GEPRC GEP-F722-45A

GEPRC GEP-F722-45A AIO Flight Controller User Manual

Model: GEP-F722-45A

1. INTRODUCTION

This manual provides detailed instructions for the installation, configuration, operation, and maintenance of the GEPRC GEP-F722-45A All-In-One (AIO) Flight Controller. This device integrates a flight controller and electronic speed controllers (ESCs) into a single board, designed for FPV drone applications.
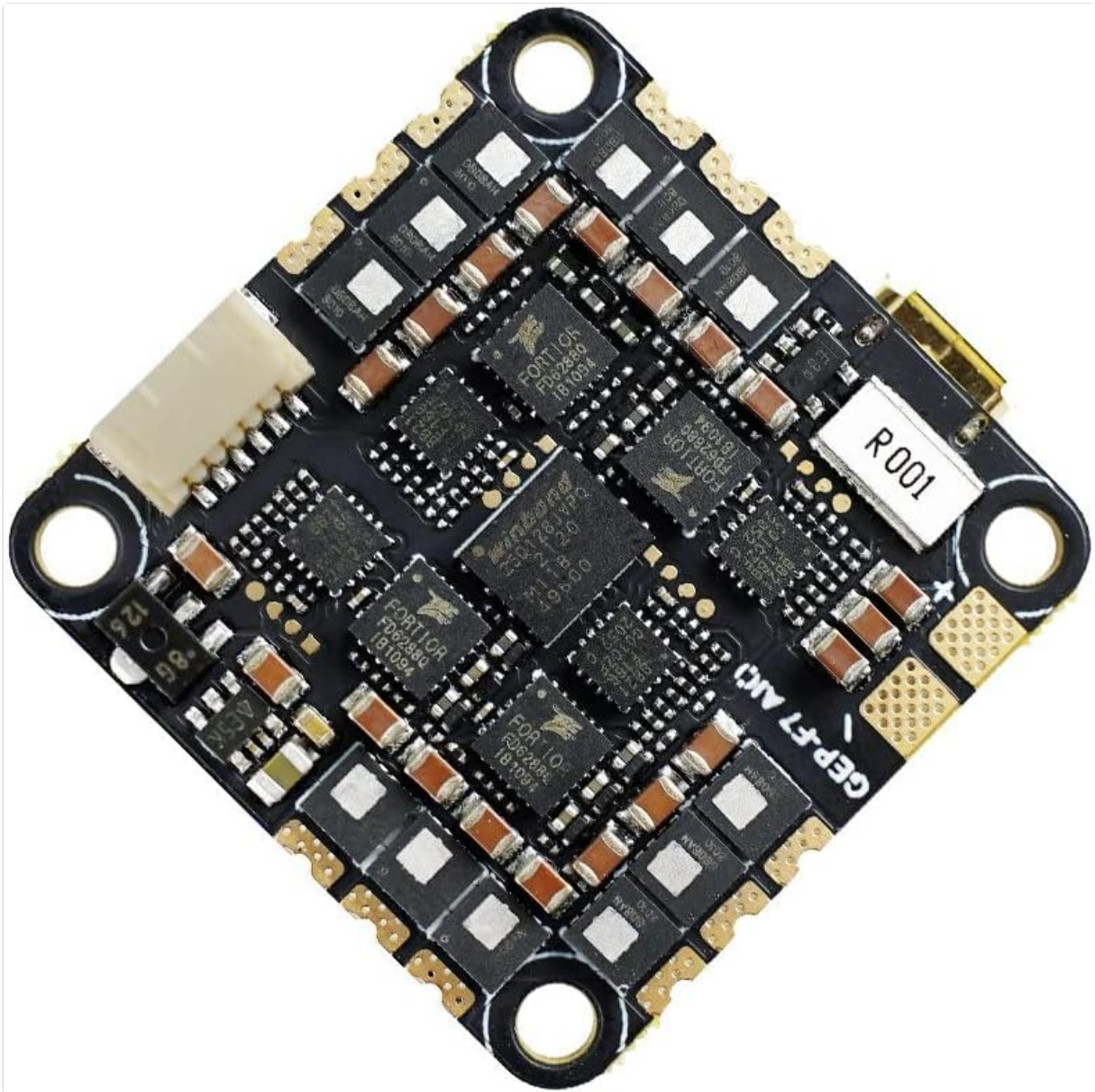
Figure 1: Top view of the GEPRC GEP-F722-45A AIO flight controller, showcasing the integrated electronic speed controllers (ESCs) and main components.

