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HGLRC H743 8S MINI V1 FC

HGLRC H743 8S MINI V1 FC Flight Controller User Manual

Model: H743 8S MINI V1 FC

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your HGLRC H743 8S MINI V1 FC Flight Controller. Please read this manual thoroughly before using the product to ensure proper function and safety.

2. Product Features

- **High-Performance MCU:** Equipped with the STM32H743 MCU, delivering powerful computing and rapid response.
- **Enhanced Stability:** Features the ICM42688P gyroscope for improved flight stability.
- **Comprehensive Data Logging:** Includes a 16MB large-capacity Blackbox for detailed flight data recording.
- **8S High-Voltage Input:** Supports 8S high-voltage input for stable power output, ensuring fast response and control.
- **Plug-and-Play Design:** Fully modular design with direct connectors, eliminating the need for soldering.
- **Compact and Efficient:** Ultra-narrow size and dual BEC design optimize installation space, making it compatible with small frames.



Image 2.1: The HGLRC H743 8S MINI V1 FC, highlighting the STM32H743 MCU for powerful processing.



Image 2.2: Close-up view of the ICM42688P gyroscope, chosen for enhanced flight stability.



Image 2.3: The 16MB Blackbox chip integrated into the flight controller for comprehensive flight data logging.



Image 2.4: Top view of the flight controller, illustrating its support for 8S high-voltage input for stable power delivery.



Image 2.5: Close-up of the modular connectors, demonstrating the plug-and-play design that eliminates soldering.



Image 2.6: The flight controller showcasing its ultra-narrow size and dual BEC design, ideal for compact builds.

3. Package Contents

Please verify that all items listed below are included in your package. If any items are missing or damaged, please contact HGLRC support.

- 1x HGLRC H743 8S MINI V1 FC
- 1x 30AWG 25mm Double-ended SH1.0-8P Cable
- 1x 30AWG, 100mm Double-ended SH1.0-4P Receiver Cable
- 1x 30AWG, 50mm Single SH1.0-3P / Single SH1.25-3P Camera Cable
- 1x 30AWG 70MM Single GH1.25-6P / Single SH1.0-7P DJI Cable
- 1x 30AWG 70MM Single SH1.0-7P / Single 1.0-6P VTX Cable
- 1x 30AWG, 120mm total length, Double-ended SH1.0-6P GPS Cable
- 4x 3*8 Vibration Damping Standoffs

