

Control Device Assembly Guide

User Manual & Assembly Instructions



Table of Contents

1. Hardware & Software Requirements.....	3
1.1 Hardware & Software Requirements.....	3
1.2 Tools & Software.....	3
2. Pre-Assembly Preparation.....	3
2.1 Flash DietPi & Install LXDE GUI.....	3
3. Assembly Steps.....	4
3.1 Insert Threaded Inserts.....	4
3.2 Build Remote-Stand Triangle.....	4
3.3 Mount the Display.....	4
3.4 Secure Orange Pi Zero 2W.....	4
3.5 Attach Heatsinks.....	4
3.6 Connect Cables.....	4
3.7 Mount Battery Pack.....	4
3.8 Cable Management.....	4
3.9 Final Check & Power-On.....	4
4. Tips & Troubleshooting.....	5
5. Example pictures of final product.....	5

1. Hardware & Software Requirements

1.1 Hardware Components & 3D-Printed Parts

Component	Details
JSAUX Mini HDMI → HDMI Adapter	4K@60Hz, Mini HDMI Male → HDMI Female
Anker USB-A → USB-C Cables	2 × 3 ft
VIEWMEI 5" IPS HDMI Monitor + Stand	1280×720, includes kickstand
Orange Pi Zero 2W	Allwinner H618, 2GB RAM, Wi-Fi & BT
SanDisk 128 GB microSDXC	UHS-I
Miady 10 000 mAh PD Battery Pack	Dual USB-A & USB-C (22.5W)
FLYSKY FS-i6X Transmitter + FS-ia6B Receiver	2.4 GHz, 10 CH
Sticky Velcro Tape	For battery mounting
Zip Ties	Various lengths for cable management
3D-Printed Mounts	PLA, 2 walls, 30% infill: - Bottom - Top - RemoteDisplayMount
Heatsinks + Thermal Tape	14×14×6 mm (SoC) 9×9×5 mm (PMIC)
Fasteners & Inserts	M2×10 mm SCHS bolts ×4 M2 washers ×4 M2×4 mm inserts ×4

1.2 Tools & Software

- Soldering iron (200 °C) for insert installation
- Phillips screwdriver (M2 screws)
- Balena Etcher for flashing DietPi image
- DietPi image for Orange Pi Zero 2W
- microSD card reader

2. Pre-Assembly Preparation

Ensure a clean, well-lit workspace. Verify all components against the parts list before beginning.

2.1 Flash DietPi & Install LXDE GUI

1. Insert microSD into a reader and launch Balena Etcher.
2. Select the DietPi image for Orange Pi Zero 2W, choose the microSD, and flash.
3. Insert microSD into the Pi and power on.
4. At DietPi menu, navigate to Software Options → Desktop and install LXDE.
5. Power down the Pi and remove power.

3. Assembly Steps

3.1 Insert Threaded Inserts

6. Heat each M2×4 mm bevelled insert to ~200 °C.
7. Gently press into countersunk holes of top 3D print until flush.

3.2 Build Remote-Stand Triangle

8. Zip-tie monitor stand bottom to upper legs of remote handle.
9. Zip-tie stand kickstand to opposite handle bar forming a strong triangle.

3.3 Mount the Display

10. Attach brass standoffs to monitor rear.
11. Secure RemoteDisplayMount to standoffs with screws.
12. Zip-tie mount to stand so display faces user, ports to right.

3.4 Secure Orange Pi Zero 2W

13. Place bottom 3D mount on stand cross-bar.
14. Position Pi on bottom mount and align top mount.
15. Fasten with four M2×10 mm SCHS bolts + washers into threaded inserts.

3.5 Attach Heatsinks

16. Apply thermal tape to heatsinks.
17. Attach 14×14×6 mm to SoC and 9×9×5 mm to PMIC, press firmly 10 sec.

3.6 Connect Cables

18. Mini-HDMI on Pi → JSAUX → monitor HDMI.
19. Battery USB-C → Pi USB-C.
20. Battery USB-A → Monitor USB power port.

3.7 Mount Battery Pack

21. Apply Velcro tape to battery and remote back.
22. Press battery pack firmly into Velcro anchor.

3.8 Cable Management

23. Bundle cables and secure with zip ties along frame.
24. Leave slight slack to avoid connector stress.

3.9 Final Check & Power-On

25. Verify all fasteners and cables are secure.
26. Power on battery pack, then boot Pi.
27. Confirm LXDE desktop on monitor.

4. Tips & Troubleshooting

- Confirm orientation of 3D-printed parts before hardware insertion.
- Temporarily connect cables and power on to test before final zip-tying.
- If display stays blank, verify battery charge and cable orientation.
- Reserve extra zip ties and Velcro for later adjustments.
- Allow 5–10 min for DietPi first-boot and LXDE install.

5. Example pictures of final product

Attached below are pictures of what the end product should look like. Reference this section as you are going on with assembly to see if you are on the right track.









