

Simon Says DIY kit

construction manual

Rev.	Date	Description
A	2014-01-18	First release
B	2019-03-17	Changed to pcb version 01-06

You need the following tools:

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



*a wet sponge to clean the
tip*



thin solder wire



a diagonal cutter for wires



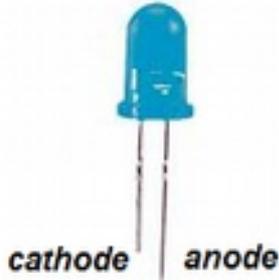
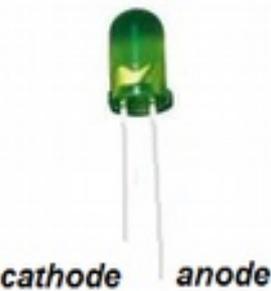
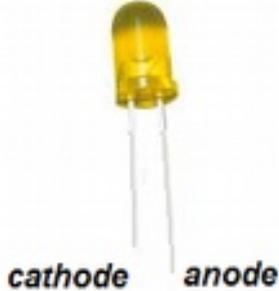
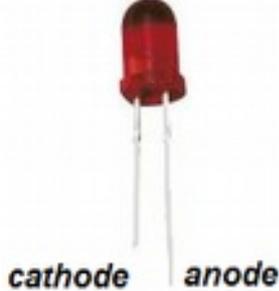
Needle nose pliers



A basic multimeter is not required but recommend



Parts

 <p>2x resistor 10 KOhm (R5, R6)</p>	 <p>3x resistor 220 Ohm (R1, R2, R3)</p>	 <p>1x resistor 560 Ohm (R4)</p>
 <p>1x piezo beeper (LS1)</p>	 <p>2x capacitor 100nF (C1, C2)</p>	 <p>1x LED blue, 5mm (D4)</p>
 <p>1x LED green, 5mm (D1)</p>	 <p>1x LED yellow, 5mm (D3)</p>	 <p>1x LED red, 5mm (D2)</p>



1x
Button, blue
(S4)



1x
Button, green
(S1)



1x
Button, yellow
(S



1x
Button, red
(S2)



4x
battery holder
(LS1)

