SEQURE H743 V2 & E70 G2(AM32)

SEQURE H743 V2 & E70 G2 (AM32) Flight Controller Stack Instruction Manual

Model: H743 V2 & E70 G2 (AM32)

Brand: SEQURE

Introduction

This manual provides detailed instructions for the installation, setup, and operation of the SEQURE H743 V2 & E70 G2 (AM32) Flight Controller Stack. Please read this manual thoroughly before use to ensure proper functionality and safety.

Product Overview

The SEQURE H743 V2 & E70 G2 (AM32) is a high-performance flight controller (FC) and 4-in-1 Electronic Speed Controller (ESC) stack designed for FPV drones, racing, and freestyle quadcopters.

Key Features

- Built-in STM32H743 processor, ICM42688P gyro, and angled soldering pad that reduce the difficulty of welding, safer to use.
- SEQURE flight controller supports up to 8 motors, easily constructing X8. Integrated with 5V/10V dual BEC output, providing independent power for DJI O3 and analog VTX.
- 4-in-1 ESC, 70A continuous current, 150A peak current. Supports 2-8S Lipo, digital protocol DShot600/300/150 and is compatible with Oneshot/MultiShot/PWM protocol.
- Built-in galvanometer, supports telemetry return, and updates motor speed, temperature, current and other data in real time.
- Supported LED, used for WS2812 LED controlled by Betaflight firmware, for customizable lighting effects.