- 4x 3*6.6 Vibration Damping Standoffs
- 1x HGLRC Sticker
- 1x QR Code Card

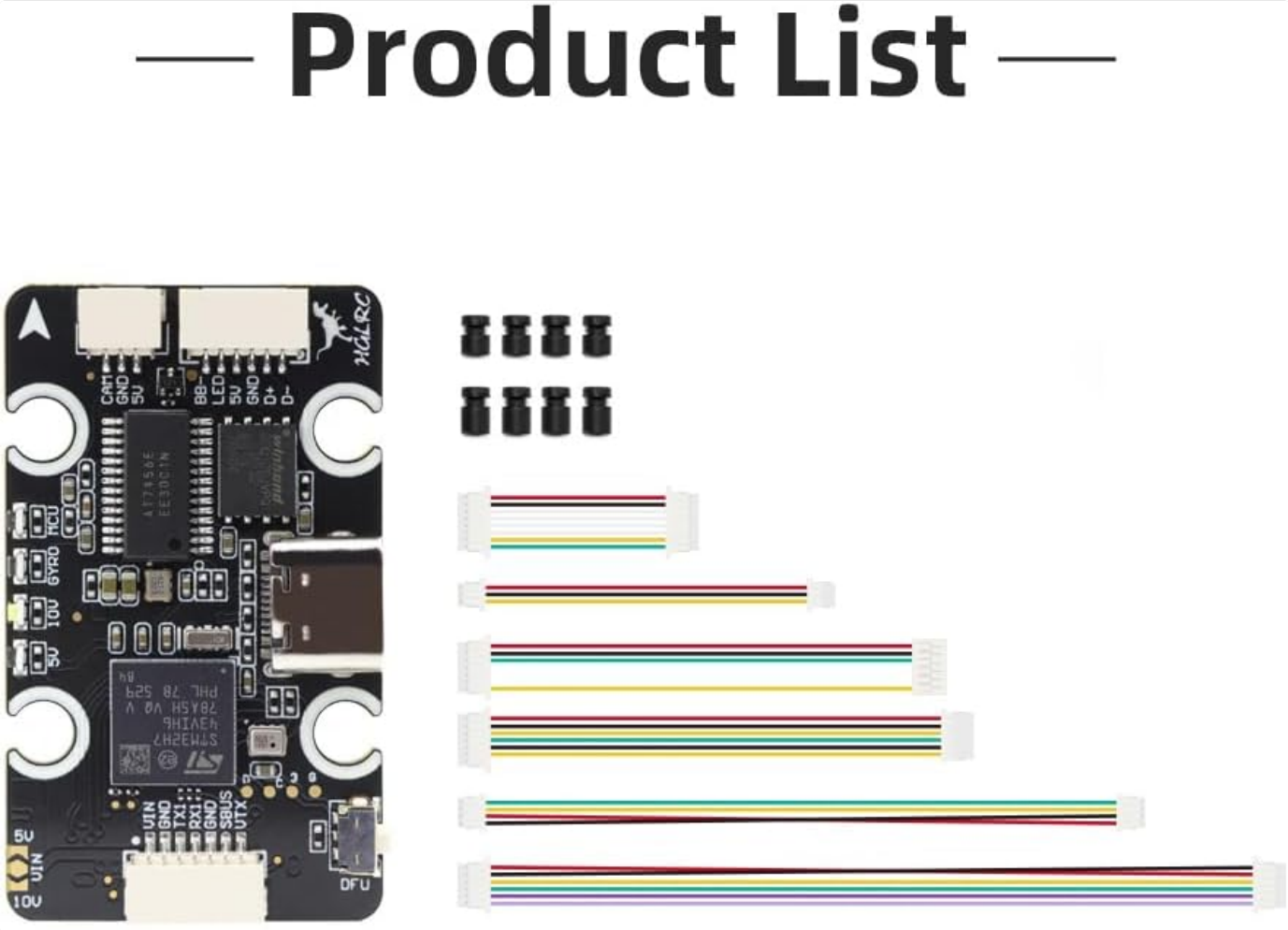


Image 3.1: Visual representation of the HGLRC H743 8S MINI V1 FC and its included accessories.

4. Specifications

Model Name	HGLRC H743 8S MINI V1 FC
Firmware	HGLRC_H743_LITE
MCU	STM32H743
Gyroscope	ICM42688P
OSD	AT7456E
Barometer	SPA06-003
Blackbox	16MB
UART Ports	8
Input Voltage	7.4V-33.6V / 2-8S LIPO
Dimensions	42mm x 25mm
Mounting Holes	20x20mm, M3