2. SPECIFICATIONS

The following table outlines the key technical specifications for the GEP-F722-45A AIO Flight Controller:

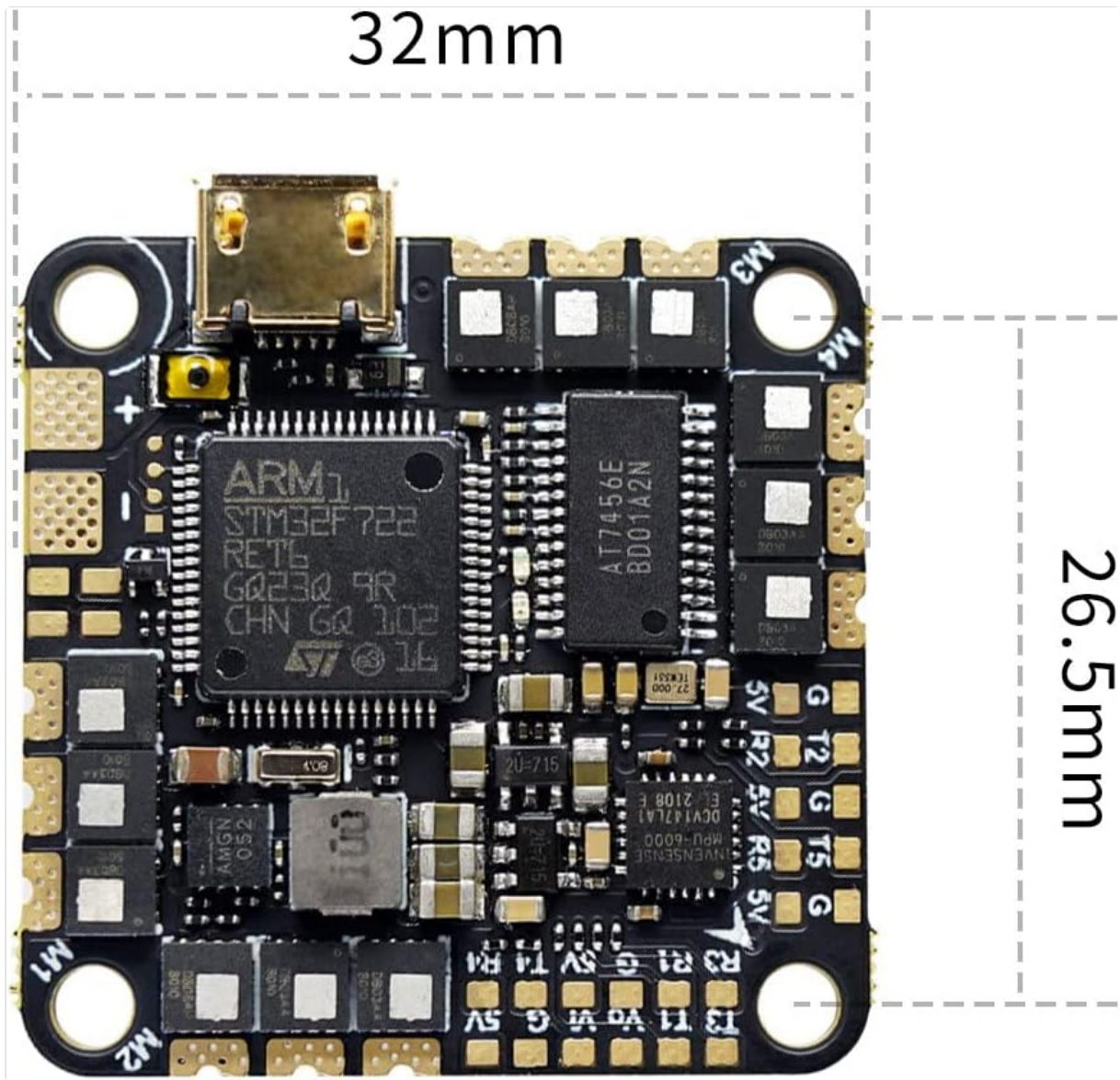| Feature	Specification
Brand	GEPRC
Model	GEP-F722-45A AIO
Flight Controller MCU	STM32F722
Integrated ESC Current	45A
Connectivity Technology	USB
Dimensions	32mm x 26.5mm
Weight	8.8 grams