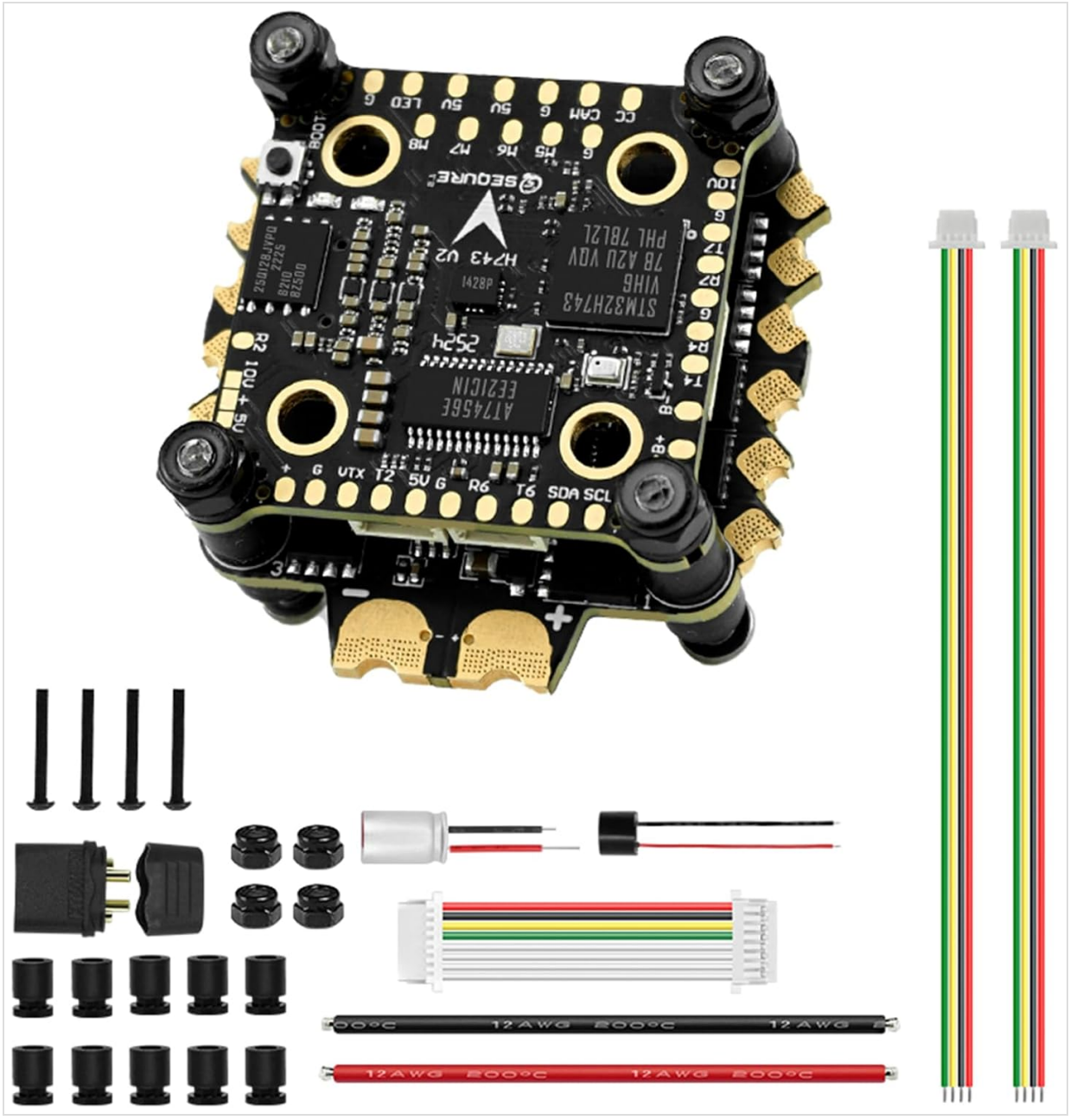

Image: The SEQURE H743 V2 & E70 G2 (AM32) Flight Controller Stack, showcasing the main board and various included accessories such as cables, connectors, and mounting hardware.