Weight	6.8g

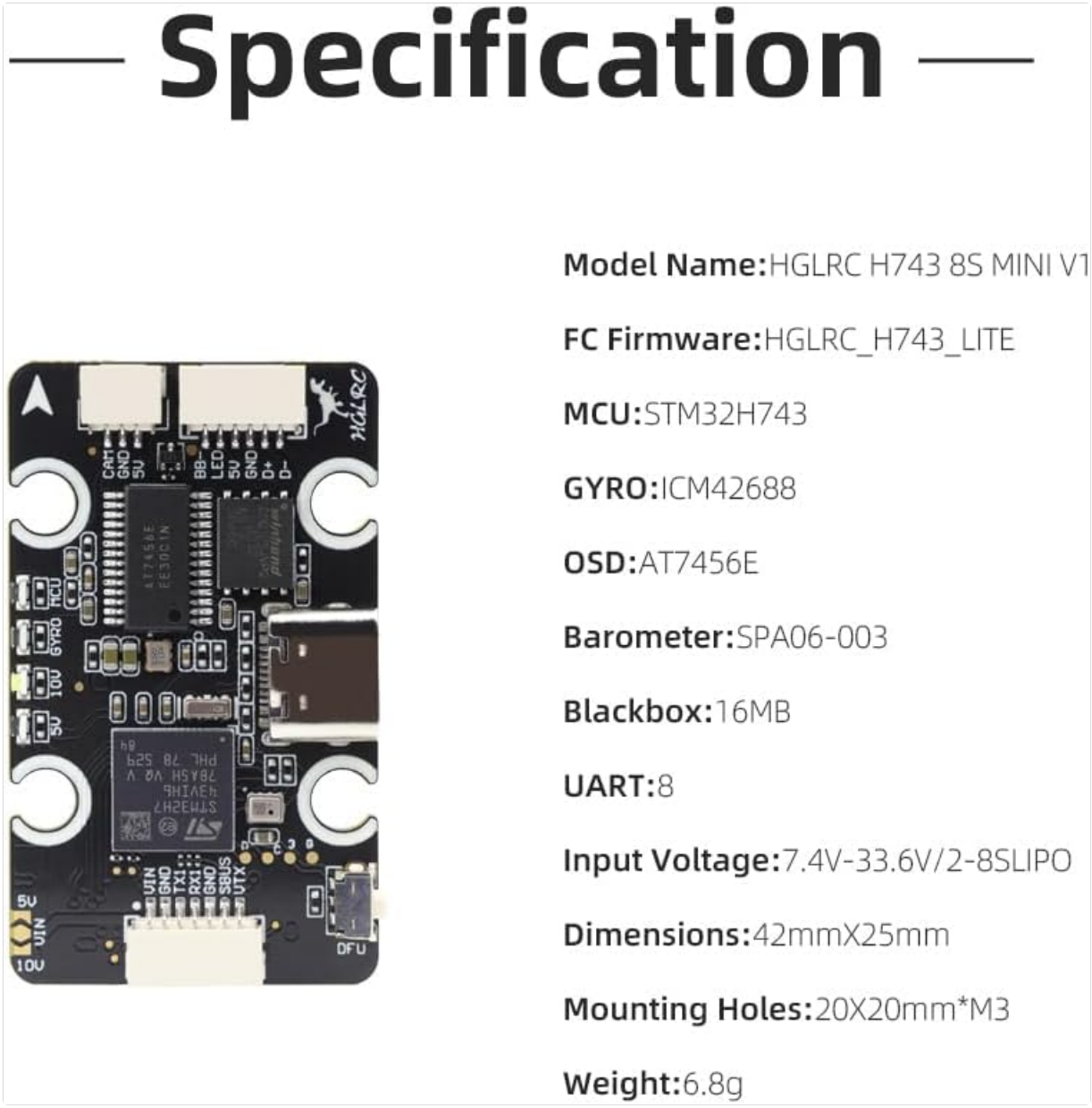


Image 4.1: Visual summary of the HGLRC H743 8S MINI V1 FC specifications.