Figure 2: Diagram illustrating the dimensions of the GEPRC GEP-F722-45A AIO flight controller, measuring 32mm by 26.5mm.
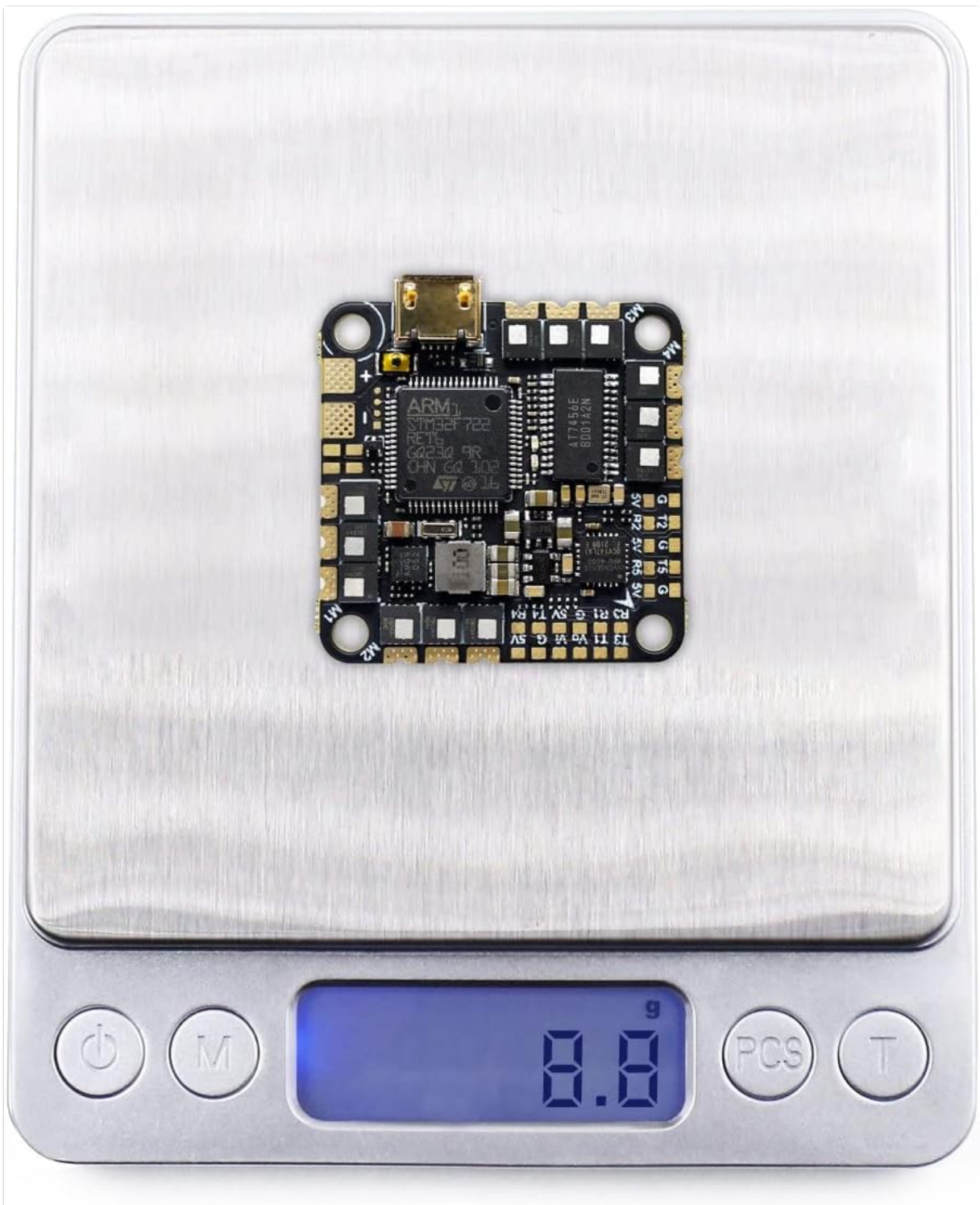
Figure 3: The GEPRC GEP-F722-45A AIO flight controller on a digital scale, displaying a weight of 8.8 grams.

