

AERO SELFIE H743 + 45A ESC Stack

AERO SELFIE H743 Flight Controller and 45A ESC Stack Instruction Manual

Model: H743 + 45A ESC Stack

Brand: AERO SELFIE

1. INTRODUCTION

This manual provides detailed instructions for the installation, wiring, firmware flashing, and configuration of your AERO SELFIE H743 Flight Controller with 45A 8-bit ESC 30x30 Stack. Please read this manual thoroughly before attempting any procedures to ensure safe and correct operation.

2. PRODUCT OVERVIEW

Key Features

- **High-Performance Flight Controller & ESC Combo:** Features the AERO SELFIE H743 Flight Controller with STM32H743 processor (480MHz, 2MB Flash) and dual IMUs (BMI088/BMI270), paired with the AERO SELFIE 45A 4in1 ESC for ultra-responsive motor control.
- **Versatile & Easy to Configure Firmware Support:** Compatible with Betaflight, Ardupilot, PX4, and INAV for enhanced flight performance, stability, and flexibility across various drone types, with simple setup and configuration options.
- **Powerful ESC Features:** The ESC supports 2S-6S lithium batteries, delivers 45A continuous current per channel, and features high-frequency PWM, DSHOT, and ONESHOT protocols for precise throttle response.
- **Easy Integration & Compact Design:** The 30.5x30.5mm mounting pattern ensures compatibility with a wide range of drone frames, while the stack's lightweight (total weight: 21.5g for both the ESC and Flight Controller) and compact design simplifies installation and enhances assembly efficiency.
- **Connectivity & Expansion:** The H743 Flight Controller offers 7 UART ports, 10 PWM outputs, CAN, I2C, and an OSD for additional sensor and peripheral integration, making it a flexible solution for complex drone builds.

Specifications

Attribute	Value
Brand	AERO SELFIE
Model Name	H743 + 45A ESC Stack
Item Weight	21.5 Grams
Connectivity Technology	Radio Frequency, UART, USB
Skill Level	Advanced
Material	Plastic Or Carbon Fiber

3. PACKAGE CONTENTS

The AERO SELFIE H743 Flight Controller with 45A ESC Stack package includes the following items:

- XT60 Male Power Cable 150mm Length x 1
- 35V Fixed Capacitor x 1
- 8PIN 1.0mm Cable 80mm Length x 1
- 8PIN 1.0mm Cable 30mm Length x 1
- GPS 6 pin Cable 150mm in Length x 1
- Nuts, Grommets, Screws and O rings