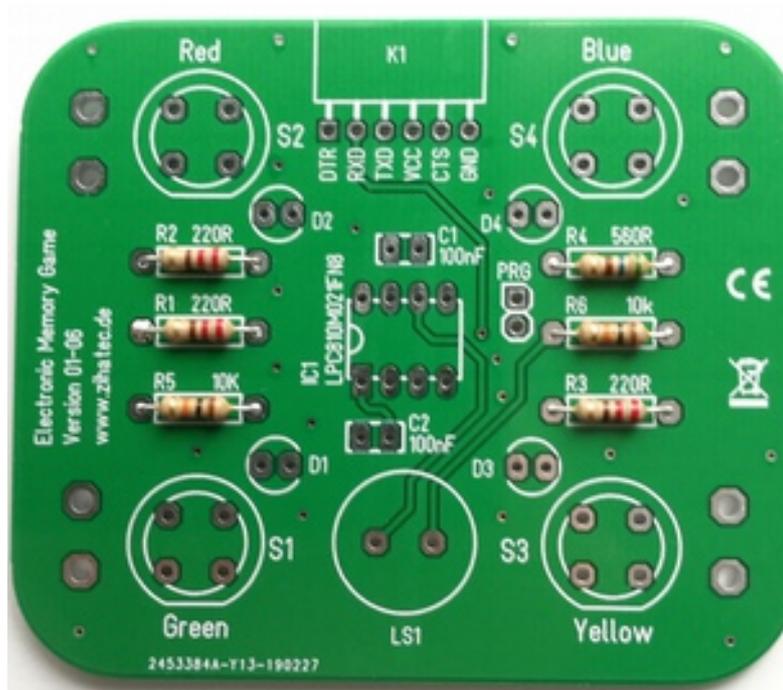


1x
IC socket

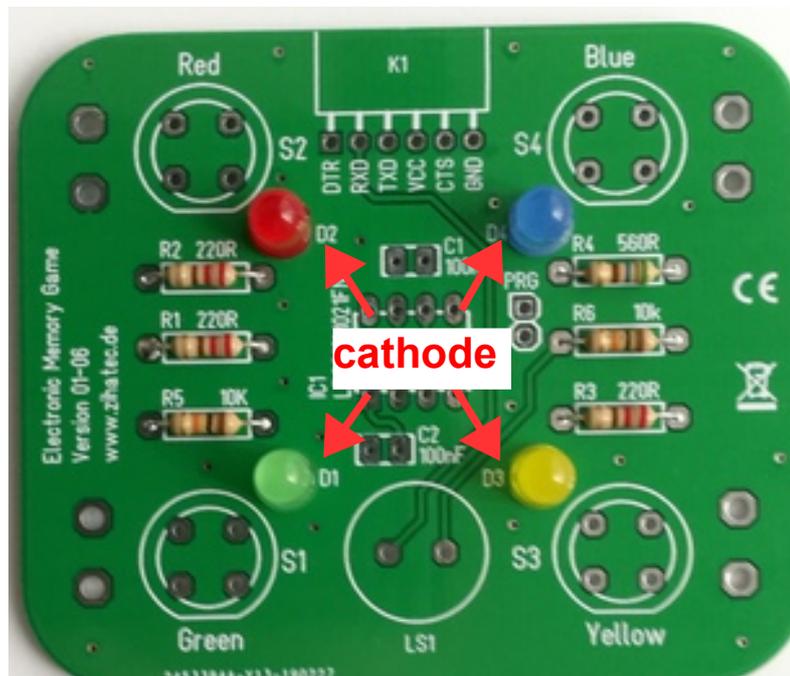


1x
microcontroller LPC810
(IC1)

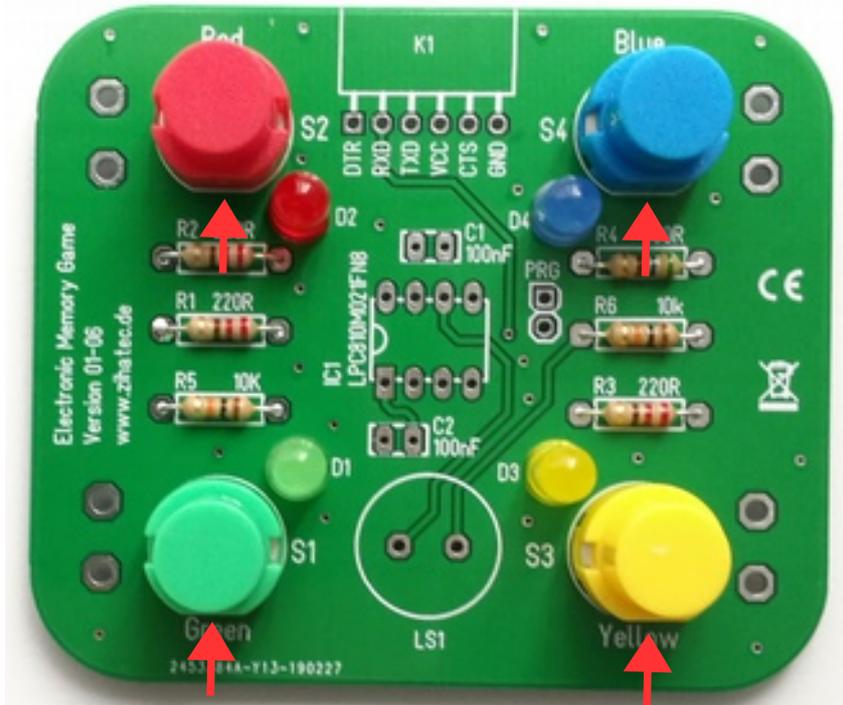
1.) *Assembly of the Resistsors (R1, R2, R3, R4, R5, R6)*