3. SETUP AND INSTALLATION

Proper installation is crucial for the performance and safety of your drone. Always refer to a detailed wiring diagram for your specific drone frame and components.
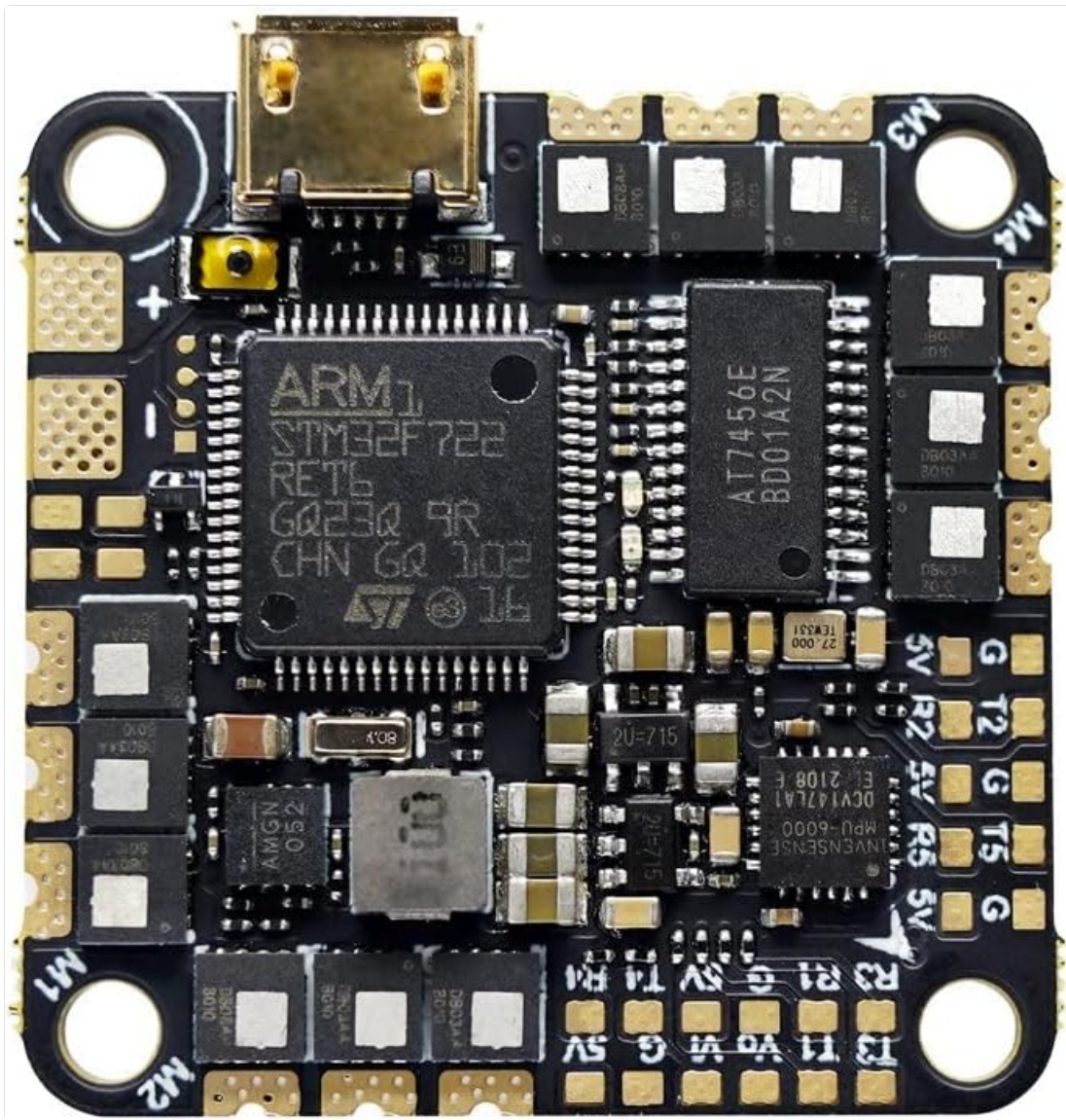
3.1 Component Overview