Package

H743 FC with 45A ESC 8bit Stack

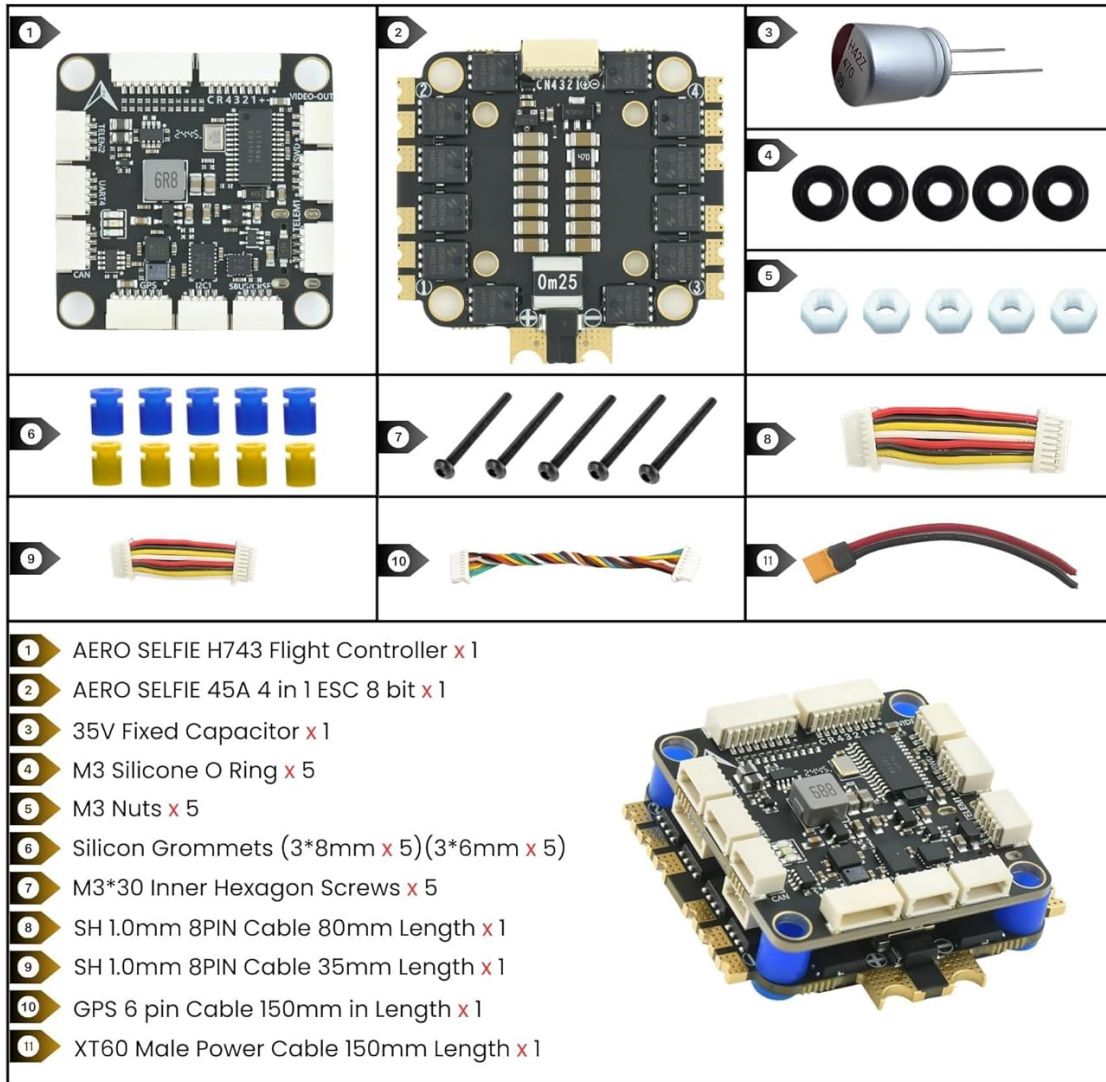
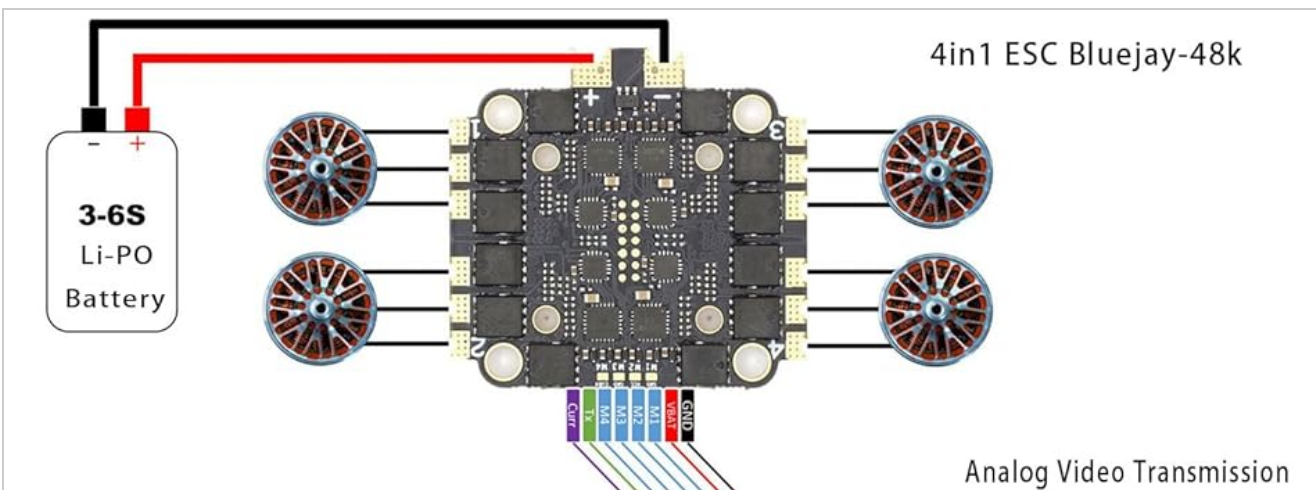


