Hardware Setup Guide

Before you start, make sure the battery is charged. You should always charge it using the PowerBoost USB port because the PowerBoost is what handles charging safely. Do not charge the battery directly. Just plug it into the PowerBoost and wait until it is full.

Also, try not to use super long wires. It honestly just makes everything harder to fit inside the glasses. Medium wires around 4 to 5 inches work the best. Long enough to move stuff around but not so long that everything becomes a mess inside the frame.

1. Put the SD card into the Pi

Take your imaged SD card and slide it into the Raspberry Pi Zero slot. Make sure it clicks so it is actually in there.

2. Solder everything that needs wires

Do all the soldering before you try fitting things into the glasses because once everything is inside it gets annoying to fix.

Solder the microphone wires

Assuming you are holding the Raspberry Pi so the SD card slot is facing down, the pins are arranged in 20 pairs going straight down. The numbering starts at the top left with pins 1 and 2. Right under that is 3 and 4, then 5 and 6, and it keeps going like that all the way to the bottom. The left column is all the odd numbers and the right column is all the even numbers. The I2S mic has 6 pads. Solder wires to each pad, then the other end of each wire goes to the Pi like this:

Mic Pin	Pi Pin
3V	Pin 39
GND	Pin 32

BCLK	Pin 29
Dout	Pin 3
LRCL	Pin 6
SEL	Pin 27

When you solder the mic, try making it so the mic head points the opposite direction from the Pi ports. This makes it easier to guide it through the top slit in the glasses later.

Solder the PowerBoost USB port

The small USB port that comes with the PowerBoost needs to be soldered to the PowerBoost board so you can power the Pi.

3. Place the Raspberry Pi into the glasses

Slide the Raspberry Pi into the bigger arm of the glasses. The USB and HDMI ports should be facing down toward the bottom opening. The camera connector on the Pi should be facing the front slit because that is where the camera will go.

Do not glue anything permanently yet. Just place it so you can line everything up.

4. Set up the camera

Take the camera ribbon and connect it to the Pi camera port. Metal contacts on the ribbon face inward toward the Pi.

Push the camera module through the front slit so the camera stays outside the frame at eye level and the ribbon stays inside the arm. You can glue the camera lightly to the front once it is lined up.

5. Set up the microphone

Feed the mic wires through the top opening of the glasses arm. The mic sits outside the frame near the top slit so it can pick up audio better. Glue it gently to the side once you are sure the wiring is correct.

Inside the arm, lay the wires as flat as you can. Do not bend the ribbon cable sharply.

6. Put the battery and PowerBoost in the battery case

Put the big blue battery into the larger side of the 3D printed case. The PowerBoost goes into the smaller section.

The diamond shaped holes in the case let you run cables out.

Connect the battery to the PowerBoost using the JST connector port that is already in the power boost.

7. Connect power

Use a micro USB cable to connect the PowerBoost output to the Raspberry Pi power port.
This is the main power line for the whole device.

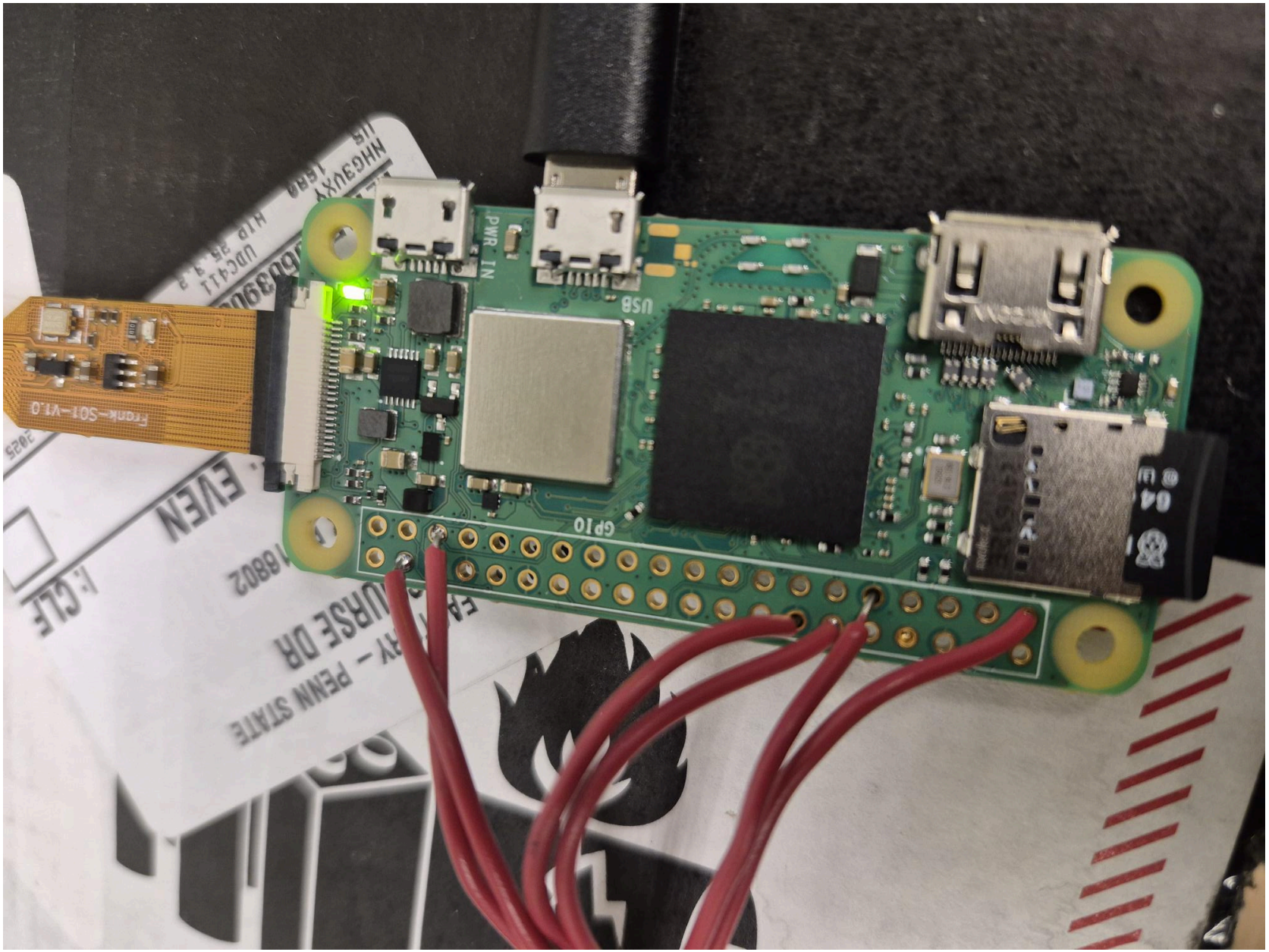
Most people use the long cable so they can clip the battery case to their shirt or belt and keep the glasses light but you could change the size of this cable to wear it differently and to custom fit different individuals.

