HGLRC Zeus F745 V2 Stack

HGLRC Zeus F745 V2 Stack Instruction Manual

Model: Zeus F745 V2 Stack | Brand: HGLRC

Overview	**Package Contents**	**Specifications**	**Setup**	**Operating**
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1. OVERVIEW

The HGLRC Zeus F745 V2 Stack is a high-performance flight control system designed for FPV racing and freestyle drones. It integrates an F722 Mini Flight Controller and a 45A V2 BLHeli_S 4-in-1 Electronic Speed Controller (ESC) into a compact 20x20mm mounting form factor. This stack provides stable power delivery and advanced flight processing capabilities for drone builds ranging from 100mm to 450mm frame kits.

Image 1.1: The HGLRC Zeus F745 V2 Stack, showcasing the F722 Flight Controller and 45A 4-in-1 ESC. This image highlights the compact design and key components of the stack.

2. PACKAGE CONTENTS

Verify that all items are present in your package:

- 1x Zeus F722 mini Flight Controller
- 1x Zeus 45A V2 BL_S 3-6S 4in1 ESC
- 1x Accessory Package (includes cables, standoffs, etc.)

3. SPECIFICATIONS

Zeus F722 mini Flight Controller

- **MPU:** BMI270
- **CPU:** STM32F722 RET6
- **FC Firmware:** HGLRCF722 (HGLR)
- **Input Voltage:** 3-6S Lipo

- **I2C Function:** Supported

Zeus 45A V2 BL_S 4in1 ESC

- **Input Voltage:** 3-6S Lipo
- **ESC Firmware:** BL_S (F-H-40)
- **Steady Current:** 45A
- **Peak Current:** 55A (10 Sec)

General

- **Mounting Hole:** 20x20mm, M3
- **Weight:** Approximately 20g
- **Recommended Usage:** For 100mm-450mm Frame Kits

Image 3.1: The HGLRC Zeus F745 V2 Stack components displayed on a digital scale, indicating a combined weight of approximately 19.6 grams. This illustrates the lightweight nature of the stack.

4. SETUP

4.1 Mounting

The Zeus F745 V2 Stack features 20x20mm mounting holes, compatible with many micro and mini FPV drone

frames. Use the provided M3 standoffs and screws to securely mount the stack to your frame. Ensure proper orientation as indicated by markings on the flight controller board.
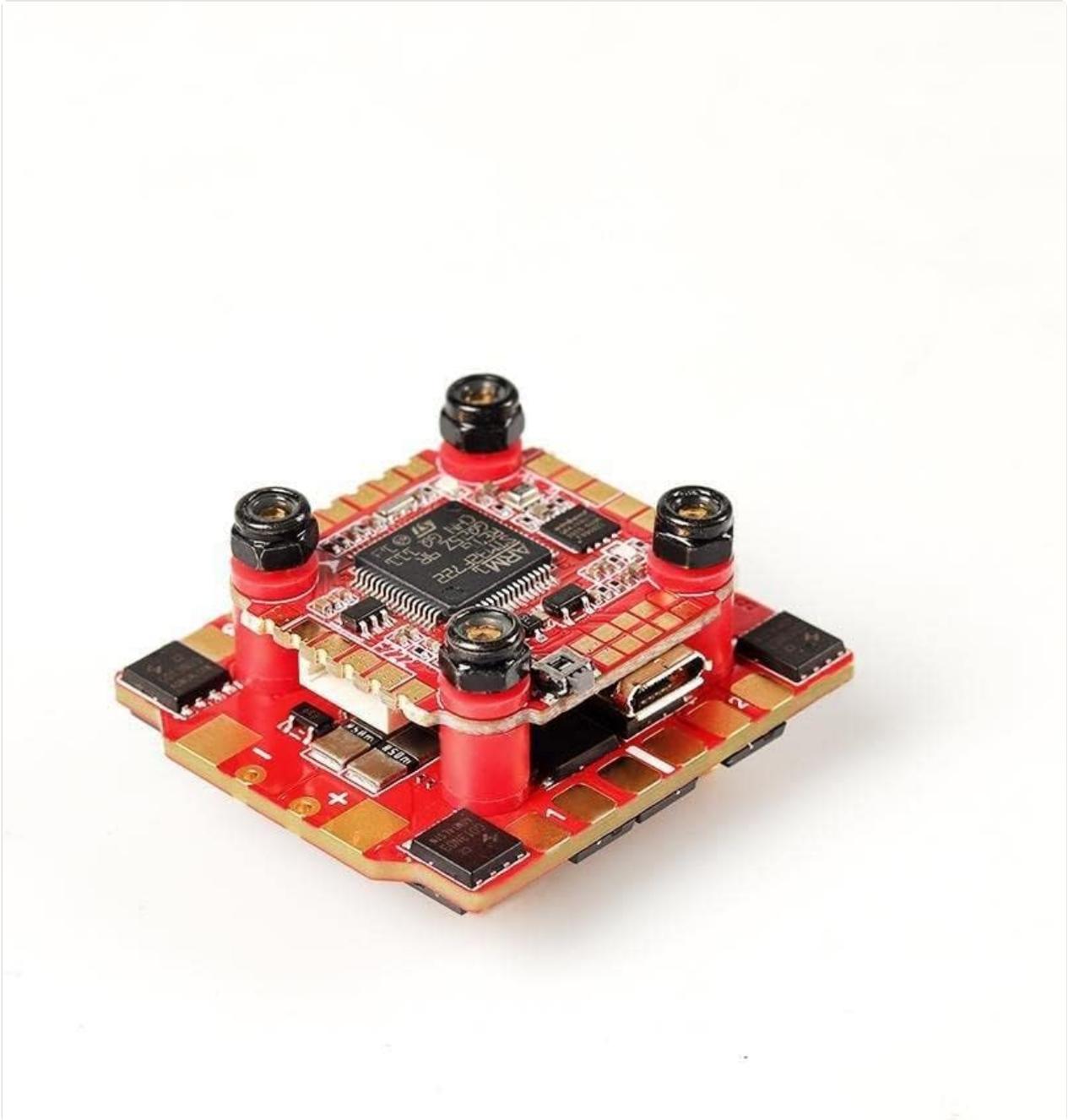