Figure 1: Package contents for the AERO SELFIE H743 Flight Controller and 45A ESC Stack. This image displays the flight controller, ESC, capacitor, power cable, various connecting cables, nuts, grommets, and screws.

4. INSTALLATION & WIRING

Wiring Diagram

Refer to the diagram below for proper wiring connections between the flight controller, ESC, motors, and other peripherals.



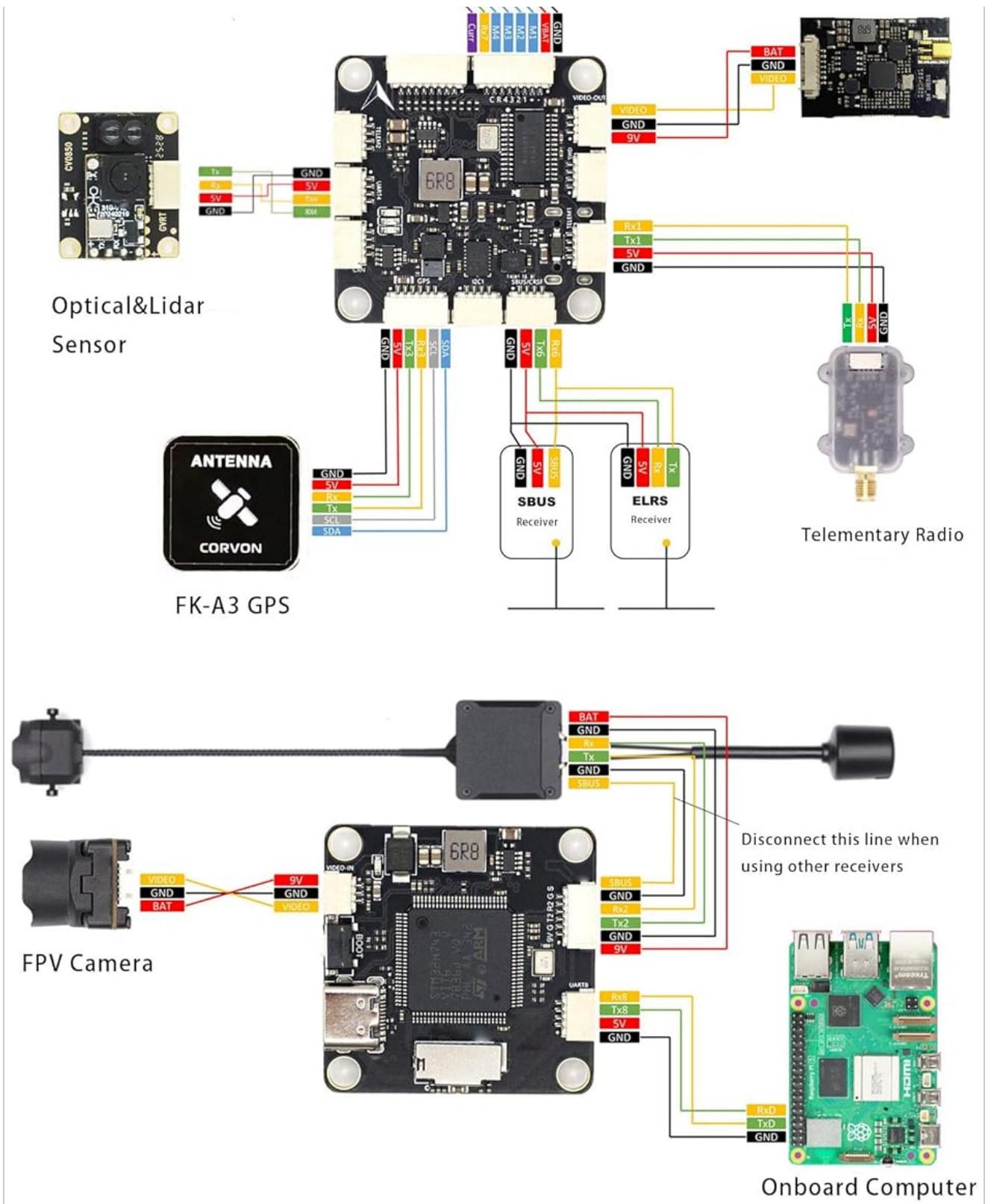


Figure 2: Detailed wiring diagram showing connections for the 4-in-1 ESC, optical/LiDAR sensor, GPS, SBUS/ELRS receivers, telemetry radio, FPV camera, and an onboard computer. The diagram illustrates how to connect a 3-6S LiPo battery to the 4-in-1 ESC, and how the ESC connects to the flight controller and motors. Peripheral connections to UART ports and other pins are also shown.

Layout Details

Understand the pinout and component layout of the flight controller for correct connections.

