VortexLumen TAKER F722 BLS 65A V2

VortexLumen TAKER F722 BLS 65A V2 Flight Stack

Instruction Manual

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of your VortexLumen TAKER F722 BLS 65A V2 Flight Stack. This integrated flight controller and electronic speed controller (ESC) unit is designed for high-performance racing quadcopters, offering precise motor control and stable flight characteristics. Please read this manual thoroughly before use to ensure optimal performance and safety.

2. Product Overview

The TAKER F722 BLS 65A V2 Flight Stack combines a powerful F7 flight controller with a 65A BLHeli_S ESC, providing a compact and efficient solution for drone builds. Key features include:

- Integrated 65A BLHeli_S ESC for efficient motor control and smooth throttle response.
- F7 flight controller with advanced stabilization for agile flight in freestyle and race scenarios.
- Plug-and-play setup simplifies installation on 2-inch to 4-inch drone frames.
- Compatible with a wide range of 3S to 6S LiPo batteries, supporting diverse power configurations.
- Supports PWM, DSHOT, and other protocols for broad transmitter and receiver compatibility.

Product Components

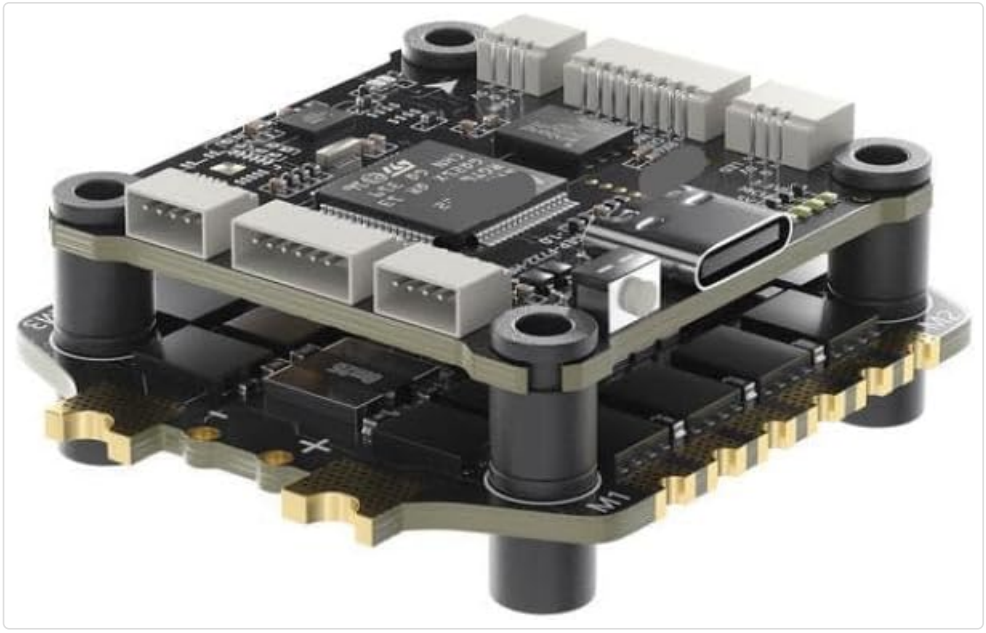

Figure 2.1: Angled view of the assembled flight stack, showing the flight controller and ESC boards.

This image displays an angled top-down view of the VortexLumen TAKER F722 BLS 65A V2 Flight Stack. The flight controller board is visible on top, featuring a USB-C port and various connectors. The ESC board is stacked below it, connected by standoffs.