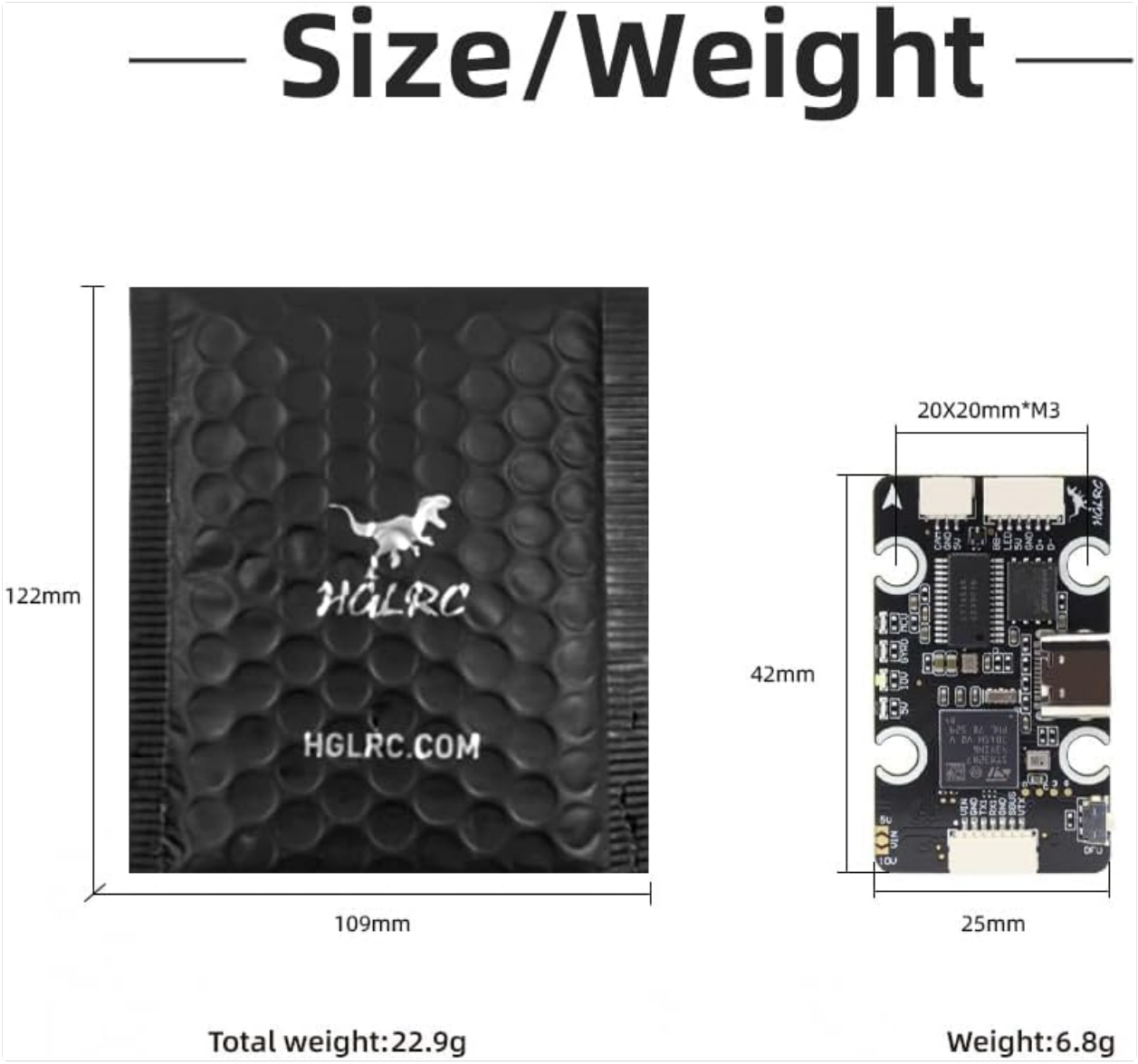


Image 4.2: Dimensions and weight details for the HGLRC H743 8S MINI V1 FC.

5. Setup and Wiring

Correct wiring is crucial for the safe and proper operation of your flight controller. Please refer to the wiring diagram below and ensure all connections are made accurately.

5.1 Wiring Diagram

This diagram illustrates the connections for various components such as ESCs, receivers, VTX, camera, and GPS. Pay close attention to power (VCC/5V/10V) and ground (GND) connections, as well as signal lines (TX/RX, SCL/SDA).