2.) *Assembly of the 4 leds (D1, D2, D3. D4)*

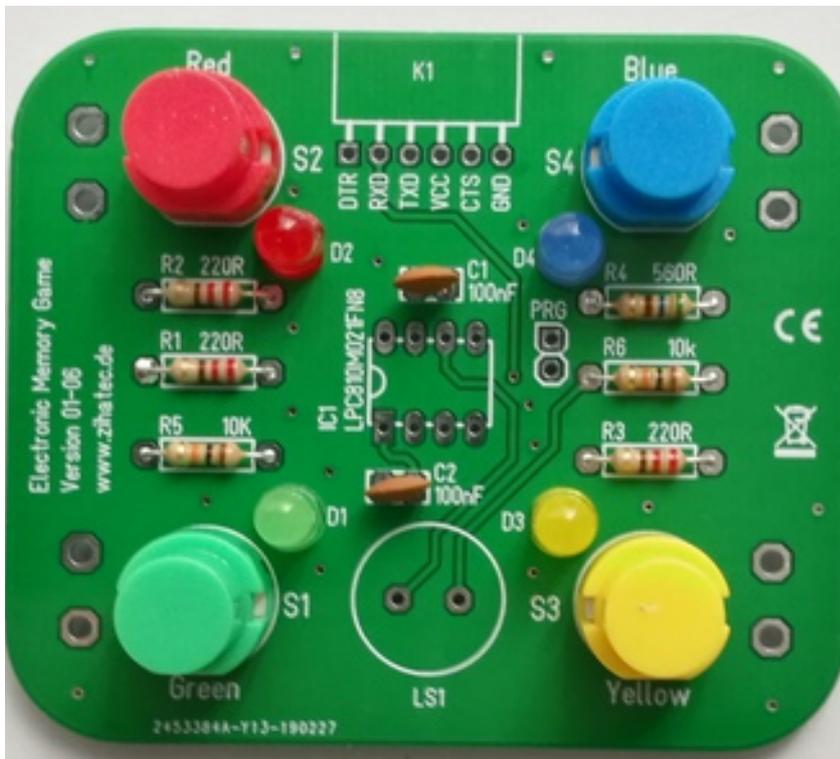


3.) *Assembly of the 4 buttons (S1, S2, S3, S4)*

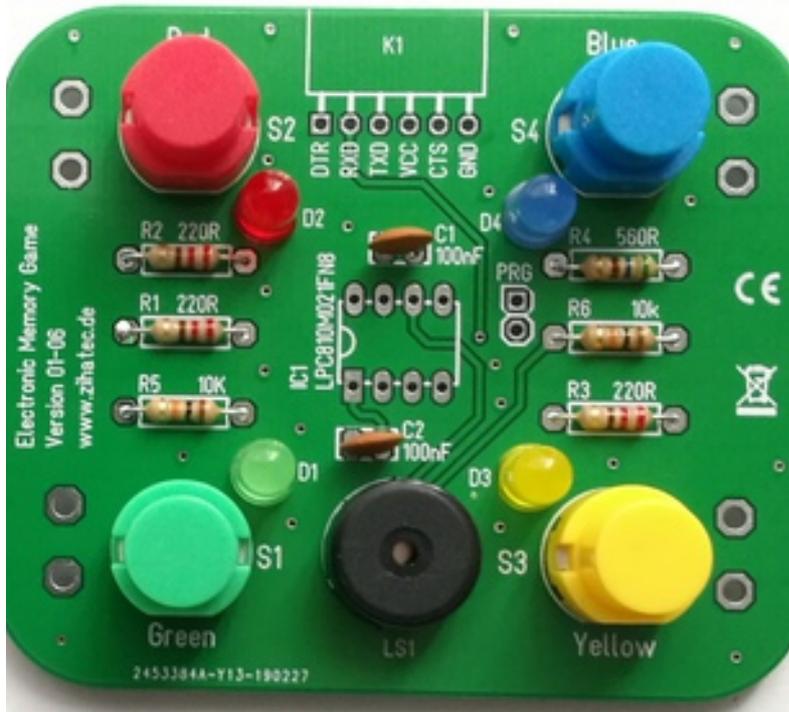


Note the position of the flattened side!