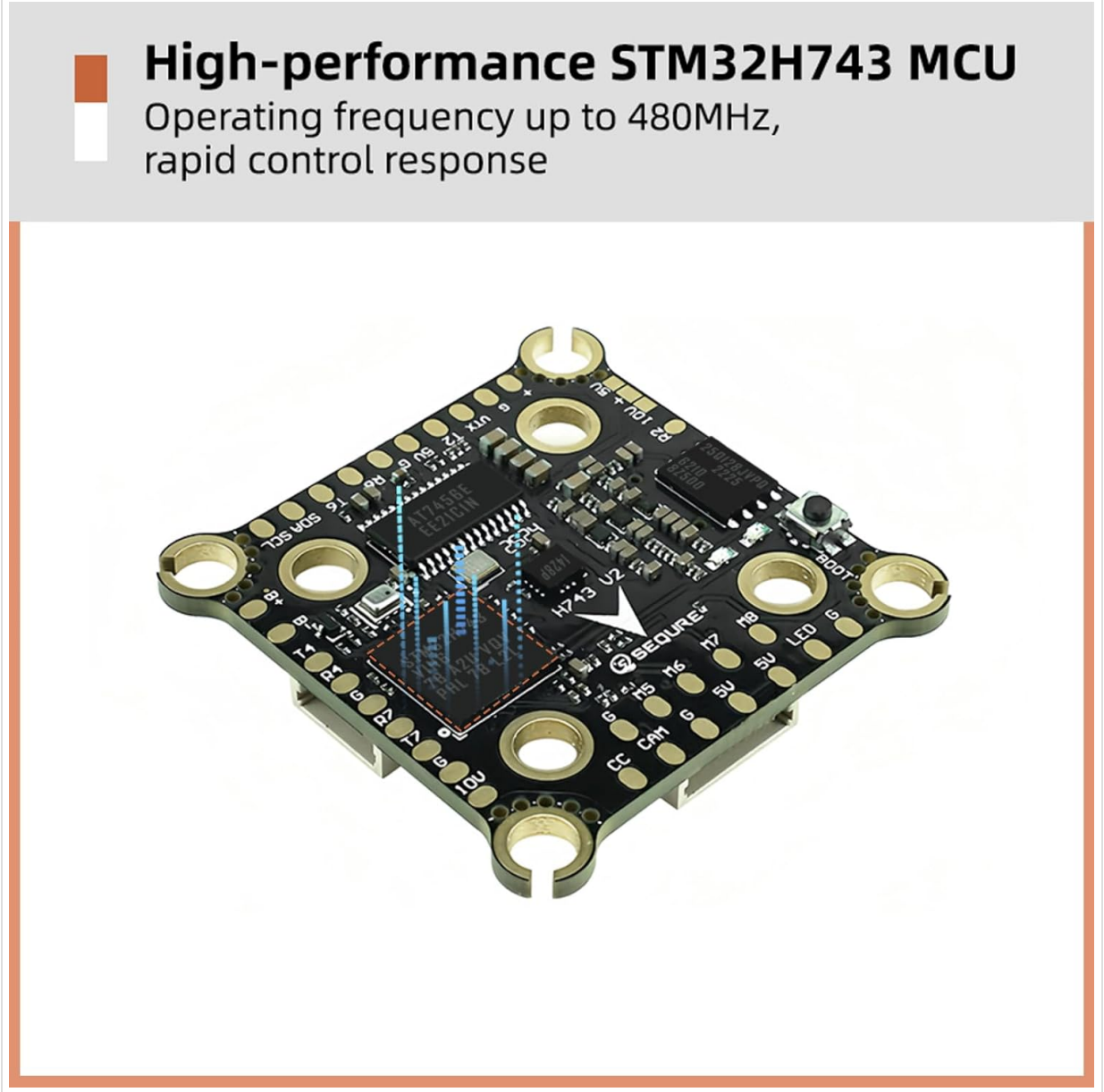

Image: A detailed view of the flight controller board highlighting the high-performance STM32H743 Microcontroller Unit (MCU), which operates at up to 480MHz for rapid control response.

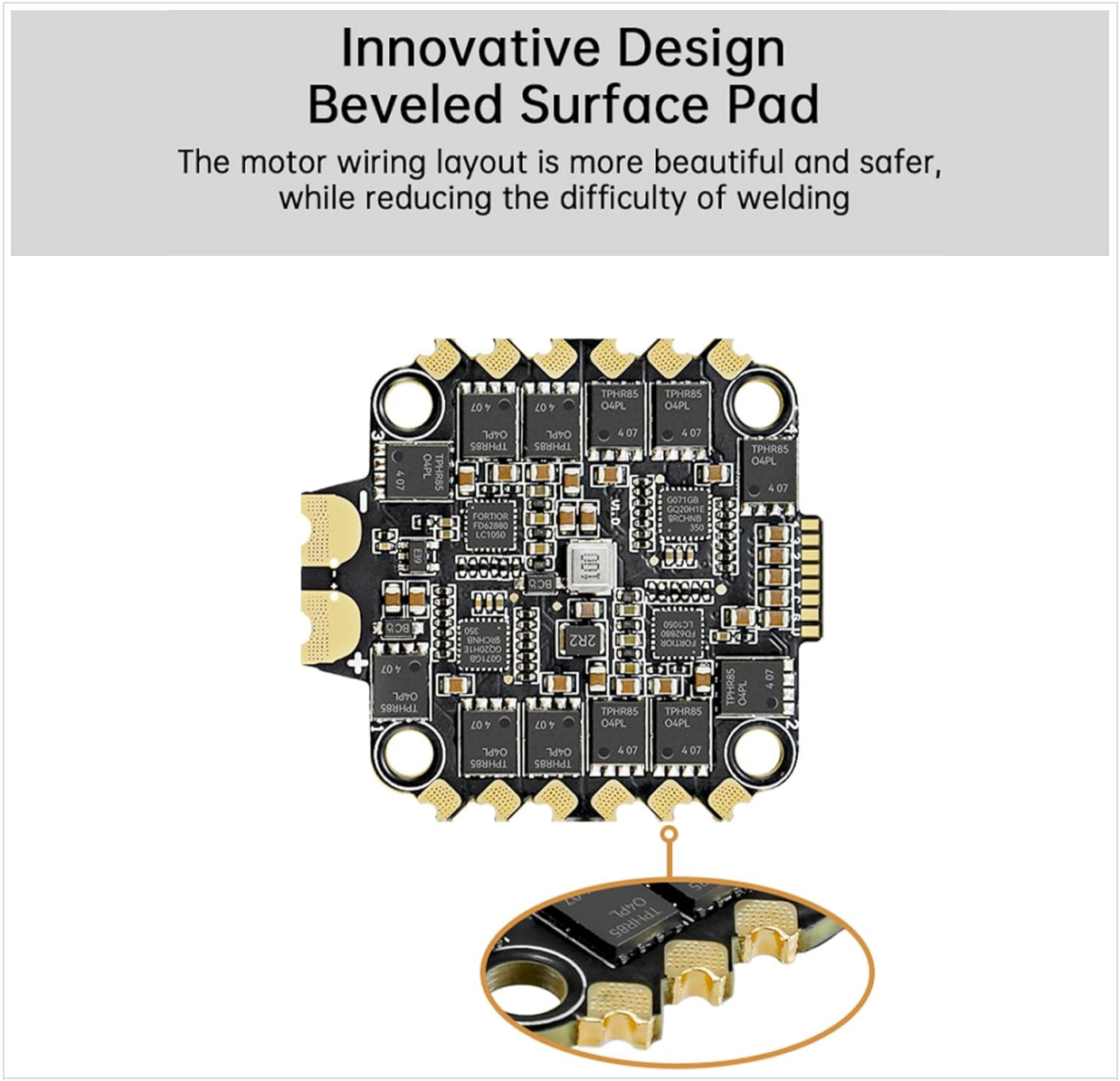

Image: An illustration of the innovative beveled surface pads on the flight controller, designed to simplify motor wiring and enhance soldering safety.