Image 4.1: An assembled HGLRC Zeus F745 V2 Stack, illustrating how the flight controller is mounted directly onto the 4-in-1 ESC. This compact arrangement is designed for efficient space utilization in drone builds.

4.2 Wiring

Carefully connect your motors, receiver, VTX (video transmitter), camera, and GPS (if applicable) to the appropriate pads on the flight controller and ESC. Refer to the detailed wiring diagram available on the HGLRC official website for specific pinouts. Pay close attention to power polarity to prevent damage.
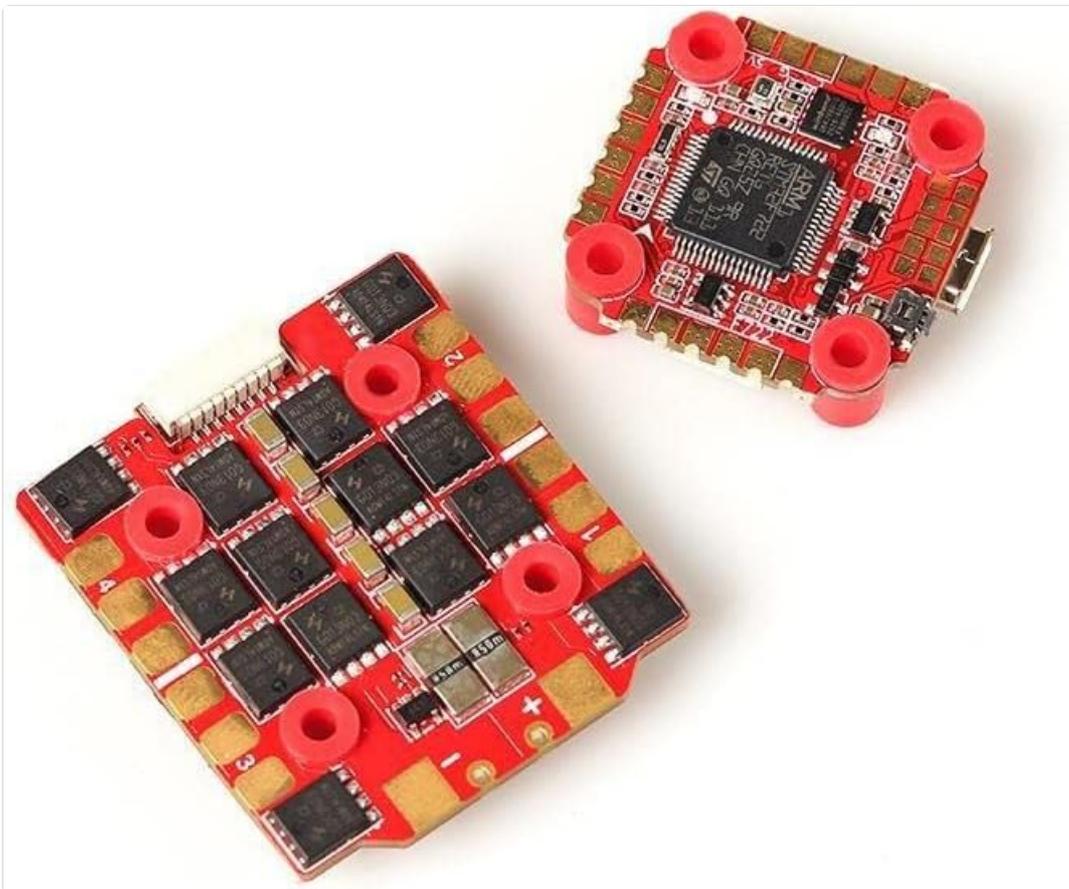
Image 4.2: The HGLRC Zeus F722 Mini Flight Controller and the Zeus 45A V2 BL_S 4-in-1 ESC shown as separate components. This view helps in understanding the individual boards before they are stacked and wired.

