

Bleeble Tech Inc

Basic Controller

Soldering Instructions

Revision 1

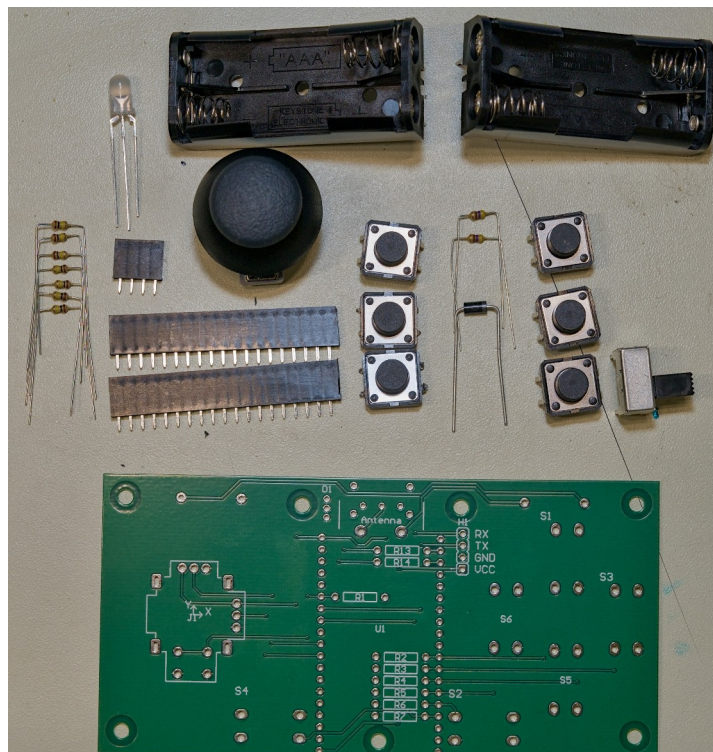
Last Updated: 2024-03-01

Before You Start

Make sure you have all your components and tools ready.

Parts include:

- 1x Printed Circuit Board
- 6x 12mm Square Push Button
- 7x 100kOhm Resistor (Brown-Black-Yellow)
- 2x 470 Ohm Resistor (Yellow-Purple-Brown)
- 2x AAA2 Battery Holder
- 2x 19-Pin Female Header
- 1x 4-Pin Female Header
- 1x SB140 Diode
- 1x Blue-Red Bi-Color Common Cathode LED
- 1x Sliding Switch
- 1x Joystick



The minimum tools needed to assemble a controller are:

- Soldering Iron with Solder
- Flush Cutters
- Needle-Nosed Pliers
- Duck (optional)



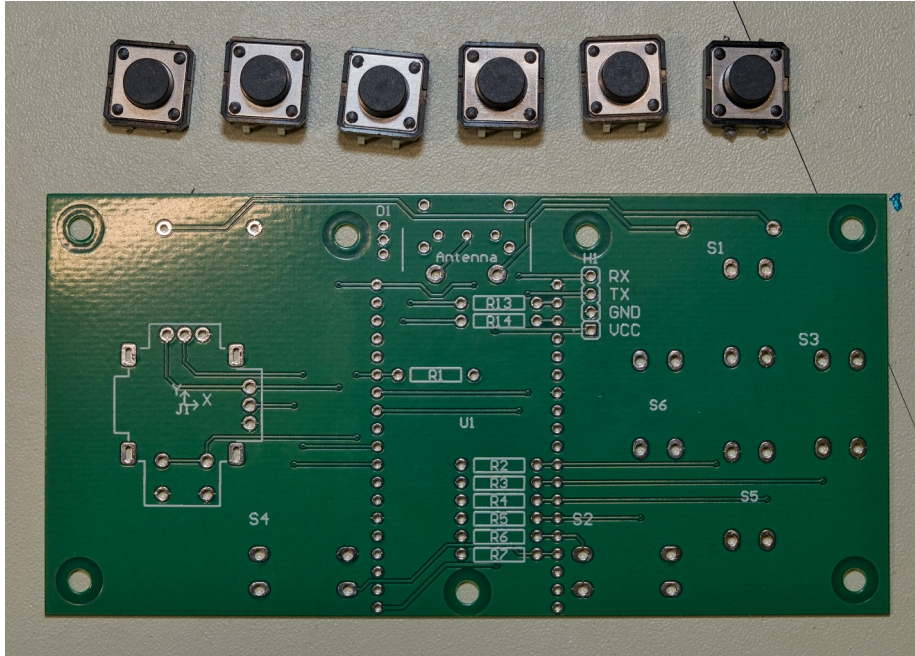
Using Helping Hands to hold the PCB and components makes assembly easier, but they are not required.