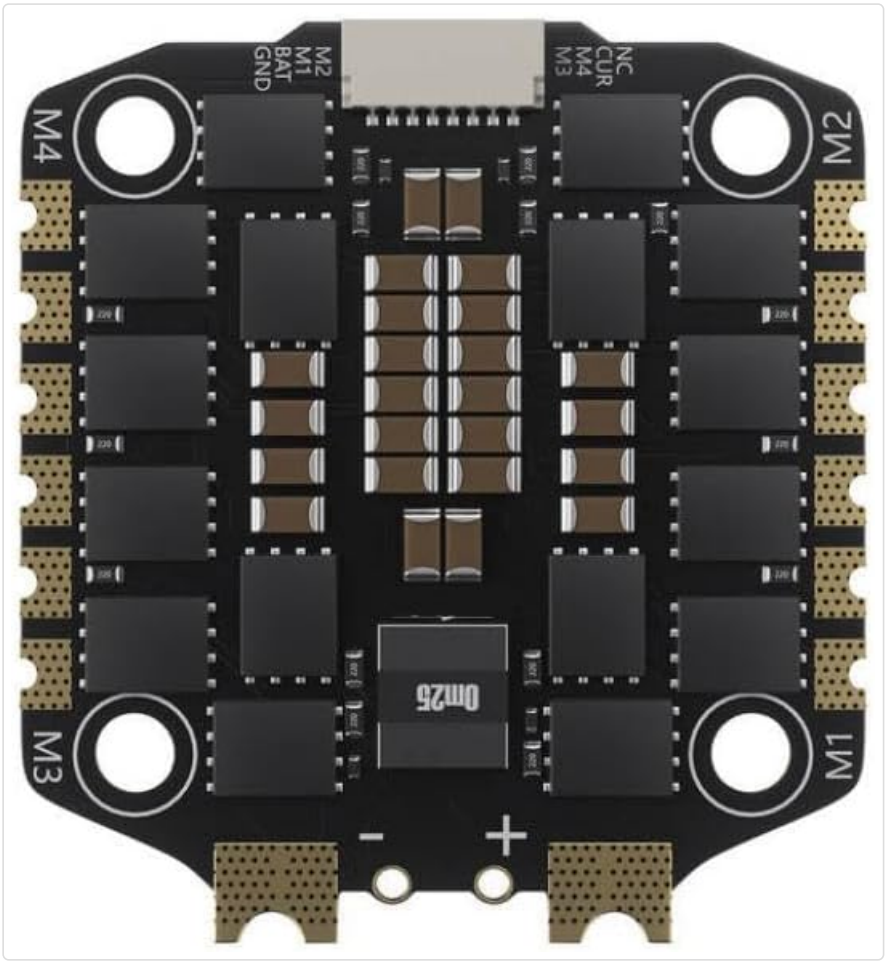

Figure 2.2: Top-down view of the Flight Controller (FC) board.

This image shows a detailed top-down view of the Flight Controller (FC) board. Key components such as the main processor, various input/output connectors, and the USB-C port are clearly visible, along with mounting holes at the corners.