4.3 Firmware Flashing

The flight controller comes pre-flashed with HGLRCF722 (HGLR) Betaflight firmware. For updates or configuration, connect the flight controller to your computer via USB and use the Betaflight Configurator software. The ESC uses BL_S (F-H-40) firmware, which can be configured using BLHeliSuite32 or Passthrough via Betaflight.

5. OPERATING INSTRUCTIONS

5.1 Initial Configuration

After physical installation and wiring, connect the flight controller to Betaflight Configurator. Perform the following initial steps:

1. **Calibrate Accelerometer:** Ensure the drone is level and calibrate the accelerometer.
2. **Port Configuration:** Configure UARTs for your receiver, VTX, GPS, etc.
3. **Receiver Setup:** Select your receiver protocol (e.g., SBUS, CRSF, ELRS) and verify stick inputs.
4. **ESC/Motor Configuration:** Use the Motors tab to verify motor direction and responsiveness. If necessary, reverse motor direction in BLHeliSuite32 or Betaflight motor tab.
5. **Modes Setup:** Configure arming, flight modes (Angle, Acro, Horizon), and other auxiliary functions.

5.2 Pre-Flight Checks

Before each flight, perform a thorough pre-flight check:

- Verify battery voltage.
- Check propeller tightness and orientation.

- Confirm all control surfaces respond correctly to transmitter inputs.
- Listen for any unusual motor noises during arming.

6. Maintenance

Regular maintenance ensures the longevity and reliable performance of your HGLRC Zeus F745 V2 Stack:

- **Cleaning:** Periodically clean the boards with isopropyl alcohol and a soft brush to remove dust, dirt, or debris. Ensure no conductive materials bridge components.
- **Inspections:** Regularly inspect solder joints for cracks or cold joints. Check for any signs of physical damage to components or traces.
- **Firmware Updates:** Keep your flight controller and ESC firmware updated to benefit from performance improvements and bug fixes. Always back up your configuration before updating.
- **Vibration Management:** Ensure the stack is mounted with adequate vibration dampening to protect the gyroscope and accelerometer from excessive noise.

7. Troubleshooting

This section addresses common issues you might encounter:

Problem	Possible Cause	Solution
Drone does not arm	Safety features preventing arming (e.g., low battery, no receiver signal, accelerometer not calibrated, DSHOT beacon active).	Check Betaflight Configurator's 'Setup' tab for arming flags. Ensure receiver is bound and connected. Calibrate accelerometer. Disable DSHOT beacon if active.
Motors not spinning or spinning incorrectly	Incorrect motor wiring, wrong motor direction, ESC calibration issues, damaged motor/ESC.	Verify motor wiring to ESC. Check motor direction in Betaflight Configurator's 'Motors' tab or BLHeliSuite32. Ensure ESCs are properly calibrated. Inspect motors and ESCs for physical damage.
No video signal	Incorrect VTX/camera wiring, VTX not powered, wrong VTX channel/band, damaged VTX/camera.	Check VTX and camera wiring for correct polarity and connections. Ensure VTX is receiving power. Verify VTX channel and band match your FPV goggles/monitor.
Flight controller not detected by computer	Missing USB drivers, faulty USB cable, damaged USB port on FC.	Install necessary STM32 VCP drivers. Try a different USB cable. Test with another USB port on your computer. Inspect FC's USB port for damage.

8. Warranty and Support

This product is manufactured by HGLRC. For specific warranty information, please refer to the retailer's return policy or contact HGLRC directly through their official website. Typically, electronic components like flight controllers and ESCs come with a limited warranty against manufacturing defects.

For technical support, firmware updates, or detailed wiring diagrams, please visit the official HGLRC website or consult relevant community forums for FPV drones. Always ensure you are using official resources for the

most accurate and up-to-date information.