Tips for assembly are provided in *italics*. They do not need to be followed, but they will help make the assembly process easier.

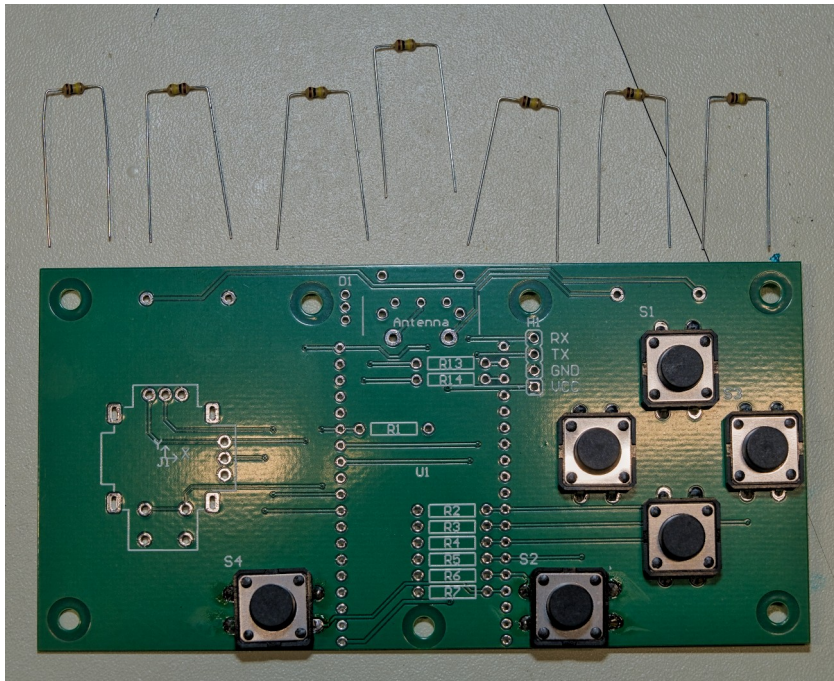
Important info is in **bold**. These pieces of information should not be skipped over.

Assembling the Controller

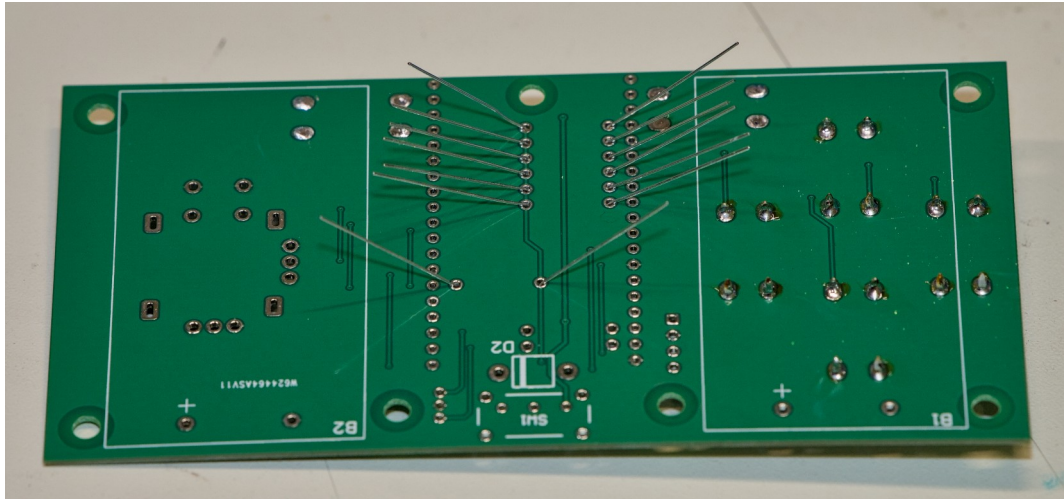
1. Start by soldering the 6 buttons. These are S1-6 on the PCB and schematic