Layout Details

Note:

Connecting the computer to the flight controller requires a USB to Type-C cable for successful connection. For the first time connecting the flight controller to a computer, you must install the driver. Using BF as a reference, download the program with the filename (zadlg).

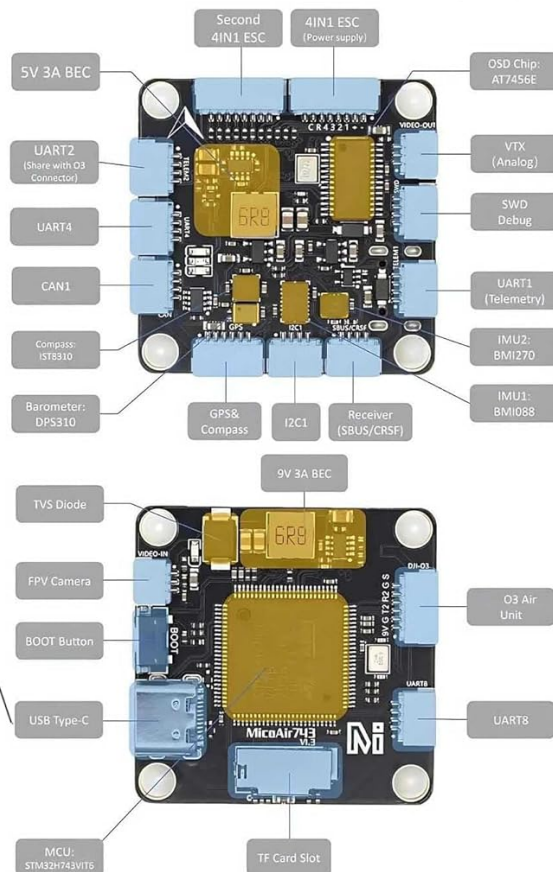


Figure 3: Layout details of the AERO SELFIE H743 Flight Controller, highlighting various ports such as UARTs, CAN, I2C, GPS, SBUS/CRSF, FPV Camera, USB Type-C, and the BOOT button. It also indicates the location of the MCU, IMUs (BMI088, BMI270), Barometer (DPS310), and OSD chip (AT7456E).

Note: Connecting the flight controller to a computer requires a USB to Type-C cable. For the first-time connection, you must install the necessary drivers. Refer to Betaflight documentation for driver installation if needed.

