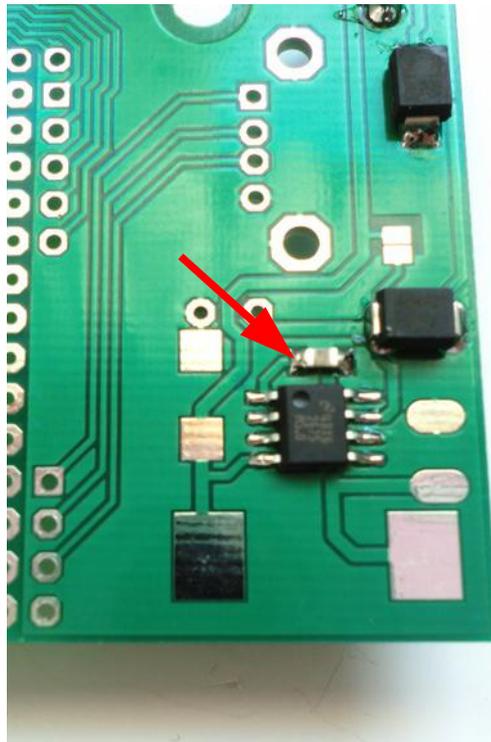


Pls Note: D5 has no polarity!

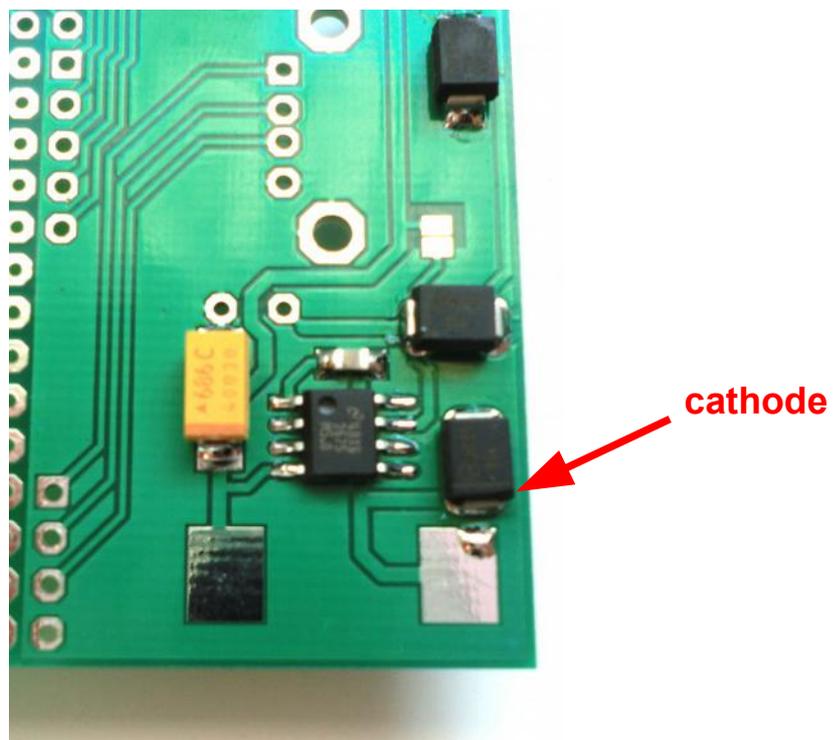
7.) *Assemble the switching regulator IC (IC2)*



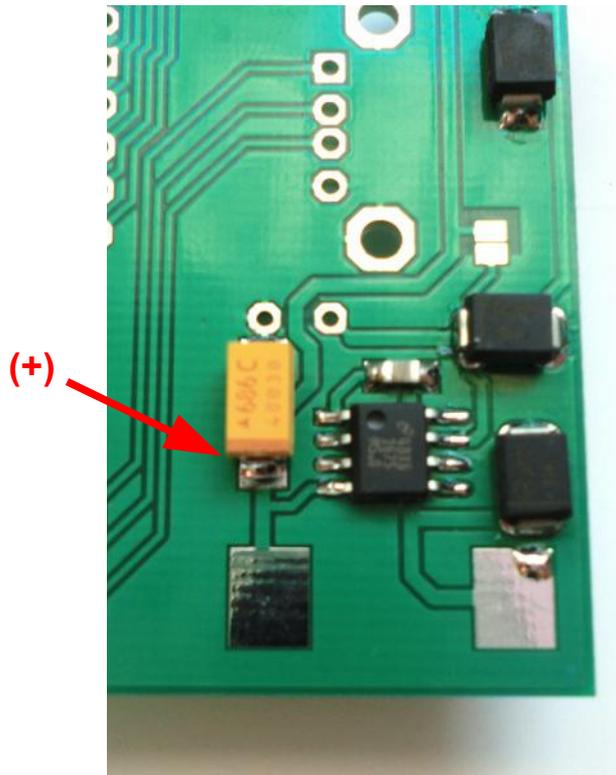
8.) Assemble the capacitor C13



9.) Assemble the schottky diode D1



10.) Assemble the tantalum capacitor C12



11.) *Prepare the inductance and pads*

Depending from the situation on the market we equip the kits with different inductors. Some of them need a special preparation.