Figure 4: Bottom view of the GEPRC GEP-F722-45A AIO flight controller, highlighting the STM32F722 microcontroller and USB port for configuration.
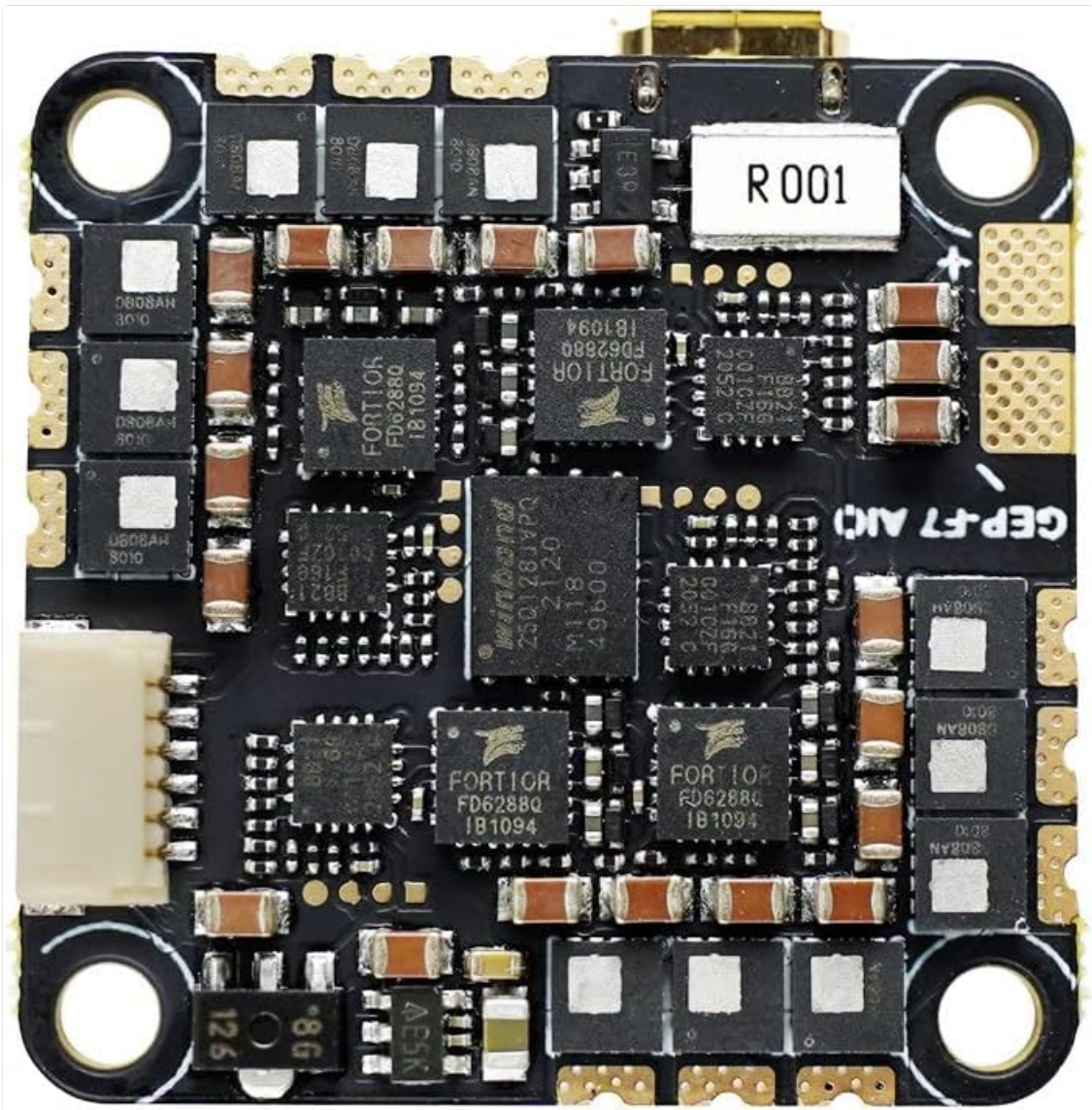