5. FIRMWARE FLASHING

The AERO SELFIE H743 Flight Controller supports various open-source firmwares including Betaflight, INAV, PX4, and Ardupilot. Below are resources and guides for flashing.

General Flashing Instructions

Your browser does not support the video tag.

Video 1: MicoairH743 Series Flight Controller Firmware Flashing Guide. This video provides a comprehensive guide on how to flash firmware onto the MicoAirH743 series flight controllers, covering various open-source firmwares like ArduPilot, PX4, INAV, and Betaflight. It details the tools needed, DFU driver installation, and flashing procedures for each firmware type.

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Video 2: Instruction on how to connect the Flight Controller to a mobile device. This video demonstrates the process of connecting the flight controller to a mobile phone using an OTG adapter and a USB cable, then accessing it via the Speedy Bee app for configuration.

ESC Firmware

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Video 3: Overview of a 60A 4-in-1 ESC. While this video showcases a 60A ESC, the principles of connectivity and features are similar to the 45A ESC included in your stack. It highlights the compact design, high current output, and BLHeli_S firmware compatibility.

Related Flashing Guides

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Video 4: DYS F7 F722 Stack Flight Controller 30x30 AM32 65A ESC. This video provides a brief overview of a DYS F7 F722 Flight Controller stack. While the model differs, it demonstrates the physical appearance and general stack configuration relevant to similar products.

6. SETUP & CONFIGURATION

After flashing the desired firmware (Betaflight, INAV, PX4, or Ardupilot), connect the flight controller to your computer using a USB Type-C cable. Open the corresponding configurator software (e.g., Betaflight Configurator, INAV Configurator, Mission Planner for Ardupilot, QGroundControl for PX4) to perform initial setup and calibration. Follow the on-screen instructions within the configurator for:

- Sensor calibration (accelerometer, gyroscope, magnetometer)
- Radio setup and calibration
- Motor direction and ESC calibration
- Flight mode configuration
- OSD (On-Screen Display) settings
- PID tuning (advanced users)

7. TROUBLESHOOTING

If you encounter issues during setup or operation, consider the following:

- **Driver Recognition Issues:** If your computer (especially macOS) does not recognize the flight controller, ensure you have installed the correct DFU drivers. Refer to the firmware flashing guide (Video 1) for driver installation steps.
- **Firmware/Board Target Mismatch:** Ensure you are flashing the correct firmware version for the H743 + 45A ESC Stack. Flashing incorrect firmware can lead to unexpected behavior or bricking.
- **No Telemetry/GPS Data:** Verify all wiring connections according to the wiring diagram (Figure 2). Check the UART settings in your chosen firmware configurator to ensure the correct ports are enabled and configured for your peripherals.
- **Motor Issues:** Ensure ESCs are calibrated correctly and motor directions are set in the configurator. Check for any loose motor connections.
- **Power Issues:** Verify battery voltage and connections. Ensure BEC outputs are providing stable 5V and 9V power to components.

8. SAFETY GUIDELINES

Always prioritize safety when working with drone electronics and operating drones. Adhere to the following guidelines:

- Always operate your drone in accordance with local laws and regulations.
- Ensure all connections are secure and insulated to prevent short circuits.
- Never work on the drone with propellers attached or while the battery is connected, unless absolutely necessary for testing and with extreme caution.
- Perform pre-flight checks before every flight, including battery levels, motor function, and control surface response.
- Avoid flying near people, animals, or property.
- Keep the flight controller and ESC away from moisture and extreme temperatures.

9. WARRANTY & SUPPORT

This product is manufactured by Shenzhen Ruijie Innovation Technology Co.,Ltd under the AERO SELFIE brand. For warranty information, technical support, or further assistance, please visit the official AERO SELFIE store on Amazon or contact the manufacturer directly.

Visit the [AERO SELFIE Store](#) for more products and support resources.