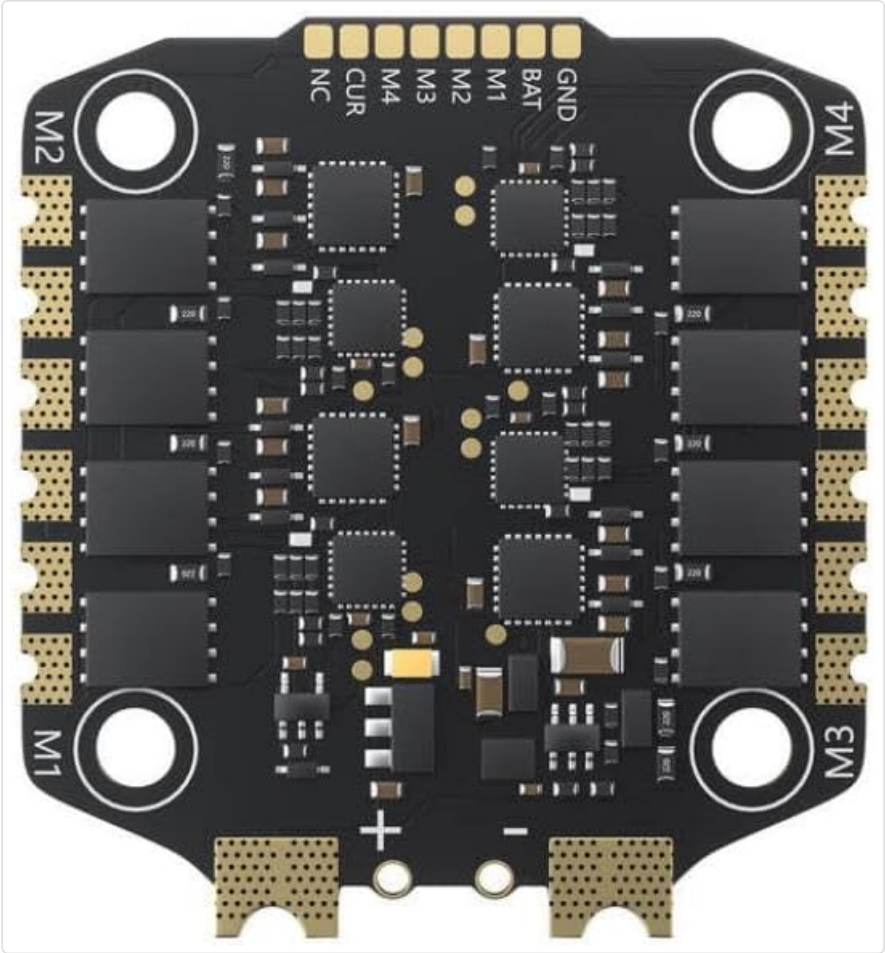

Figure 2.3: Top-down view of the Electronic Speed Controller (ESC) board.

This image presents a top-down view of the Electronic Speed Controller (ESC) board. It highlights the motor pads (M1, M2, M3, M4) for connecting drone motors, as well as the main battery input (BAT) and ground (GND) connections. The layout of the MOSFETs and other power components is also visible.

Figure 2.4: Side view of the assembled flight stack.

This image provides a side profile of the assembled flight stack, illustrating the layered construction of the flight controller and ESC boards separated by standoffs. This view helps in understanding the compact form factor and vertical integration of the components.

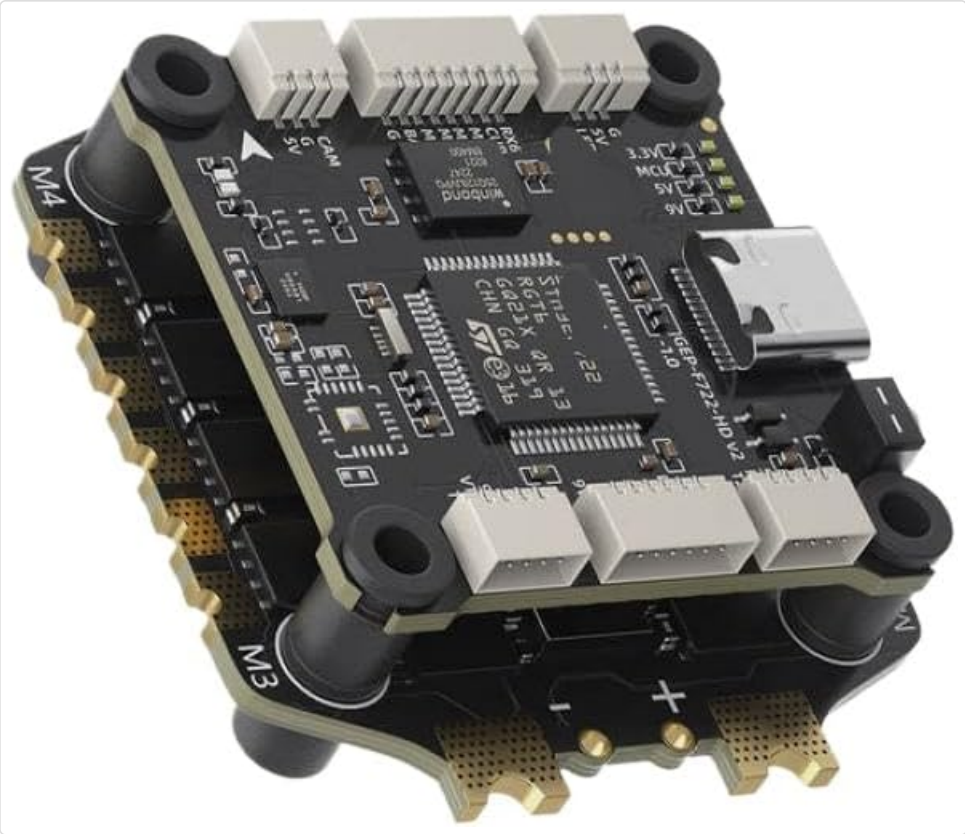

Figure 2.5: Another angled view of the assembled flight stack.

This image offers an alternative angled view of the VortexLumen TAKER F722 BLS 65A V2 Flight Stack, showcasing the various connectors and the overall compact design from a different perspective. It emphasizes the integration of both boards into a single unit.

