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DAKEFPV F722

DAKEFPV F722 Flight Controller and 60A 4in1 ESC Stack Instruction Manual

1. Introduction

This instruction manual provides essential information for the proper installation, configuration, and operation of your DAKEFPC F722 Flight Controller and BLHELI_S 60A 4in1 Electronic Speed Controller (ESC) stack. This integrated unit is designed for FPV (First Person View) drones, offering high performance and reliability. Please read this manual thoroughly before use to ensure safe and optimal performance.

2. Product Overview

The DAKEFPC F722 Flight Controller and 60A 4in1 ESC stack is a compact and robust solution for FPV drone builds. It combines a powerful F722 processor with an ICM42688P gyro for precise flight control and a BLHELI_S 60A 4in1 ESC for efficient motor management. This integrated design simplifies wiring and enhances overall performance.



Image 2.1: Top view of the DAKEFPC F722 Flight Controller and 60A 4in1 ESC stack, showing the integrated design.

3. Key Features

- **High-Performance Flight Control:** Equipped with an F722 processor and ICM42688P gyro for stable and responsive flight.
- **Efficient Power Management:** Integrated BLHELI_S 60A 4in1 ESC provides efficient motor control, supporting 3-8S voltage input.
- **Compact and Robust Design:** 30.5x30.5mm metal construction ensures durability and effective heat dissipation.
- **Easy Installation:** Standard 30.5mm mounting holes for broad compatibility with FPV drone frames.
- **Versatile Application:** Suitable for FPV racing, freestyle flying, and DIY drone projects.

4. Package Contents

Verify that all components are present in your package:

- DAKEFPV F722 Flight Controller
- BLHELI_S 60A 4in1 ESC
- Connection Cables (various types for FC to ESC, receiver, etc.)
- Capacitor
- Mounting Hardware (screws, nuts, standoffs)
- Rubber Dampers



Image 4.1: All components included in the DAKEFPC F722 Flight Controller and 60A 4in1 ESC stack package.

5. Setup

5.1. Mounting

The F722 Flight Controller and 60A 4in1 ESC stack features a standard 30.5x30.5mm mounting pattern. Use the provided mounting hardware and rubber dampers to secure the stack to your drone frame. Ensure the flight controller is oriented correctly (usually with the arrow pointing forward) as per your flight control software's default settings or adjust in software if needed.