2. Solder the 7 100kOhm resistors. These are labelled R1-7 on the PCB and schematic.

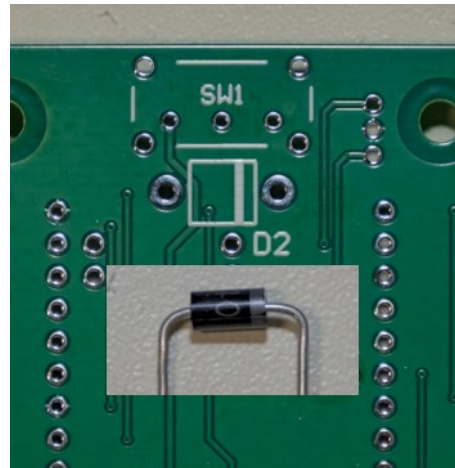
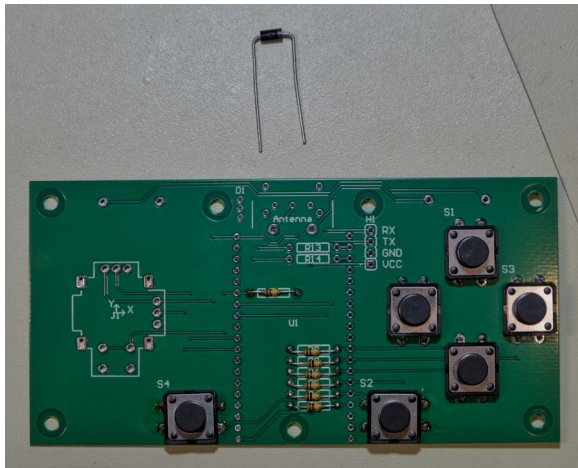


Tips: Use the Needle-Nosed pliers to bend the resistor leads to fit into the footprint on the board. Additionally, bending the leads outwards on the underside of the PCB helps hold the resistors in place while soldering.



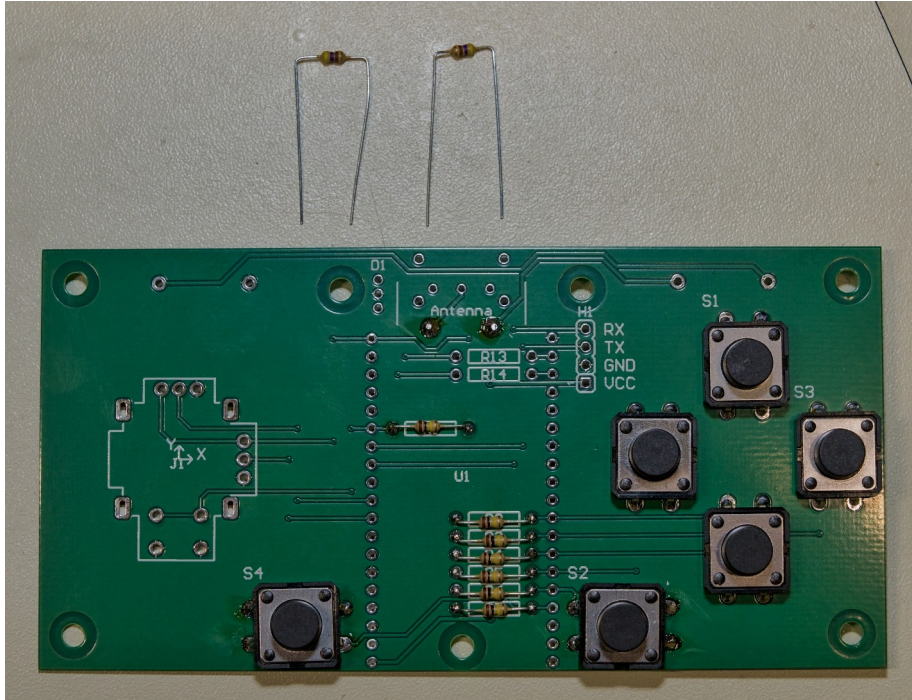
3. Solder the SB140 Diode to the PCB. This is D2 on the PCB and schematic.
IMPORTANT: Make sure the silver band on the diode is facing the same way as the graphic on the PCB

This diode goes on the bottom side on the PCB.



