CUIPPWRJ Petrel 120X HD

CUIPPWRJ Petrel 120X HD Digital Racing Drone User Manual

Model: Petrel 120X HD (CUIPPWRJ123)

1. INTRODUCTION AND SAFETY GUIDELINES

This manual provides essential instructions for the safe operation, setup, and maintenance of your CUIPPWRJ Petrel 120X HD Digital Racing Drone. Please read this manual thoroughly before operating the drone to ensure proper function and to prevent damage or injury.

Safety Precautions:

- Always operate the drone in open areas, away from people, animals, and obstacles.
- Ensure all propellers are securely attached and undamaged before each flight.
- Keep hands and face clear of rotating propellers.
- Do not operate the drone in adverse weather conditions (e.g., strong winds, rain).
- Regularly inspect the drone for any signs of damage or wear.
- Use only recommended batteries and charging equipment.
- Adhere to local regulations regarding drone operation.

2. PACKAGE CONTENTS

Verify that all items listed below are present in your package:

- 1x Petrel 120X HD Toothpick Frame
- 1x Zeus25 AIO 3-6S Flight Controller
- 1x CADDX Vista Nebula Nano Cam
- 4x 1404 KV3600 Motor
- 8x 3016 3 Inch 3-Blade Propellers
- 1x Hammer Antenna (LHCP)
- 2x 10*150mm Battery Strap
- 1x Receiver (Optional, TBS Nano BNF variant includes receiver)

This image displays the CUIPPWRJ Petrel 120X HD Digital Racing Drone. It features a black frame, four motors with propellers, and a central camera unit. The drone is designed for agility and speed.

3. Technical Specifications

Brand Name	Petrel 120X HD Toothpick Racing Drone
Model Number	CUIPPWRJ123
Net Weight	108.5g (without receiver)
Frame Type	3"3" Toothpick Frame
Wheelbase	120mm
Bottom Plate Thickness	3mm
Flight Controller	Zeus25 AIO 3-6S (BF ZEUSF722_AIO firmware)
ESC Firmware	BL32
Camera System	CADDX Vista Nebula Nano Cam (5.725-5.850 GHz, 7.4-26.4V input)
Motor	1404 KV3600
Recommended Battery	4S LiPo (300mAh - 650mAh)
Propellers	3016 3 Inch 3-Blade
Overall Size	108 * 108mm
Item Weight (Package)	14.1 ounces
Package Dimensions	1.18 x 0.79 x 0.39 inches

4. Initial Setup

1. **Unpacking and Inspection:** Carefully remove all components from the packaging. Inspect the drone frame, motors, propellers, and electronics for any visible damage.

2. **Propeller Installation:** Attach the 3016 3-inch 3-blade propellers to the 1404 KV3600 motors. Ensure correct rotation direction (CW and CCW) as indicated on the propellers and motors. Secure them firmly.

3. **Battery Connection:** Connect a fully charged 4S LiPo battery (300mAh - 650mAh recommended) to the drone's power lead. Ensure the polarity is correct. The drone should power on.

4. **Receiver Binding (for BNF versions):**
   - For the TBS Nano BNF variant, refer to the specific TBS Nano receiver manual for binding instructions with your compatible radio transmitter.
   - Ensure successful binding before proceeding to flight controller configuration.

5. **Flight Controller Configuration (Betaflight):**
   - Connect the drone to your computer via USB.
   - Open the Betaflight Configurator software.
   - Ensure the flight controller firmware is BF ZEUSF722_AIO. Update if necessary.
   - Configure your receiver, modes (Arm, Angle, Acro, etc.), and OSD settings as per your preference.
   - Calibrate the accelerometer.

6. **CADDX Vista Nebula Nano Cam Setup:**
   - Power on the drone and your FPV goggles.
   - Follow the CADDX Vista instructions to bind the unit to your FPV goggles for digital video transmission.
   - Verify clear video feed and OSD display.

5. OPERATING INSTRUCTIONS

1. **Pre-Flight Check:**
   - Ensure battery is fully charged and securely attached.
   - Check all propellers for damage and tightness.
   - Verify radio transmitter and FPV goggles are powered on and functioning.
   - Confirm clear FPV video feed.
   - Check flight area for obstacles and people.

2. **Arming the Drone:**
   - Place the drone on a flat, level surface.
   - Move the arming switch on your radio transmitter to the 'armed' position (as configured in Betaflight). The motors will spin slowly, indicating the drone is armed.
   - *Warning:* Once armed, propellers can spin rapidly. Exercise extreme caution.

3. **Takeoff and Flight:**
   - Gently increase the throttle to lift off.
   - Use the pitch, roll, and yaw controls for directional movement.
   - Monitor battery voltage via OSD and land before it drops too low to prevent damage.

4. **Landing and Disarming:**
   - Reduce throttle slowly to descend.
   - Once on the ground, move the arming switch to the 'disarmed' position. Motors will stop.
   - Disconnect the battery immediately after landing.

6. Maintenance

- **Regular Inspection:** After each flight, inspect the frame, motors, and propellers for cracks, bends, or loose connections.
- **Propeller Replacement:** Replace any damaged or bent propellers immediately. Damaged propellers can cause instability and reduce flight performance.
- **Cleaning:** Keep the drone clean from dirt, dust, and debris. Use a soft brush or compressed air for cleaning. Avoid using liquids directly on electronic components.
- **Firmware Updates:** Periodically check for updated firmware for the Zeus25 AIO Flight Controller (BF ZEUSF722_AIO) and CADDX Vista Nebula Nano Cam. Follow manufacturer guidelines for firmware updates.
- **Motor Care:** Ensure motors spin freely. If a motor feels gritty or makes unusual noises, it may require cleaning or replacement.

7. Troubleshooting

Problem	Possible Cause	Solution
Drone does not arm.	Safety switch not engaged. Low battery voltage. Receiver not bound or signal lost. Flight controller error (e.g., accelerometer not calibrated).	Ensure arming switch is correctly set. Charge or replace battery. Re-bind receiver to transmitter. Connect to Betaflight Configurator to check errors and calibrate accelerometer.
No FPV video feed.	CADDX Vista not powered. Goggles not on correct channel/band. Binding issue between Vista and goggles. Damaged camera or video transmitter.	Check power connection to Vista. Ensure goggles are set to the correct frequency. Re-bind Vista to goggles. Inspect camera and antenna for damage.
Drone flies erratically.	Damaged propellers. Loose motor or frame components. Incorrect flight controller settings (PIDs). Motor desync.	Replace damaged propellers. Tighten all screws and inspect frame. Review Betaflight PID settings. Check ESC connections and settings.

8. Warranty and Support

For warranty information, please refer to the terms and conditions provided at the point of purchase. CUIPPWRJ products are typically covered by a limited manufacturer's warranty against defects in materials and workmanship.

For technical support, troubleshooting assistance beyond this manual, or spare parts inquiries, please contact your retailer or the manufacturer directly. Keep your proof of purchase for warranty claims.

Manufacturer: CUIPPWRJ

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