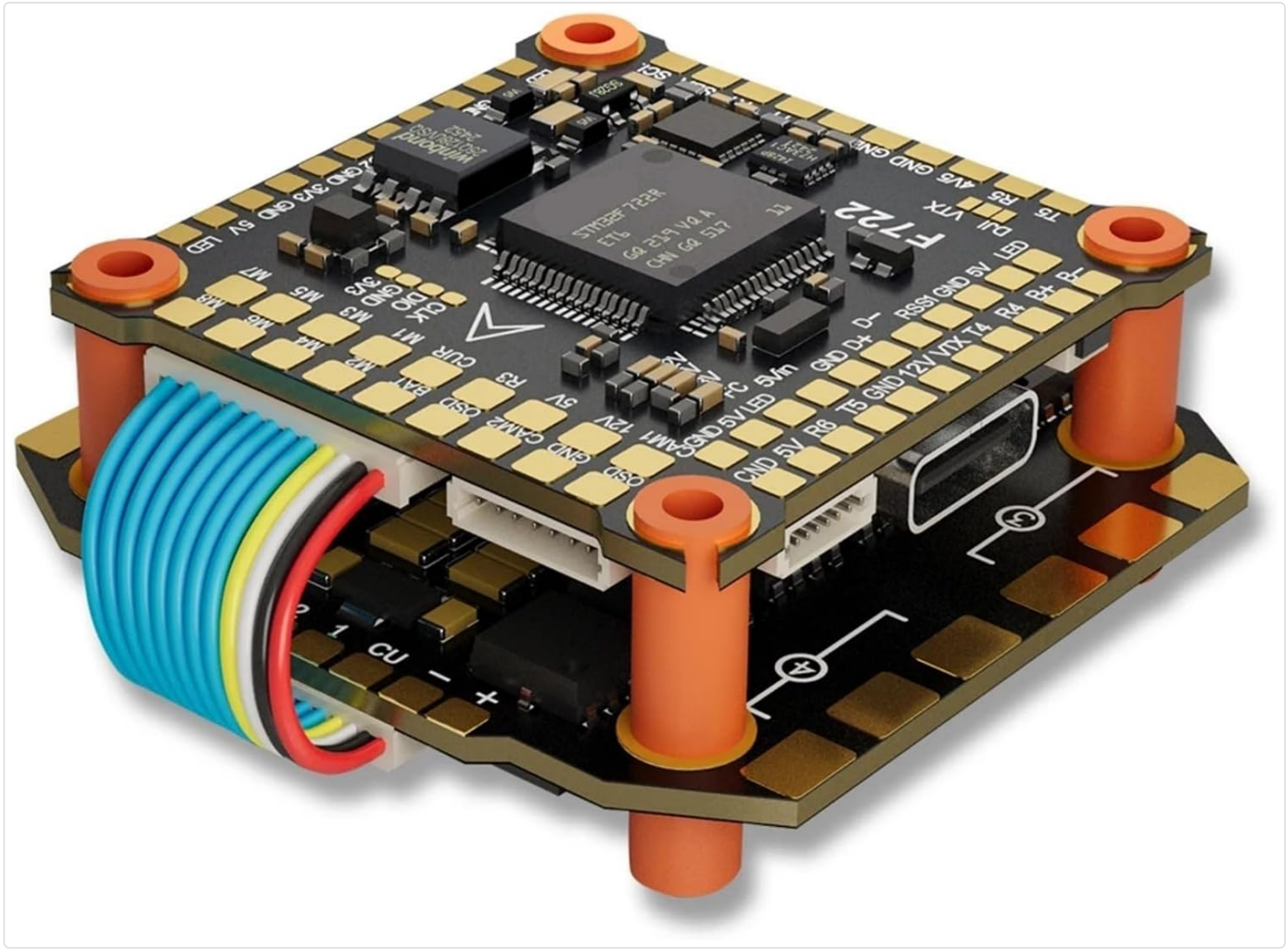


Image 5.1: Detailed view of the DAKEFPC F722 Flight Controller, highlighting various connection pads and orientation.

5.2. Wiring

Connect the flight controller to the 4in1 ESC using the provided ribbon cable. Ensure the pins align correctly. Connect other peripherals such as your receiver, VTX (Video Transmitter), camera, and GPS (if applicable) to the designated pads on the flight controller. Refer to the pinout diagram for your specific F722 board for accurate connections. The main battery lead from your drone will connect directly to the 4in1 ESC.