Figure 5: Close-up top view of the GEPRC GEP-F722-45A AIO, showing the individual ESC MOSFETs and capacitors, indicating the power delivery section.
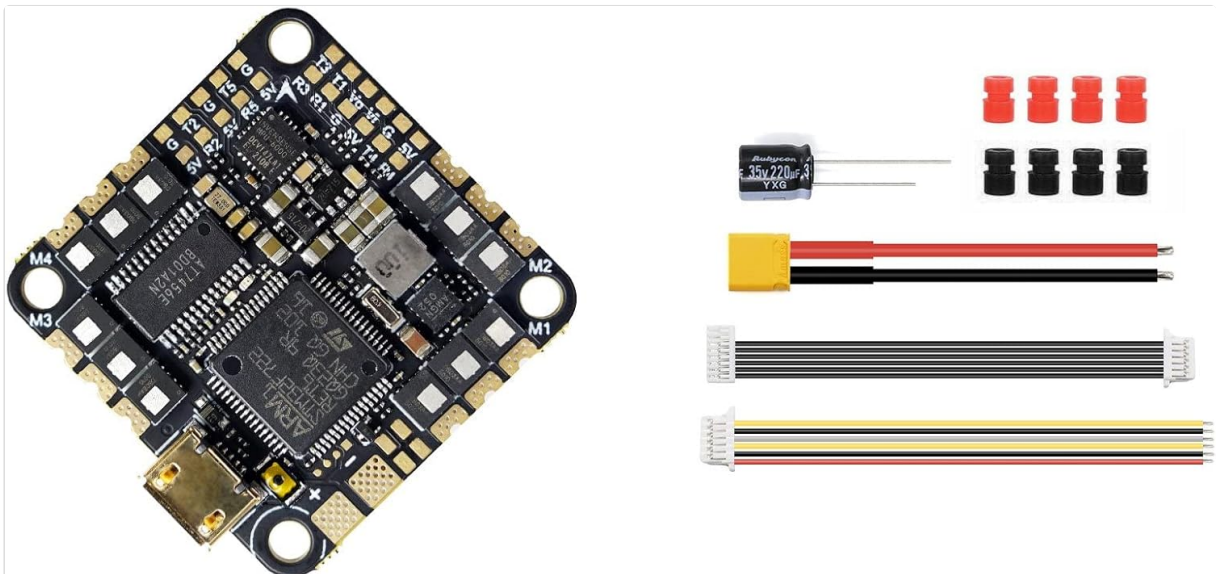