preparation needed:



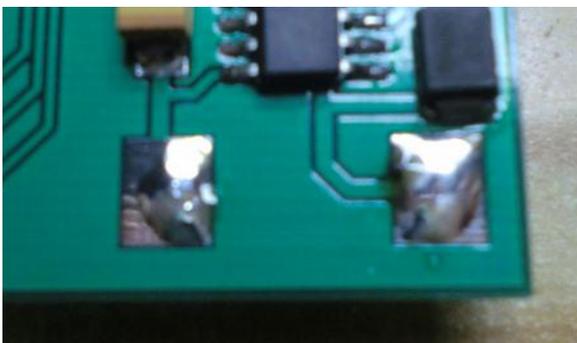
no preparation needed:



11.1) *add solder to the coil:*



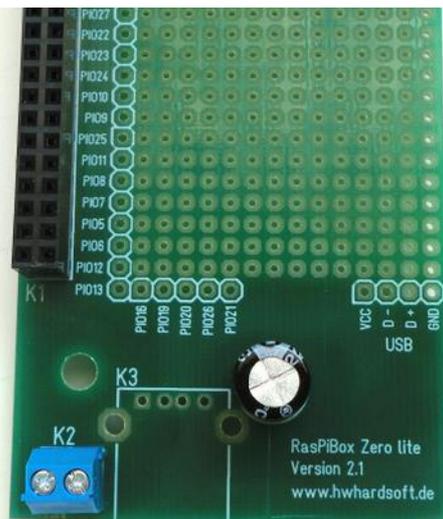
11.2) *add solder to the pcb:*



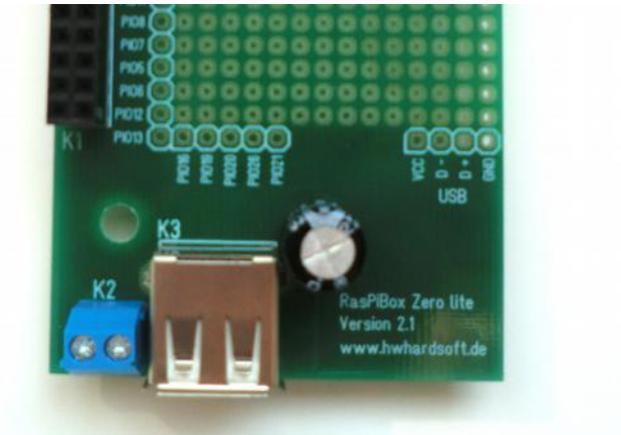
12.) Assemble the inductance L1



13.) Assemble the electrolytic capacitor C11



14.) Assemble the USB socket K3 (option)



15.) Connect the USB port

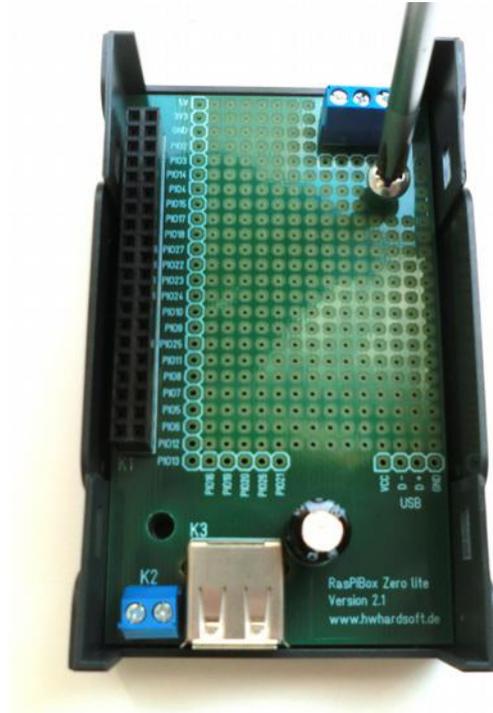
It's very important that the wires for D+ and D- have exactly the same length. The optimal length for the cables is 6-7 cm.



pcb	PiZero
Vcc	PP1
D-	PP23
D+	PP22

A ground connection is not needed!

16.) Mount the pcb into the bottom shell



17.) Mount the 2 holders for the din rail



Please take care to mount the holder from the inner channel to the outside!

18.) Mount the top shell!



Finish!