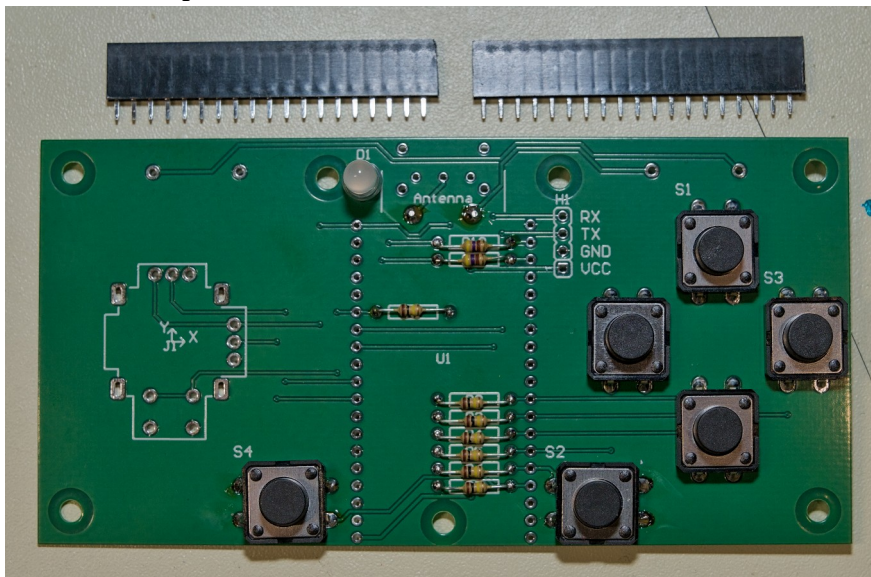
Tip: The assembly tips of the 100kOhm resistors can apply to the diode, though bending the leads outwards is usually not needed.

- Solder the 2 470Ohm resistors to the PCB. These are R13 and R14 on the PCB and schematic



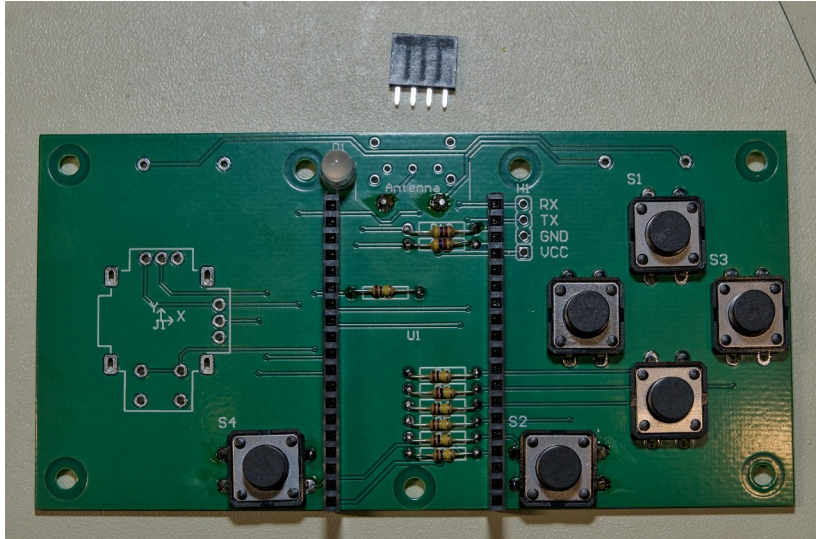
Tip: The same tips for the 100kOhm resistors applies to these ones too!

- Solder the 19-Pin headers to the PCB. This is U1 on the PCB and schematic.
Note: U1 is actually the ESP32 dev board, but it gets placed into these headers in case it ever needs to be replaced.



