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## SpeedyBee F405

# SpeedyBee F405 Wing APP Flight Controller User Manual

## INTRODUCTION

This manual provides detailed instructions for the installation, configuration, and operation of your SpeedyBee F405 Wing APP Flight Controller. Please read this manual thoroughly before use to ensure proper functionality and safety.

## KEY FEATURES

- **Upgraded Sensor:** Features an advanced IMU for reduced noise and improved temperature stability, ensuring accurate navigation.
- **Dual Firmware Support:** Compatible with both INAV and Ardupilot firmware for versatile flight experiences.
- **Wireless Configuration:** Streamlined setup via SpeedyBee and QGroundcontrol apps using Bluetooth connectivity.
- **11 PWM Outputs:** Supports a wide range of fixed-wing planes and various flight modes, including Tiltrotor and Quadplane.
- **Battery Monitoring:** Integrated 4-level LED indicator and precision current sensor for accurate battery status.
- **Easy Firmware Flashing:** BOOT button allows for simple firmware updates and mode switching.
- **LED Strip Support:** Four LED strip plugs for enhanced visibility and customization.
- **Telemetry Integration:** Designed for seamless integration with ELRS/TBS receivers for real-time data monitoring.

## SETUP GUIDE

### 1. Unboxing and Inspection

Before proceeding, carefully unbox the SpeedyBee F405 Wing APP Flight Controller and inspect all components for any signs of damage. Ensure all included accessories are present.



*Image: The SpeedyBee F405 Wing Flight Controller main board, showing various ports and components. This image helps identify the physical layout of the controller.*

## 2. Wiring Diagram

Connect your flight controller to the ESCs, motors, receiver, GPS, and other peripherals according to the wiring diagram. Refer to the specific documentation for your aircraft frame and components for detailed connections.



*Image: A conceptual wiring diagram illustrating connections for the SpeedyBee F405 Wing Flight Controller to various components like ESCs, motors, and receiver. This diagram is crucial for correct installation.*

## 3. Firmware Flashing (Optional)

The controller comes pre-flashed with a default firmware. If you need to update or change the firmware (INAV or Ardupilot), connect the flight controller to your computer via USB. Press and hold the BOOT button while connecting to enter DFU mode. Use the appropriate configurator software (e.g., INAV Configurator, Mission Planner) to flash the desired firmware.

## 4. Wireless Configuration via App

Download the SpeedyBee App or QGroundcontrol App on your mobile device. Power on the flight controller. Open the app and connect to the flight controller via Bluetooth. Follow the on-screen instructions within the app to configure flight modes, calibrate sensors, and set up parameters.



*Image: A screenshot of the SpeedyBee App interface, showing options for flight controller configuration. This visual aid demonstrates the user-friendly app setup process.*

# OPERATING INSTRUCTIONS

## 1. Pre-Flight Checks

Before each flight, ensure all connections are secure, the battery is fully charged, and all control surfaces move correctly in response to your transmitter inputs. Verify GPS lock if using GPS-dependent flight modes.

## 2. Arming and Disarming

Refer to your chosen firmware (INAV or Ardupilot) documentation for specific arming and disarming procedures. Typically, this involves a stick command on your transmitter. Ensure propellers are clear before arming.

## 3. Flight Modes

The SpeedyBee F405 Wing supports various flight modes. Configure these modes in your app or configurator software and assign them to switches on your transmitter. Common modes include Manual, Acro, Stabilize, RTH (Return To Home), and Waypoint navigation.

## 4. Telemetry Monitoring

If using a compatible ELRS/TBS receiver, telemetry data (e.g., battery voltage, RSSI, GPS coordinates) can be displayed on your OpenTX/EdgeTX compatible radio. Monitor this data during flight for critical information.

# MAINTENANCE

## 1. Regular Inspection

Periodically inspect the flight controller for any physical damage, loose connections, or signs of corrosion. Ensure all mounting screws are secure.

## 2. Cleaning

Keep the flight controller clean and free from dust, dirt, and moisture. Use a soft, dry brush or compressed air to gently clean the board. Avoid using liquids.

## 3. Firmware Updates

Check the SpeedyBee website or the respective firmware project pages (INAV, Ardupilot) regularly for new firmware releases. Updating firmware can provide new features, performance improvements, and bug fixes.

## TROUBLESHOOTING

### No Power to Flight Controller

- Check battery connection and voltage.
- Verify power wiring from ESC/PDB to the flight controller.
- Inspect for any short circuits.

### No Connection to App/Configurator

- Ensure the flight controller is powered on.
- Verify Bluetooth is enabled on your mobile device.
- For USB connection, ensure correct drivers are installed on your computer.
- Try a different USB cable or port.

### Incorrect Sensor Readings

- Recalibrate accelerometers and magnetometers in the configurator.
- Ensure the flight controller is mounted correctly and securely, away from magnetic interference.
- Check for physical damage to the IMU.

### Unstable Flight

- Review PID tuning parameters.
- Check motor and propeller balance.
- Ensure correct orientation of the flight controller.
- Verify all control surfaces are moving freely and correctly.

## SPECIFICATIONS

Feature	Detail
Brand	SpeedyBee
Model Name	F405
Item Weight	4.2 ounces
Manufacturer Recommended Age	10 years and up
Compatible Devices	Windows (for configurator software)
Connectivity Technology	Bluetooth, USB

Special Feature	Wireless Configuration
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## WARRANTY INFORMATION

This product is covered by a limited manufacturer's warranty. Please refer to the official SpeedyBee website or your point of purchase for detailed warranty terms and conditions. The warranty typically covers defects in materials and workmanship under normal use.

## SUPPORT AND CONTACT INFORMATION

For technical support, troubleshooting assistance, or further inquiries, please visit the official SpeedyBee website at [www.speedybee.com](http://www.speedybee.com). You may find FAQs, forums, and contact information for customer service there.

## OFFICIAL PRODUCT VIDEOS

No official seller videos were found in the provided product data. Please check the manufacturer's website for any available video tutorials or demonstrations.