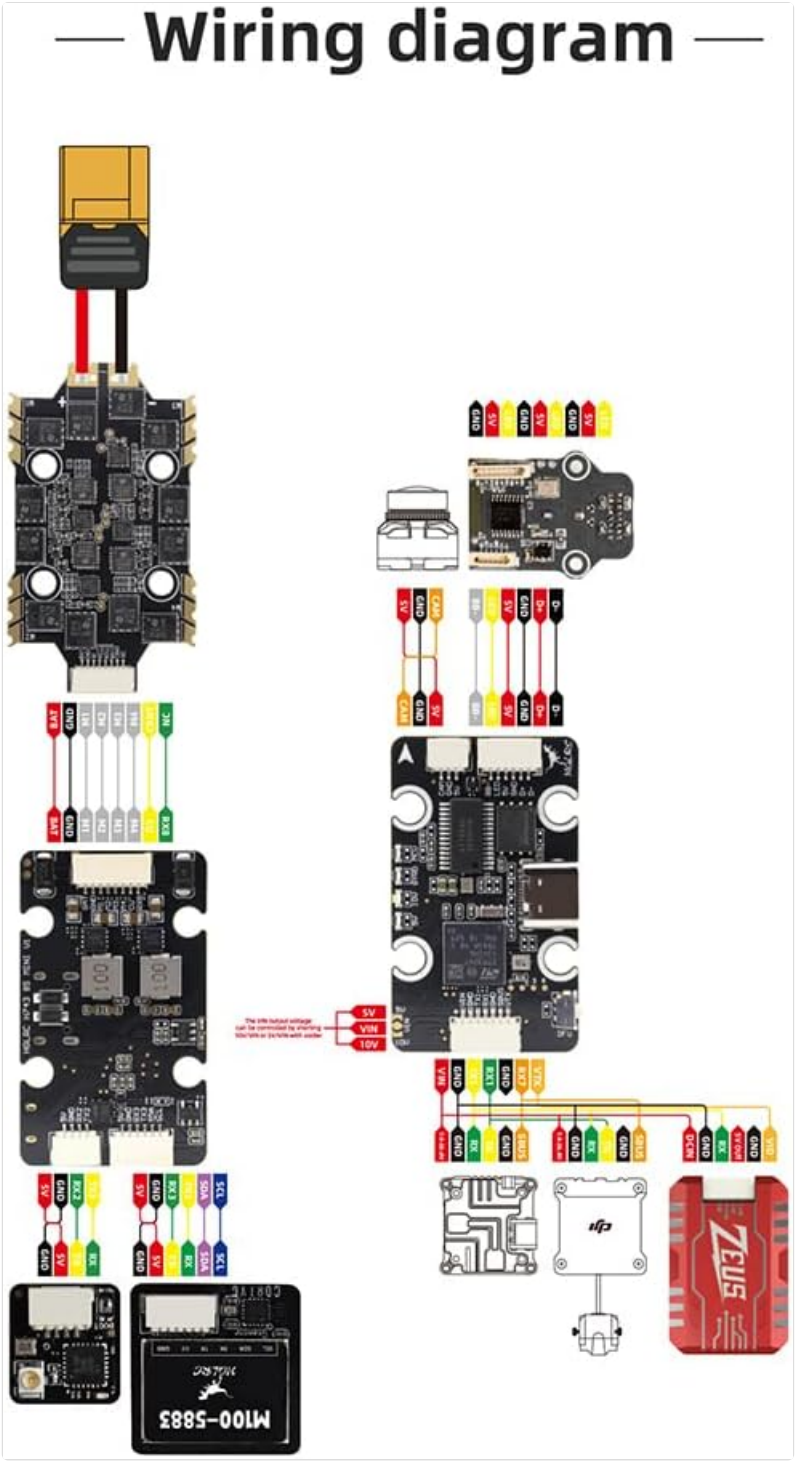


Image 5.1: Detailed wiring diagram for connecting the HGLRC H743 8S MINI V1 FC to other drone components.

5.2 Installation Tips

- Use the provided vibration damping standoffs to mount the FC securely and reduce noise to the gyroscope.
- Ensure all connectors are fully seated and locked to prevent disconnections during flight.
- Double-check polarity for all power connections before applying power to avoid damage.
- Keep signal wires as short as possible and away from power wires to minimize interference.

6. Operating Instructions

After physical installation and wiring, the flight controller requires software configuration.

6.1 Firmware Flashing

1. Download the latest firmware (HGLRC_H743_LITE) from the official HGLRC website or Betaflight configurator.
2. Connect the flight controller to your computer via a USB cable.
3. Open the Betaflight Configurator (or your preferred flight controller software).
4. Enter DFU mode (usually by holding the DFU button while plugging in USB, or using the CLI command).
5. Flash the downloaded firmware to the flight controller.

6.2 Initial Configuration

1. After flashing, reconnect the FC to the configurator.
2. Perform sensor calibration (accelerometer, gyroscope).
3. Configure UART ports for your receiver, VTX, GPS, etc.
4. Set up ESC protocols (DShot, OneShot, etc.) and motor directions.
5. Configure OSD settings, flight modes, and other preferences.
6. Save all configurations and disconnect.

For detailed software configuration steps, please refer to the official documentation of the firmware (e.g., Betaflight documentation).

7. Maintenance

Regular maintenance helps ensure the longevity and reliability of your flight controller.

- **Inspection:** Periodically inspect the FC for any visible damage, loose connections, or signs of corrosion.
- **Cleaning:** Gently clean the board with a soft brush and isopropyl alcohol if dust or debris accumulates. Ensure the board is completely dry before powering on.
- **Firmware Updates:** Keep the firmware updated to benefit from the latest features, bug fixes, and performance improvements.
- **Storage:** When not in use, store the flight controller in a dry, anti-static environment.

8. Troubleshooting

If you encounter issues with your HGLRC H743 8S MINI V1 FC, consider the following common troubleshooting steps:

- **No Power:** Check all power connections, battery voltage, and ensure no short circuits are present.
- **No Connection to PC:** Try a different USB cable or port. Ensure correct drivers are installed. Re-enter DFU mode if necessary.
- **Sensors Not Working:** Verify sensor calibration. Check for physical damage to the gyroscope or accelerometer. Ensure the FC is mounted securely and free from excessive vibrations.
- **Motors Not Spinning:** Check ESC connections, motor wiring, and ESC calibration. Verify motor output in the configurator.
- **Unstable Flight:** Recheck PID tuning, ensure proper FC mounting, and verify no interference with signal lines.
- **OSD Issues:** Check OSD settings in the configurator. Ensure video signal is correctly routed through the FC.

If problems persist, consult online forums, community groups, or contact HGLRC technical support.

9. Warranty and Support

HGLRC products are designed for quality and performance. For warranty information, please refer to the official HGLRC website or your purchase documentation. If you require technical assistance, have questions about setup, or need to report a defect, please contact HGLRC customer support through their official channels.

HGLRC Official Website: www.hglrc.com

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