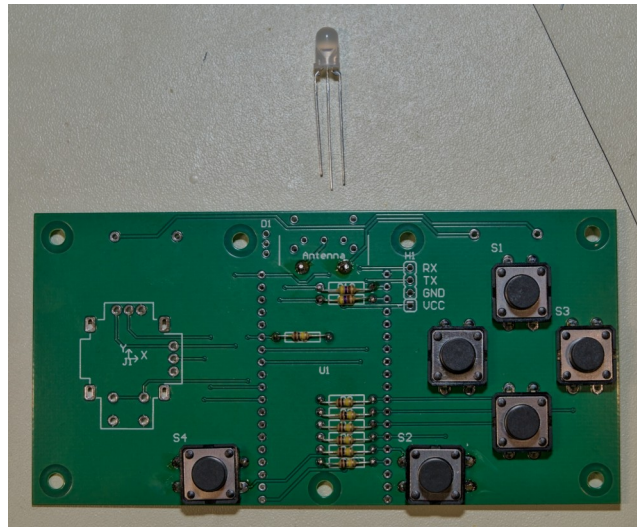
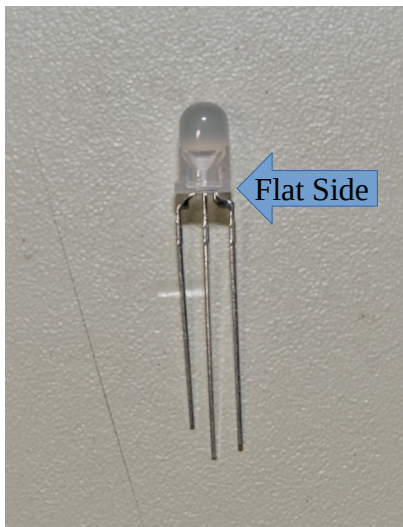
Tip: Ignore the already soldered LED, that is the 2 steps from now.

- Solder the 4-Pin header to the PCB. This is H1 on the PCB and schematic

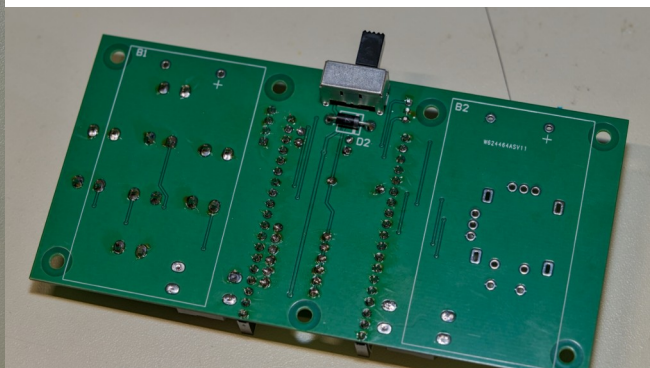
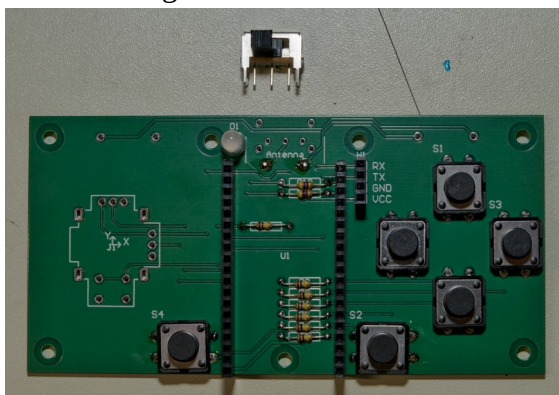


Tip: Again, ignore the already soldered LED, that is the next step.

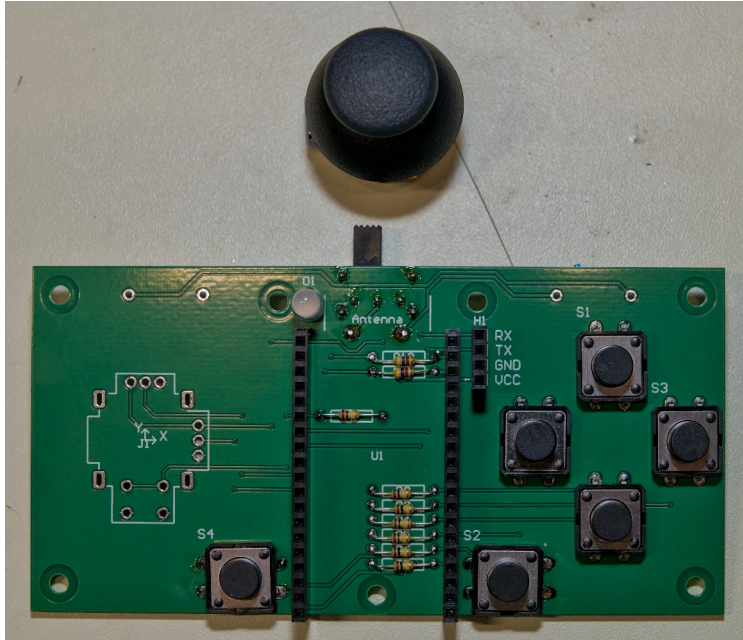
- Solder the Bi-Color LED onto the PCB. This is D1 on the PCB and schematic
IMPORTANT: The LED has one flat side on its housing. This side should face the edge of the PCB.



