KBBYT ZD680 PIXHAWK2 4.8 M9N

KBBYT ZD680 PIXHAWK2 4.8 M9N Hexacopter Frame Kit User Manual

Model: ZD680 PIXHAWK2 4.8 M9N

1. Introduction

This manual provides essential instructions for the assembly, operation, and maintenance of your KBBYT ZD680 PIXHAWK2 4.8 M9N Hexacopter Frame Kit. Please read this manual thoroughly before beginning assembly or operation to ensure safe and correct usage. This kit is designed for multi-rotor drone enthusiasts and professionals, featuring a full carbon fiber frame and foldable arms for portability.

2. Product Overview

The ZD680 PIXHAWK2 4.8 M9N Hexacopter Frame Kit is a high-performance platform for building custom multi-rotor drones. It features a robust full carbon fiber construction, ensuring lightweight durability and strength, designed for a 6-rotor configuration. The foldable arm design facilitates easy transportation and quick setup, making it suitable for various field operations. This kit is compatible with PIXHAWK2.4.8 flight controllers and M9N GPS modules, offering advanced flight capabilities.

Image 1: Overview of the ZD680 Hexacopter Frame Kit and included components.

3. Components List

The ZD680 Hexacopter Frame Kit is available in several package options, each including a specific set of components. Please verify your package contents against the list below.

3.1. Simple Package

- ZD680 full carbon fiber frame
- 4x BLHeli 40A brushless ESCs
- 2 pairs 3K carbon fiber propellers (1255)
- 4x 3508 700KV motors
- Pixhawk 2.4.8 (white/black shell)
- 4GB TF card
- Button, buzzer
- M9N GPS module with holder
- Power module

- Shock absorber

3.2. Standard Package

Includes all items from the Simple Package, plus:

- PPM encoder
- I2C expansion board
- 3 wiring harnesses (4Pin 1.25, 6Pin 1.25, 3Pin 2.54)

3.3. Advanced Package

Includes all items from the Standard Package, plus:

- RGB LED
- OLED screen

3.4. Radio Telemetry Options (Add-ons)

- 433/915MHz 100mW, 500mW, or 1000mW telemetry modules (added to Standard/Advanced packages)
- 433MHz V5 1000mW telemetry with OSD and PDB (added to Advanced Package)

3.5. FPV Package

Includes all items from the Advanced Package, plus:

- 433MHz 1000mW telemetry V5
- OSD, PDB
- VTX1000 video transmitter (25mW-600mW, 48 channels)
- 1080P FPV camera (800TVL CCD, 2.1mm lens)

4. Setup Guide

This section outlines the general steps for assembling your hexacopter frame kit. Specific detailed instructions for each component may be found in their respective individual manuals or online resources.

1. **Frame Assembly:** Unfold the carbon fiber arms and secure them according to the frame design. Ensure all screws are tightened appropriately.
2. **Motor Installation:** Mount the 3508 700KV motors onto the designated positions on the hexacopter arms.
3. **ESC Connection:** Connect the BLHeli 40A brushless ESCs to the motors and the power distribution board (PDB) or flight controller, following the wiring diagram for your specific setup.
4. **Flight Controller Mounting:** Secure the Pixhawk 2.4.8 flight controller to the center of the frame, utilizing the provided shock absorber to minimize vibrations.
5. **GPS Module Installation:** Mount the M9N GPS module on its holder, ensuring it has a clear view of the sky. Connect it to the flight controller.
6. **Propeller Attachment:** Attach the 3K carbon fiber propellers (1255) to the motors, ensuring correct rotation direction for each motor. *Always remove propellers during initial setup and testing for safety.*
7. **Wiring and Connections:** Connect all remaining components such as the power module, buzzer, LED, OLED screen, and telemetry modules to the flight controller as per the Pixhawk wiring diagrams.
8. **Initial Configuration:** Connect the flight controller to a computer and use the appropriate ground station software (e.g., Mission Planner, QGroundControl) to perform initial setup, calibration, and firmware flashing.