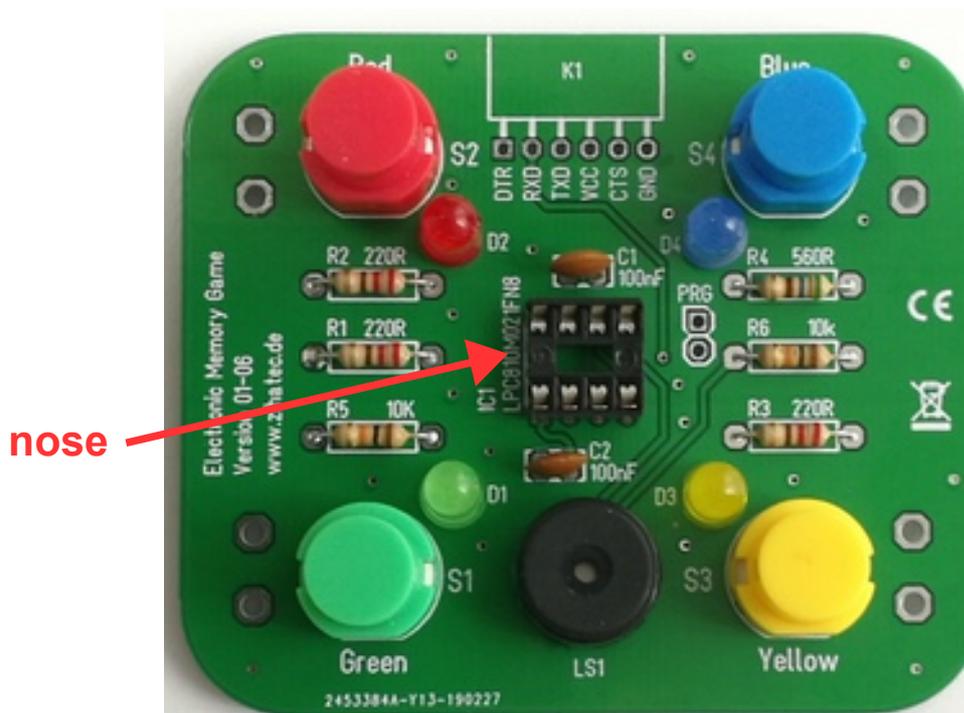
4.) *assemble the 100nF capacitors (C1, C2)*