- Solder the power switch onto the PCB. This is SW1 on the PCB and schematic. This switch goes on the bottom side of the PCB.



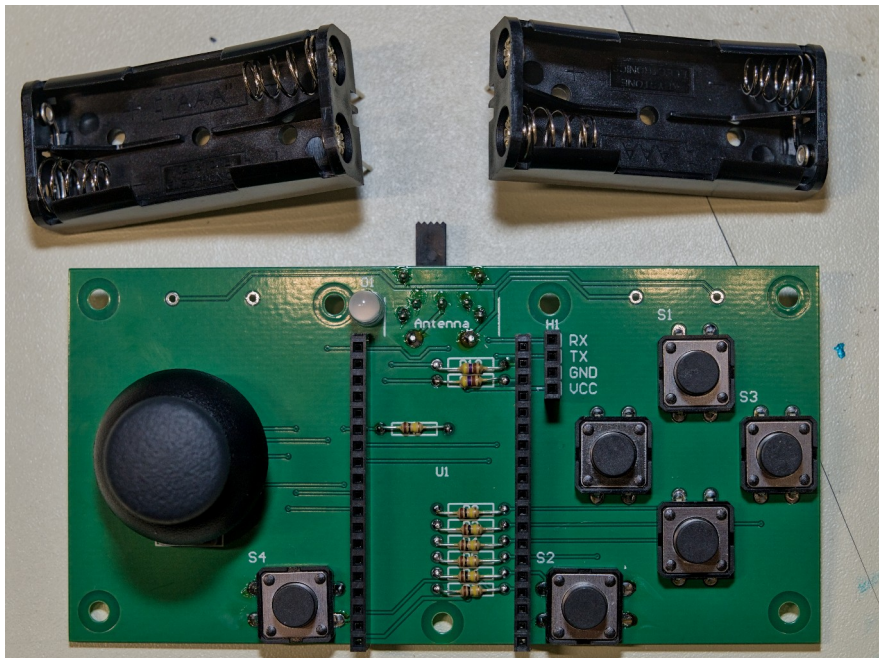
9. Solder the joystick to the PCB. This is J1 on the PCB and schematic



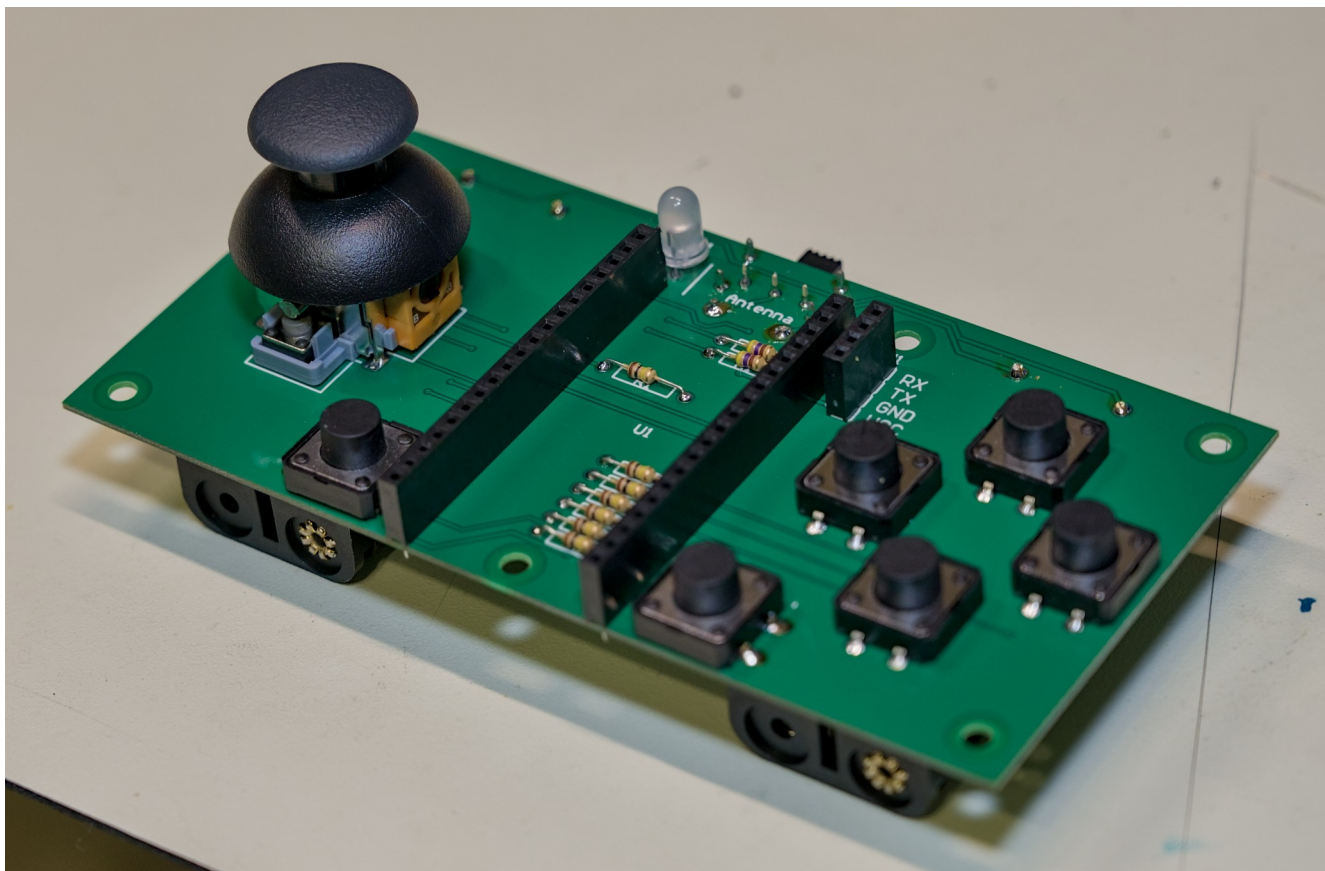
Tip: If you're having trouble keeping the board steady and you don't have any helping hands, using the centre-hole of a solder spool and playing the joystick into it can help stabilize the board.