3. Setup and Installation

The TAKER F722 BLS 65A V2 Flight Stack is designed for plug-and-play installation, minimizing setup complexity. Follow these general guidelines for installation:

1. **Mounting:** Secure the flight stack to your drone frame using standard mounting patterns. Ensure proper isolation from vibrations.
2. **Motor Connection:** Connect your drone's motors to the designated motor pads (M1-M4) on the ESC board. Pay close attention to motor order and rotation direction as specified by your drone's configuration.
3. **Power Connection:** Connect your LiPo battery (3S-6S compatible) to the main battery pads on the ESC. Ensure correct polarity to prevent damage.
4. **Receiver Connection:** Connect your radio receiver to the appropriate UART port on the flight controller. Refer to the flight controller's pinout diagram for specific connections (e.g., SBUS, CRSF, PPM).
5. **Peripheral Connections:** Connect other peripherals such as FPV camera, VTX (video transmitter), GPS, or LEDs to the available ports on the flight controller as needed.
6. **Firmware:** The flight stack comes pre-flashed with optimized firmware. For advanced configuration or updates, connect the flight controller to a computer via the USB-C port and use the appropriate configurator software (e.g., Betaflight, Emuflight).

4. Operating Instructions

Once installed and configured, the TAKER F722 BLS 65A V2 Flight Stack is ready for operation. Adhere to the following guidelines:

- **Pre-Flight Check:** Before each flight, perform a thorough visual inspection of your drone. Verify all connections are secure, propellers are correctly installed, and battery is fully charged.
- **Arming Procedure:** Follow the arming sequence configured in your flight controller software. Ensure your drone is on a stable, level surface and clear of obstacles before arming.
- **Flight Modes:** Utilize the flight modes configured in your radio transmitter and flight controller software to suit your flying style and conditions.
- **Battery Management:** Monitor battery voltage during flight. Land your drone safely before the battery voltage drops below critical levels to prevent damage to the battery and components.
- **Disarming:** Disarm your drone immediately after landing or in an emergency situation.

5. Maintenance

Regular maintenance ensures the longevity and reliable performance of your flight stack:

- **Visual Inspection:** Periodically inspect the flight stack for any signs of physical damage, loose connections, or burnt components.
- **Cleaning:** Keep the boards clean from dust, dirt, and debris. Use a soft brush or compressed air. Avoid using liquids directly on the electronics.
- **Firmware Updates:** Check for and apply firmware updates for both the flight controller and ESC (BLHeli_S) as recommended by the manufacturer or community to benefit from performance improvements and bug fixes.
- **Storage:** When not in use, store the flight stack and drone in a dry, cool environment, away from direct sunlight and extreme temperatures.

6. Troubleshooting

If you encounter issues with your TAKER F722 BLS 65A V2 Flight Stack, consider the following troubleshooting steps:

- **No Power:**
  - Check battery connection and polarity.
  - Inspect power cables for damage or shorts.
  - Verify battery voltage is within the 3S-6S range.
- **Motors Not Spinning/Erratic Behavior:**
  - Ensure motor wires are correctly soldered and not shorting.
  - Check ESC calibration and settings in the configurator software.
  - Verify motor direction and order.
  - Inspect for physical damage to motors or ESC.
- **No Connection to Computer:**
  - Try a different USB-C cable.
  - Ensure correct drivers are installed on your computer.
  - Try a different USB port on your computer.
- **Unstable Flight:**
  - Check for loose propellers or damaged frame components.
  - Review flight controller PID settings.

- Ensure the flight controller is mounted securely and isolated from vibrations.

For persistent issues, consult online resources, community forums, or contact VortexLumen support.

7. Specifications

Feature	Specification
Model	TAKER F722 BLS 65A V2
Brand	VortexLumen
Flight Controller	F722 (32-bit ARM Cortex processor)
ESC Current	65A (BLHeli_S)
Input Voltage	3S-6S LiPo
Connectivity	USB-C, UARTs, PWM, DSHOT
Item Weight	400 Grams
Product Dimensions (L x W x H)	0.39" x 0.39" x 0.39"
Model Number	VortexLumen111

8. Warranty and Support

For warranty information, technical support, or service inquiries, please contact the seller or manufacturer directly. Keep your proof of purchase for any warranty claims.

Manufacturer: VortexLumen

ASIN: B0GGGHRBP3