Figure 6: The GEPRC GEP-F722-45A AIO flight controller alongside included accessories such as a capacitor, power cable, and various connection wires, essential for installation.

3.2 Wiring

1. **Power Connection:** Connect the main battery lead (XT60/XT30) to the designated BAT+ and BAT-

pads on the AIO board. Ensure correct polarity.

2. **Motor Connections:** Solder motor wires to the M1, M2, M3, M4 pads. Verify motor order and direction according to your flight controller software configuration.

3. **Receiver Connection:** Connect your receiver (e.g., SBUS, CRSF, ELRS) to the appropriate UART pads (e.g., RX1, TX1).

4. **Video Transmitter (VTX) & Camera:** Connect your VTX and FPV camera to the designated video in/out and power pads.

5. **GPS/Other Peripherals:** If using, connect GPS modules or other peripherals to available UARTs or I2C pads as required.

3.3 Firmware Flashing and Configuration

1. **Install Drivers:** Ensure necessary USB drivers (e.g., STM32 Virtual COM Port Driver, Zadig) are installed on your computer.

2. **Connect to PC:** Connect the AIO board to your computer using a USB-C cable.

3. **Open Configurator:** Launch the Betaflight Configurator (or INAV Configurator, depending on your firmware choice).

4. **Flash Firmware:** Navigate to the 'Firmware Flasher' tab. Select the correct target (e.g., GEP_F722_AIO) and the latest stable firmware version. Click 'Load Firmware [Online]' and then 'Flash Firmware'.

5. **Initial Configuration:** After flashing, connect to the flight controller. Go through the setup wizard or manually configure settings such as accelerometer calibration, receiver protocol, motor output protocol (e.g., DShot600), OSD, and modes.

4. OPERATING INSTRUCTIONS

Once the flight controller is installed and configured, follow these general operating guidelines:

1. **Pre-Flight Check:** Before each flight, visually inspect all connections, propeller tightness, and battery charge.

2. **Arming Procedure:** Ensure your drone is on a stable, level surface. Arm the motors using the designated switch on your radio transmitter. The flight controller's status LED will typically change to indicate armed status.

3. **Disarming Procedure:** Disarm the motors immediately after landing or in an emergency by using the designated switch.

4. **Flight Modes:** Utilize various flight modes (e.g., Angle, Acro, Horizon) configured in your flight controller software to suit your flying style and skill level.

5. **Battery Management:** Monitor battery voltage during flight. Land safely before the battery voltage drops below critical levels to prevent damage to the battery and drone.

5. MAINTENANCE

Regular maintenance helps ensure the longevity and reliability of your GEP-F722-45A AIO.

- **Cleaning:** Periodically clean the board to remove dust, dirt, or debris. Use a soft brush or compressed air. Avoid using liquids directly on the electronics.

- **Firmware Updates:** Check for and install new firmware versions for your flight controller and ESCs regularly. Updates often include performance improvements, bug fixes, and new features.

- **Connection Inspection:** Routinely inspect all solder joints and wire connections for signs of wear, corrosion, or looseness. Re-solder or replace as necessary.
- **Physical Damage Check:** After any hard landing or crash, inspect the board for cracks, bent pins, or damaged components.

6. TROUBLESHOOTING

This section addresses common issues you might encounter:

6.1 No Power to Board

- **Check Battery Connection:** Ensure the main battery is properly connected and charged.
- **Inspect Solder Joints:** Verify that the main power leads (BAT+ and BAT-) are securely soldered to the board.
- **Check for Shorts:** Look for any accidental solder bridges or conductive debris that could cause a short circuit.

6.2 Motors Not Spinning

- **Arming State:** Ensure the flight controller is armed.
- **Motor Protocol:** Verify that the correct motor output protocol (e.g., DShot600) is selected in the Betaflight/INAV configurator.
- **ESC Calibration:** If using analog ESC protocols, ensure ESCs are calibrated. For DShot, calibration is not required.
- **Motor/ESC Health:** Test individual motors and ESCs using the motor tab in the configurator.

6.3 No Connection to Configurator

- **USB Cable:** Try a different USB-C cable. Some cables are for charging only and do not support data transfer.
- **Drivers:** Reinstall or update the necessary USB drivers (STM32 Virtual COM Port Driver).
- **DFU Mode:** If the board is not recognized, try putting it into DFU (Device Firmware Upgrade) mode by holding the BOOT button (if present) while plugging in USB, then attempt to flash firmware.

7. WARRANTY AND SUPPORT

Specific warranty information for the GEPRC GEP-F722-45A AIO Flight Controller is not provided in the product details. For warranty claims, technical support, or further assistance, please contact the retailer or GEPRC directly through their official support channels. Always retain your proof of purchase.

Related Documents - GEP-F722-45A
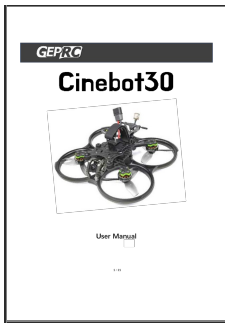
[GEPRC Cinebot30 User Manual: Setup, Binding, and Flight Guide](#)
Comprehensive user manual for the GEPRC Cinebot30 HD Quadcopter, covering setup, binding procedures for DJI, FrSky, TBS, and ELRS systems, Betaflight installation, transmitter configuration, pre-flight checks, and specifications.