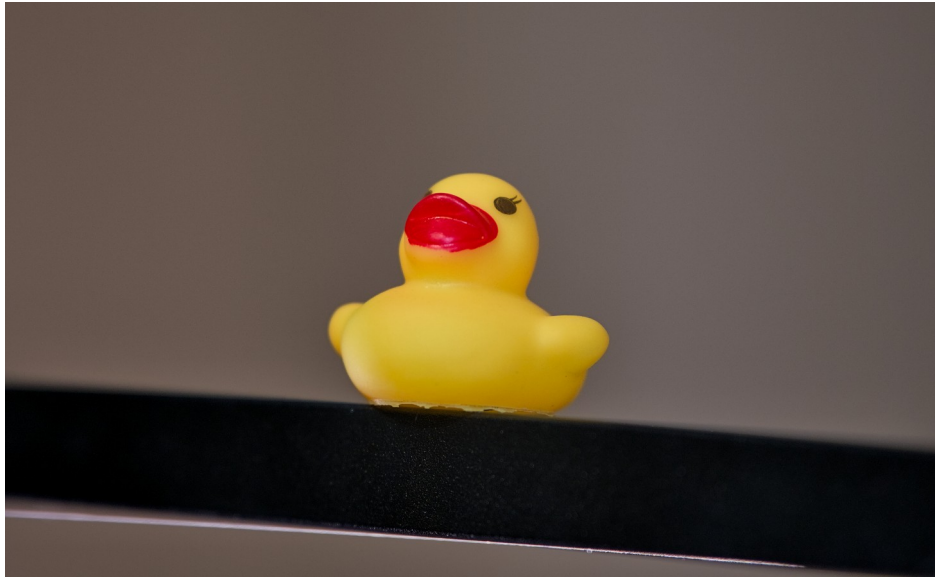
10. Solder the battery holders onto the PCB. These are B1 and B2 on the PCB and schematic. These solder to the back of the PCB.

IMPORTANT: These need to be soldered last, as they cover up the pins of most of the buttons and the joysticks.



Congratulations, you have assembled the PCB to the controller, all you have to do now is install an ESP32 dev-board into the header to get started (**The antenna of the ESP32 dev-board covers the “antenna” graphic printed on the board**)





If you made it this far, here is a duck!

Document Revisions

Revision	Date	Change
1	2024-03-02	Initial document release.