8. Final positioning inside the glasses

Once everything is wired:

- Camera is coming out of the front slit
- Mic is coming out of the top slit
- Raspberry Pi sits in the thicker arm
- Wires run neatly inside without crazy bends
- Ribbon cable is not twisted
- Power comes from the battery case through the long micro USB cable

Use adhesive squares or a small amount of electronics friendly glue to keep things in place. Do not cover Pi ports or the SD card slot because you might need them later.


PWR IN
USB
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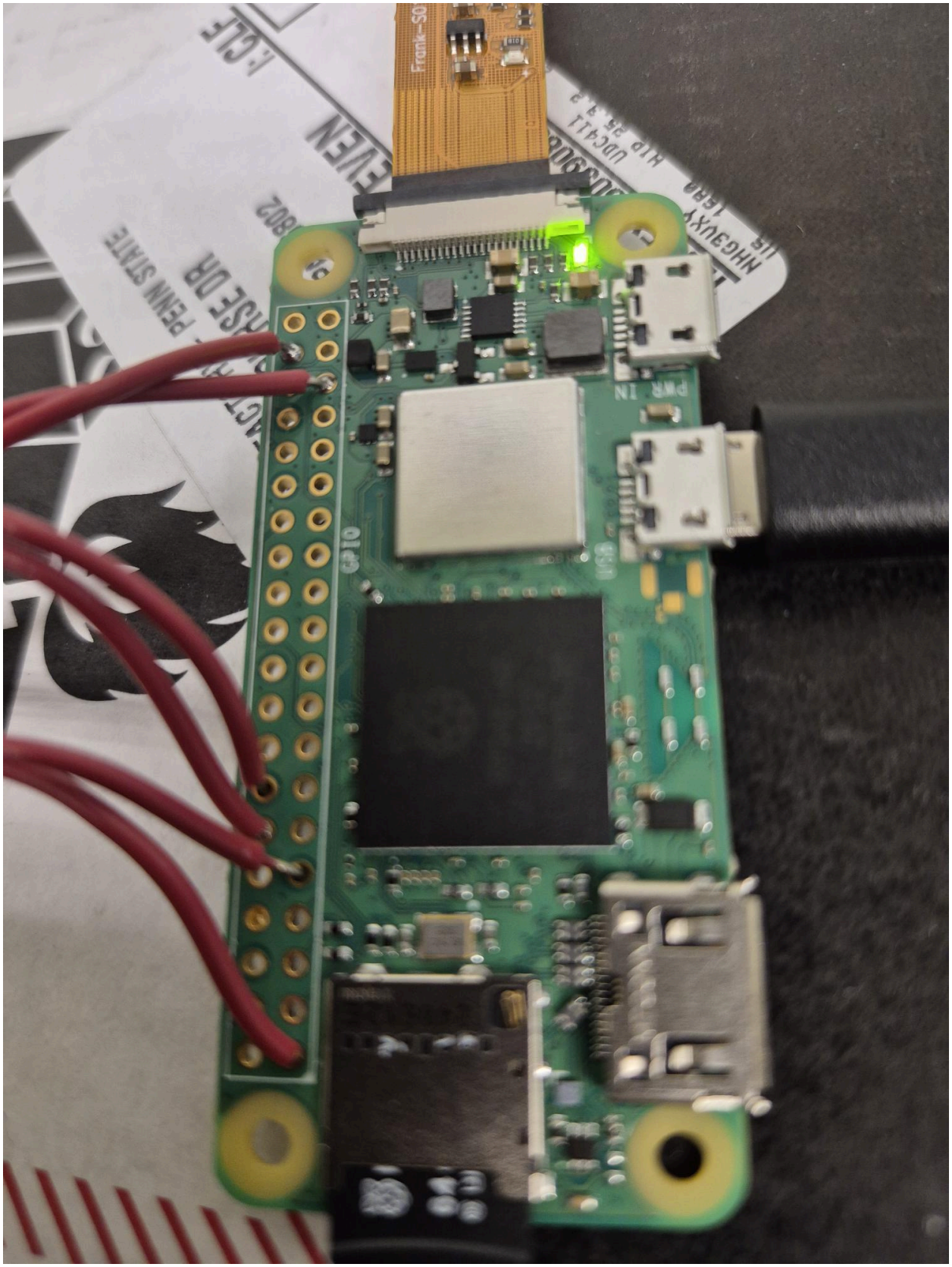
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1 LBS
1 OF 1
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For more information