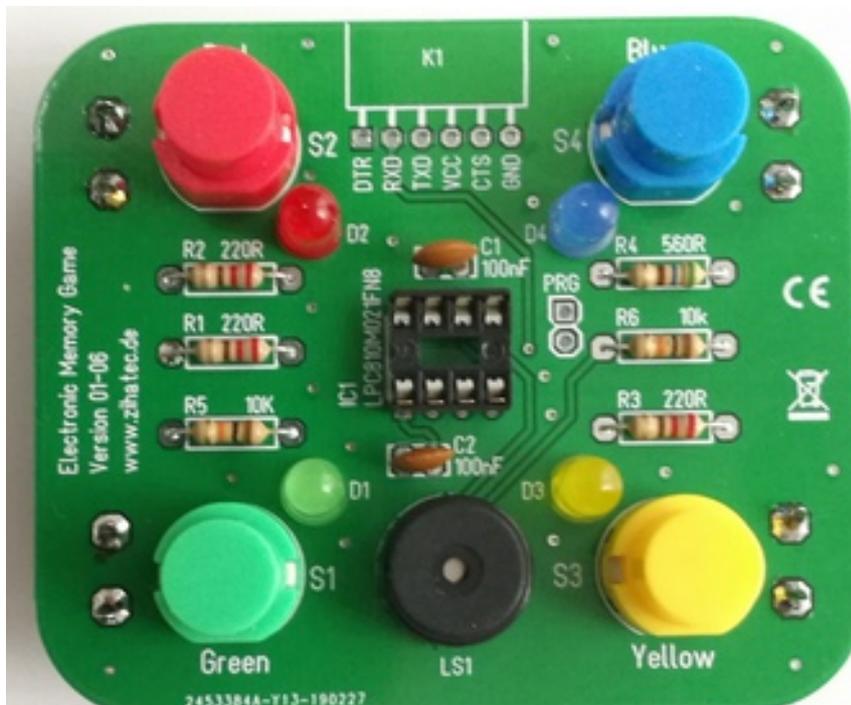
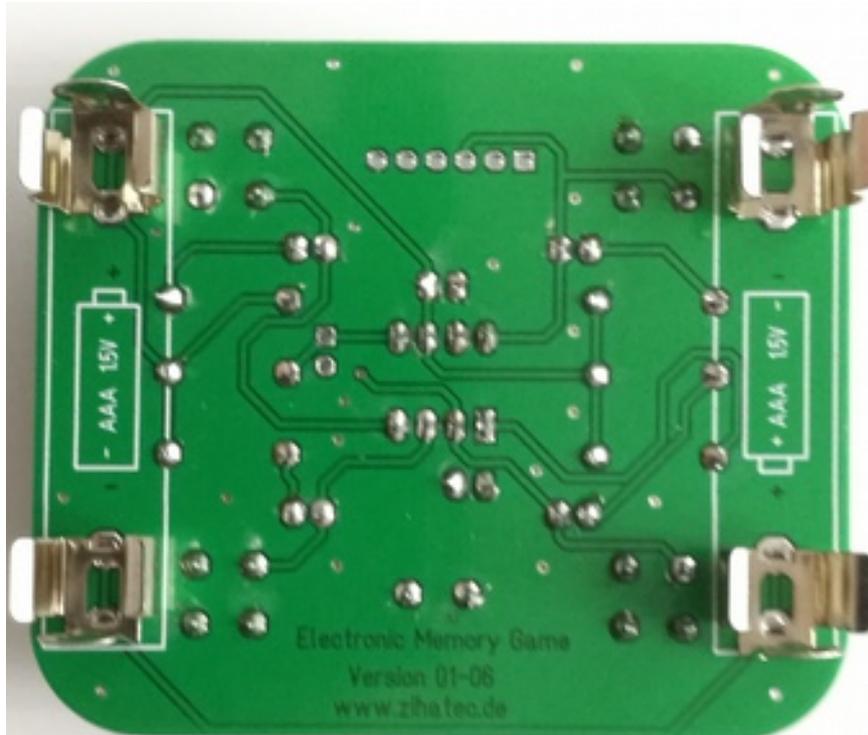
5.) *Assembly of the loudspeaker (LS1)*