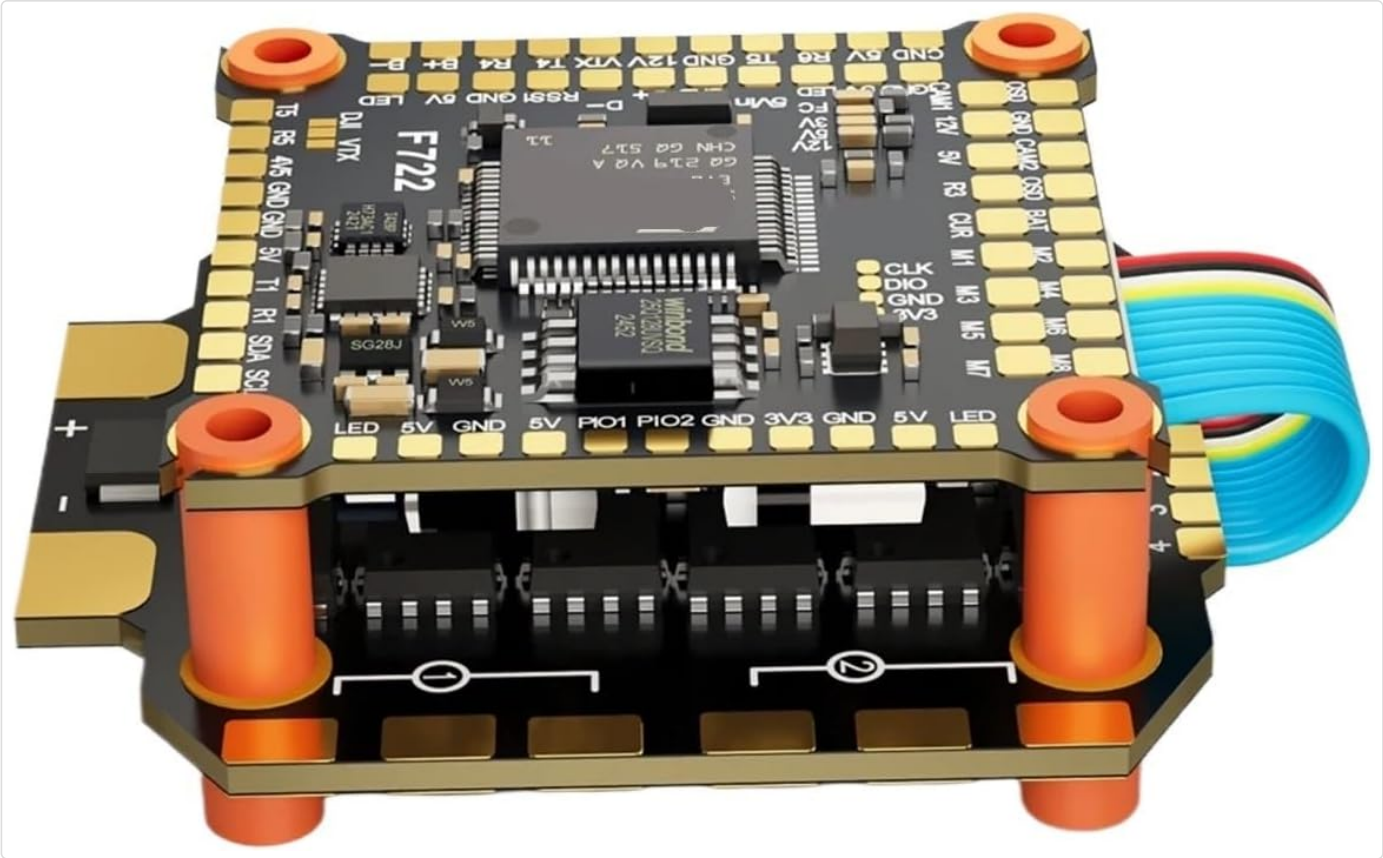


Image 5.2: Bottom view of the DAKEFPC F722 Flight Controller, illustrating the connection interface to the ESC.

5.3. Software Configuration

The F722 Flight Controller typically runs firmware like Betaflight or INAV. Connect the flight controller to your computer via the USB-C port. Open the appropriate configurator software (e.g., Betaflight Configurator). Follow the software's instructions to:

- Flash the latest stable firmware.
- Calibrate the accelerometer and gyroscope.
- Configure receiver protocols (e.g., SBUS, CRSF, ELRS).
- Set up motor directions and ESC protocols (e.g., DShot600).
- Configure OSD (On-Screen Display) and VTX settings.
- Adjust PID tuning for optimal flight performance.

Ensure all settings are saved and verified before attempting flight.

6. Operating Instructions

Once the flight controller and ESC stack are properly installed and configured, follow these general steps for operation:

1. **Pre-Flight Check:** Inspect all wiring, propeller tightness, and battery connection. Ensure no loose components.
2. **Power On:** Connect the main battery to the drone. The flight controller will initialize, indicated by LED lights.
3. **Arming:** Arm the drone using your radio transmitter's designated switch. Ensure you are in a safe, open area away from people and obstacles.
4. **Flight:** Control the drone using your radio transmitter. Start with gentle movements to verify control response.
5. **Disarming:** Disarm the drone using your radio transmitter's switch after landing.
6. **Power Off:** Disconnect the main battery from the drone.

Always operate your FPV drone responsibly and in accordance with local regulations.

7. Maintenance

Regular maintenance helps ensure the longevity and reliability of your flight controller and ESC stack:

- **Visual Inspection:** Periodically check for any physical damage, loose connections, or signs of overheating (discoloration on components).
- **Cleaning:** Gently clean the boards with a soft brush or compressed air to remove dust, dirt, or debris. Avoid using liquids.
- **Firmware Updates:** Keep the flight controller firmware updated to the latest stable version to benefit from bug fixes and new features.
- **Component Check:** Ensure all mounting screws are secure and rubber dampers are intact.

8. Troubleshooting

If you encounter issues, consider the following common troubleshooting steps:

- **No Power:** Check battery connection, main power lead, and ensure no short circuits. Verify the voltage input is within the 3-8S range.
- **No Motor Spin:** Verify ESC calibration, motor direction in software, and proper motor wiring. Check for bent motor pins or damaged motor wires.
- **No Receiver Signal:** Ensure receiver is properly bound to your transmitter, correctly wired to the FC, and the correct protocol is selected in the flight control software.
- **Unstable Flight:** Re-check accelerometer calibration. Ensure propellers are balanced and undamaged. Review PID tuning settings. Check for vibrations affecting the gyro.
- **USB Connection Issues:** Try a different USB cable or port. Ensure necessary drivers are installed on your computer.

For more detailed troubleshooting, consult online FPV communities or the flight control software documentation.

9. Specifications

Feature	Specification
Flight Controller Processor	F722
Gyroscope	ICM42688P
ESC Type	BLHELI_S 4in1
Continuous Current	60A
Voltage Input	3-8S LiPo
Mounting Pattern	30.5x30.5mm
Dimensions	Approximately 0.39 x 0.39 x 0.39 inches (Stack)
Weight	Approximately 50 grams (1.76 ounces)

10. Warranty Information

Please refer to the manufacturer's official website or your point of purchase for detailed warranty terms and conditions. Keep your proof of purchase for any warranty claims.

11. Support

For technical assistance, troubleshooting beyond this manual, or product inquiries, please contact the seller or refer to the DAKEFPC official support channels. Online FPV communities and forums can also be valuable resources for setup and tuning advice.

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