[GEP-F722-35A AIO Flight Controller Manual](#)
User manual for the GEPRC GEP-F722-35A AIO flight controller, detailing specifications, wiring diagrams for various FPV systems including DJI, analog VTX, cameras, receivers, and buzzer/LED boards.
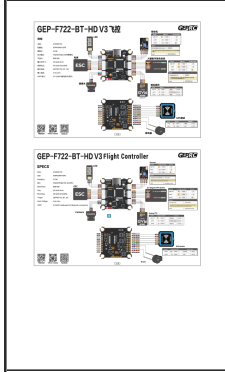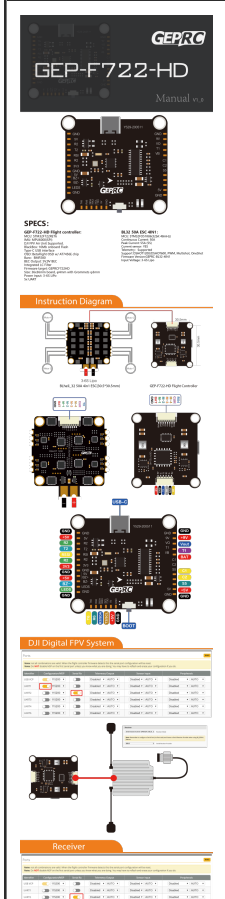

[GEPRC GEP-F722-BT-HD V3 Flight Controller: Technical Specifications and Wiring Guide](#)
Comprehensive technical specifications, wiring diagrams, and configuration details for the GEPRC GEP-F722-BT-HD V3 FPV drone flight controller, detailing connections for ESC, Camera, Receiver, DJI FPV systems, Analog FPV, GPS, and Buzzer.

[GEPRC MOZ7 Analog Long Range FPV Drone - Product Overview](#)
Explore the GEPRC MOZ7 Analog Long Range FPV drone. This overview details its advanced features, robust specifications, and included components, highlighting its suitability for extended aerial photography and FPV experiences.
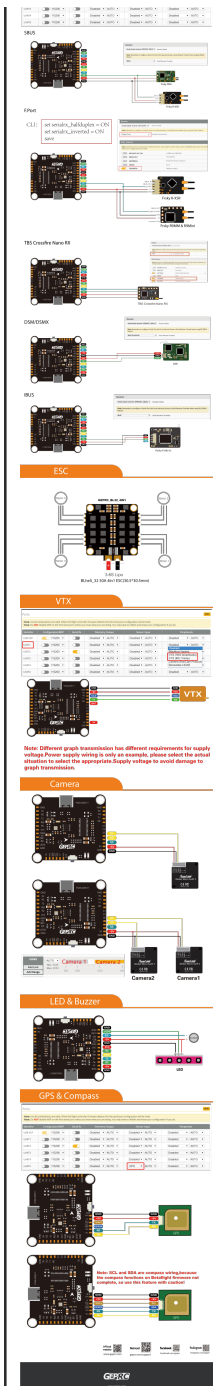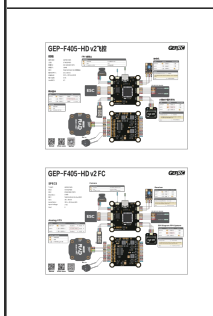
[GEPRC GEP-F722-HD Flight Controller and ESC Manual](#)

This manual provides detailed specifications, connection diagrams, and configuration notes for the GEPRC GEP-F722-HD Flight Controller and BL32 50A 4in1 ESC.

[GEPRC GEP-F405-HD v2 Flight Controller: Specs, Wiring, and Features](#)

Detailed technical specifications, connection diagrams, and feature overview for the GEPRC GEP-F405-HD v2 flight controller. Learn about its MCU, IMU, BEC, and integration with FPV cameras, ESCs, receivers, and DJI digital systems.