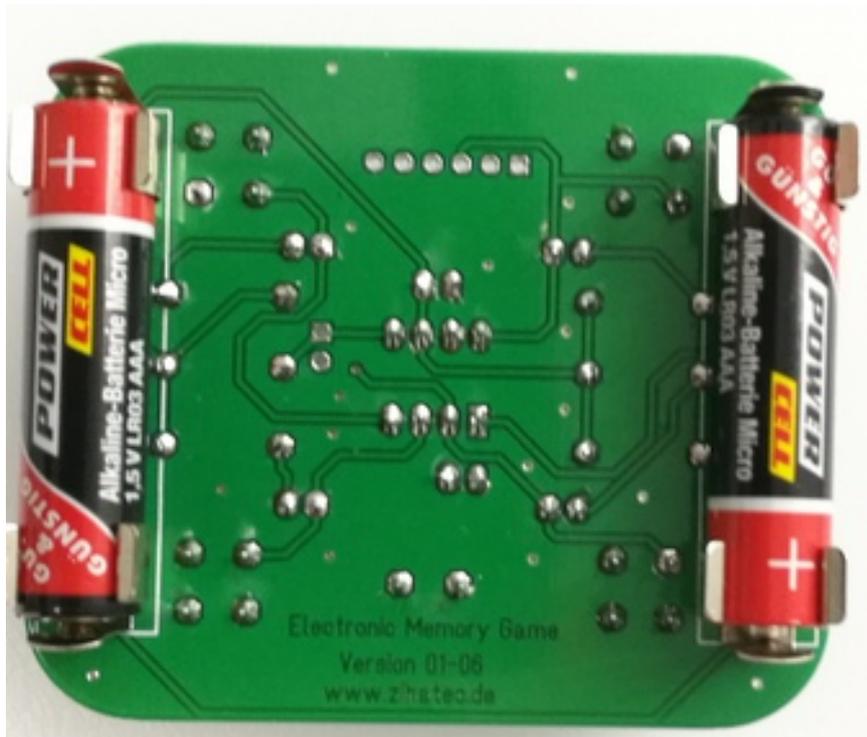
6.) *assemble the IC socket*



7.) Assembly of the battery holders



8.) *Place the AAA batteries in the holder*



9.) *testing of the assembled pcb*

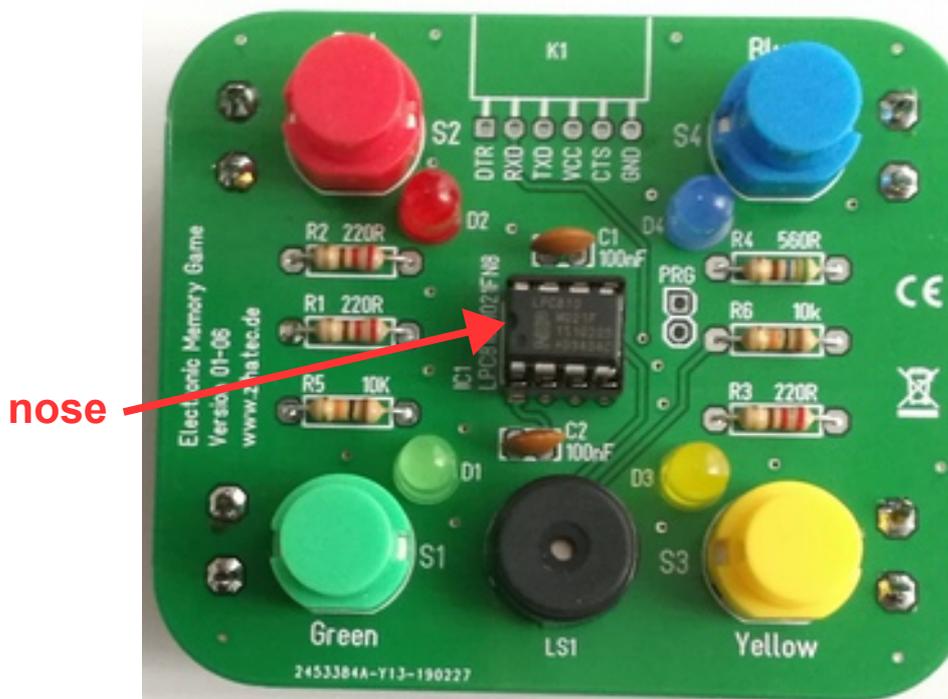
It's time for a pre test of the assembled pcb. Press any button. The corresponding LED have to light during you press the button:



If one or more LEDs not shine, you have to check the assembly direction (cathode/anode) of these LEDs. Furthermore check the soldering of the LED, corresponding resistor and button.

10.) *Remove the batteries now!*

11.) *Place the microcontroller (IC1) in the IC socket*



14.) *Place the battery in the holder again*

Finish!

Press the green button for a new game!

Trouble shooting:

Problem	Solution
No function	<ul style="list-style-type: none"> - check the direction of mounted batteries - check the voltage of the batteries (3V DC) - check the direction of mounted IC1 - check the soldering - remove the batteries, wait some seconds and place the batteries again
Single Led don't shine	<ul style="list-style-type: none"> - check the direction of mounted LED (cathode have to point to the center of pcb) - check the soldering of the corresponding resistor - check the soldering of the corresponding button
no sound	<ul style="list-style-type: none"> - check the soldering of the piezo beeper LS1 and the resistor R6