**FPVDrone 225mm FPV Racing Drone Frame**

# FPVDrone 225mm FPV Racing Drone Frame Instruction Manual

Model: 225mm FPV Racing Drone Frame

## 1. Introduction

This manual provides detailed instructions for the assembly, setup, and maintenance of your FPVDrone 225mm FPV Racing Drone Frame. This frame kit is designed for 5-inch propellers and features durable carbon fiber construction with 4mm thick arms, providing a robust foundation for your racing quadcopter build. Please read all instructions carefully before beginning assembly to ensure proper construction and safe operation.

## 2. Setup and Assembly

The FPVDrone 225mm frame kit requires assembly of its carbon fiber components and integration of your electronic systems. Ensure all parts are present before starting.

### 2.1 Package Contents

- Carbon Fiber Top Plate (1.5mm)
- Carbon Fiber Bottom Plate (2.0mm)
- Carbon Fiber Arms (4.0mm)
- Hardware Kit (screws, standoffs, nuts)
- Lipo Battery Strap
- Other small accessories (e.g., camera mounts, protective washers)

### 2.2 Frame Assembly Steps

1. **Attach Arms to Bottom Plate:** Secure the 4mm carbon fiber arms to the 2.0mm bottom plate using the provided screws and nuts. Ensure all screws are tightened securely but do not overtighten to avoid stripping threads or cracking carbon fiber.
2. **Install Standoffs:** Mount the aluminum standoffs onto the bottom plate. These will support the top plate and create space for internal components.
3. **Mount Top Plate:** Place the 1.5mm top plate onto the standoffs and secure it with the remaining screws.



*Figure 2.2.1: Top view of the assembled FPVDrone 225mm frame.*

## 2.3 Component Integration

After the frame is assembled, proceed with mounting your electronic components. This frame is designed to accommodate standard FPV drone components.

- **Flight Controller (FC) & Electronic Speed Controllers (ESCs):**Mount your FC and ESCs (or AIO FC) within the central stack area. Ensure proper isolation from the carbon fiber to prevent shorts. Note that some larger stacks may require careful placement due to the frame's compact design.
- **Motors:** Attach your motors to the ends of the carbon fiber arms. Ensure motor wires are routed safely and secured to prevent interference with propellers.
- **FPV Camera:** Install your FPV camera in the designated front mounting area. Be aware that some camera models (e.g., Runcam Swift/2) may require minor modifications or specific adapters for optimal fit.
- **Video Transmitter (VTX) & Receiver (RX):** Mount these components securely, ensuring antennas are positioned for optimal signal reception and transmission, away from carbon fiber which can block signals.
- **Lipo Battery Strap:** Use the provided Lipo battery strap to secure your flight battery to the top or bottom plate, depending on your preference and center of gravity requirements.




*Figure 2.3.1: Assembled frame shown with the included Lipo battery strap.*

## 3. Operating Considerations

While this manual focuses on the frame, proper operation of the complete FPV drone is crucial for safety and performance. This frame provides a stable platform for aggressive flying.

- **Pre-Flight Checks:** Always perform thorough pre-flight checks, including propeller security, battery connection, and flight controller arming.
- **Center of Gravity (CG):** Aim for a balanced center of gravity. Adjust battery placement using the Lipo strap to achieve optimal flight characteristics.
- **Vibration Management:** Ensure all components are securely mounted to minimize vibrations, which can affect flight performance and video quality. The frame's robust design helps reduce flex.
- **Safety:** Operate your FPV drone responsibly and in accordance with local regulations. Always fly in open areas away from people and property.

## 4. Maintenance

Regular maintenance ensures the longevity and safety of your FPVDrone frame.

- **Inspect Carbon Fiber:** After each significant crash or hard landing, inspect all carbon fiber plates and arms for cracks, delamination, or stress marks. Replace damaged components immediately.

- **Check Hardware:** Periodically check all screws, nuts, and standoffs for tightness. Vibrations during flight can loosen hardware over time.
- **Clean Frame:** Remove dirt, dust, and debris from the frame, especially around motor mounts and electronic components, to prevent overheating or electrical issues.
- **Arm Replacement:** The arms are designed to be replaceable. If an arm is severely damaged, remove the screws securing it to the bottom plate and replace it with a new one.

## 5. Troubleshooting

This section addresses common issues that may arise during the assembly or use of the FPVDrone 225mm frame.

- **Excessive Vibrations:**
  - Ensure all motor screws are tight and motors are balanced.
  - Check for bent or damaged propellers.
  - Verify that the arms are securely fastened and not loose.
- **Component Fit Issues:**
  - **Camera Mounting:** If your FPV camera does not fit perfectly, minor filing of the camera mount area or using a 3D-printed adapter may be necessary for certain camera models.
  - **Stack Height:** For taller electronic stacks, consider using individual ESCs instead of a 4-in-1 ESC to reduce overall stack height, or ensure longer standoffs are used if available.
- **Electrical Shorts (PDB):**
  - Before powering on, always check for continuity across positive and negative leads on your Power Distribution Board (PDB) or Flight Controller with a multimeter.
  - Use a smoke stopper during initial power-up to prevent damage to components in case of a short circuit.