5. Operating Instructions

Before operating your hexacopter, ensure all pre-flight checks are completed. Familiarize yourself with the flight controller's operation modes and safety features.

- **Pre-Flight Checks:**
  - Verify battery charge level.
  - Inspect propellers for damage and ensure they are securely attached.
  - Confirm all connections are secure.
  - Check GPS lock and compass calibration.
  - Perform a radio control range check.
- **Arming and Disarming:** Follow the specific arming and disarming procedures for the ArduPilot or PX4 firmware running on your Pixhawk controller.
- **Flight Modes:** Understand and practice using various flight modes (e.g., Stabilize, AltHold, Loiter, Position Hold, Return-to-Launch) in a safe, open environment.
- **Emergency Procedures:** Know how to initiate emergency disarm and return-to-launch functions.

Safety Warning: Always operate your drone in compliance with local regulations and maintain a safe distance from people and property.

6. Maintenance

Regular maintenance is crucial for the longevity and safe operation of your hexacopter.

- **Post-Flight Inspection:** After each flight, inspect the frame, motors, ESCs, and propellers for any signs of damage, cracks, or loose connections.
- **Cleaning:** Keep the frame and electronic components clean and free from dust, dirt, and moisture.
- **Firmware Updates:** Periodically check for and apply firmware updates for your Pixhawk flight controller and other components to ensure optimal performance and access to new features.
- **Battery Care:** Follow manufacturer guidelines for charging, discharging, and storing drone batteries.
- **Propeller Replacement:** Replace any damaged or unbalanced propellers immediately.

7. Troubleshooting

This section addresses common issues you might encounter. For more detailed troubleshooting, refer to the Pixhawk documentation or online community forums.

Problem	Possible Cause	Solution
Drone does not arm	GPS not locked, compass error, safety switch not pressed, pre-arm checks failed.	Ensure clear sky for GPS, recalibrate compass, press safety switch, check ground station for specific pre-arm warnings.
Unstable flight / Drifting	Improper calibration (accelerometer/gyro), unbalanced propellers, motor/ESC issue, vibrations.	Recalibrate accelerometers and gyroscopes. Check propellers for damage/balance. Inspect motors/ESCs. Ensure flight controller is vibration-isolated.

Problem	Possible Cause	Solution
No telemetry data	Telemetry module not connected, incorrect baud rate, faulty module.	Verify connections, check baud rate settings in flight controller and ground station software. Test with another module if available.

8. Specifications

Key specifications for the KBBYT ZD680 PIXHAWK2 4.8 M9N Hexacopter Frame Kit and its components:

- **Brand:** KBBYT
- **Model Name:** KBBYT362
- **Item Model Number:** KBBYT725
- **Manufacturer Part Number:** KBBYT564
- **Frame Material:** Full Carbon Fiber
- **Frame Design:** Hexacopter, Foldable Arms
- **Flight Controller Compatibility:** Pixhawk 2.4.8 (32-bit ARM Cortex M4 processor)
- **GPS Module:** M9N (Supports GPS, GLONASS, Galileo, BeiDou)
- **Motors:** 3508 700KV
- **ESCs:** BLHeli 40A brushless
- **Propellers:** 3K Carbon Fiber (1255)
- **Connectivity Technology:** Bluetooth (for some variants/modules)
- **Item Weight:** Approximately 0.071 ounces (for a specific component, overall kit weight will vary)
- **Product Dimensions:** Approximately 0.39"L x 0.39"W x 0.39"H (for a specific component, overall frame dimensions will be larger)

Note: Specifications may vary slightly depending on the specific package and optional components selected.

9. Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact KBBYT customer service through the retailer where the product was acquired. Keep your proof of purchase for warranty claims.
This product is an aftermarket replacement part. Any brand names or model designations mentioned are used solely for the purpose of demonstrating compatibility.