## 6. Specifications

Key technical specifications for the FPVDrone 225mm FPV Racing Drone Frame:

| Feature | Detail |
|---|---|
| Model | 225mm FPV Racing Drone Frame |
| Wheelbase | 225mm |
| Arm Thickness | 4.0mm |
| Bottom Plate Thickness | 2.0mm |
| Top Plate Thickness | 1.5mm |
| Material | Carbon Fiber |
| Recommended Propeller Size | 5 Inch |
| Item Weight | 7 ounces (approximately 198 grams) |
| Product Dimensions | 8.7 x 4.02 x 1.5 inches (approx. 221 x 102 x 38 mm) |

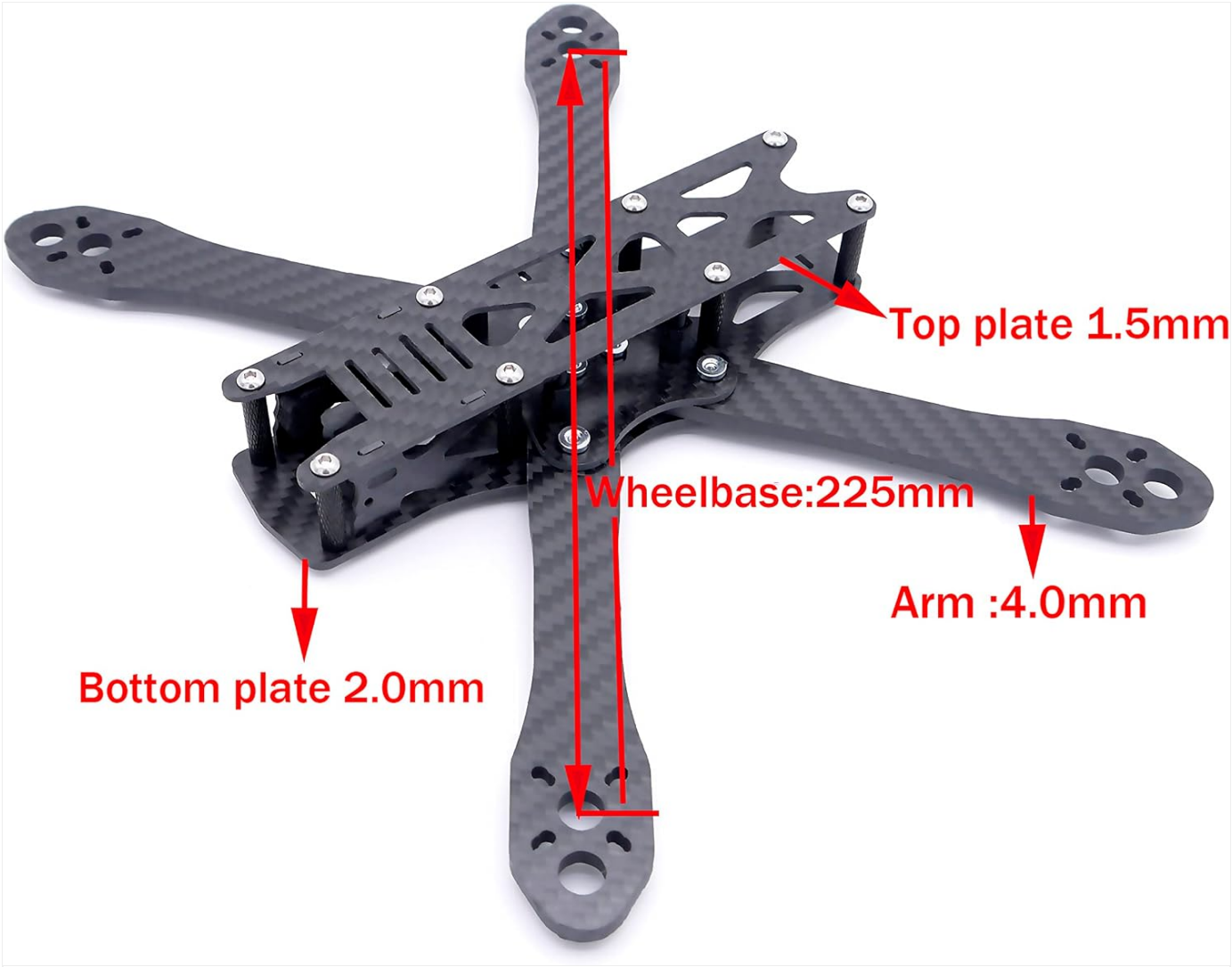



*Figure 6.1: Key dimensions of the FPVDrone 225mm frame.*




*Figure 6.2: Weight measurement of the FPVDrone 225mm frame.*

## 7. Warranty and Support

Specific warranty details for the FPVDrone 225mm FPV Racing Drone Frame are not provided within this manual. For information regarding warranty coverage, returns, or technical support, please contact FPVDrone directly through their official channels or the retailer from whom the product was purchased.

When contacting support, please have your product model number (225mm FPV Racing Drone Frame) and purchase details readily available.

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