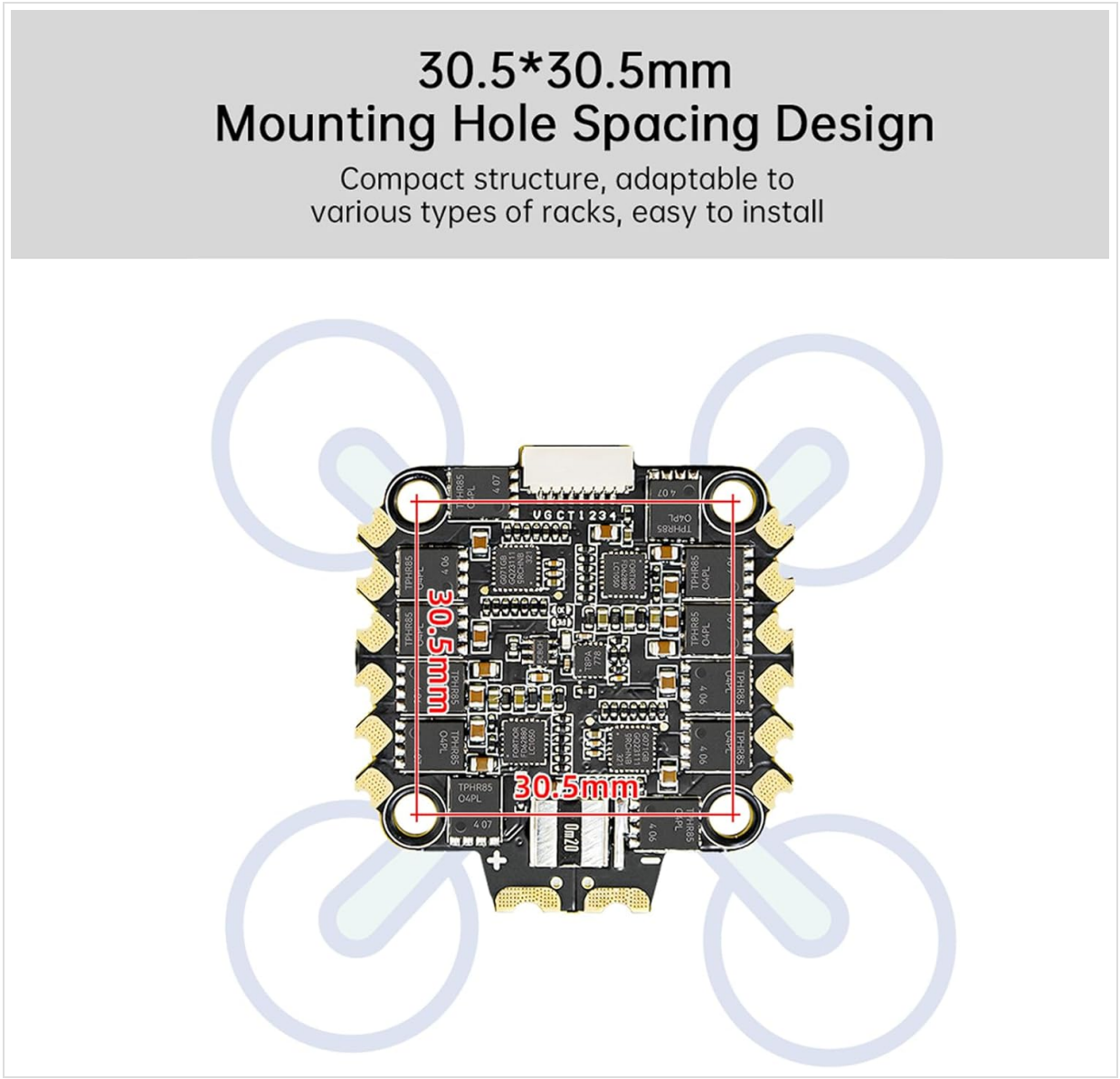

Image: A diagram illustrating the 30.5x30.5mm mounting hole spacing of the flight controller, indicating its compact structure and adaptability to various drone frames.

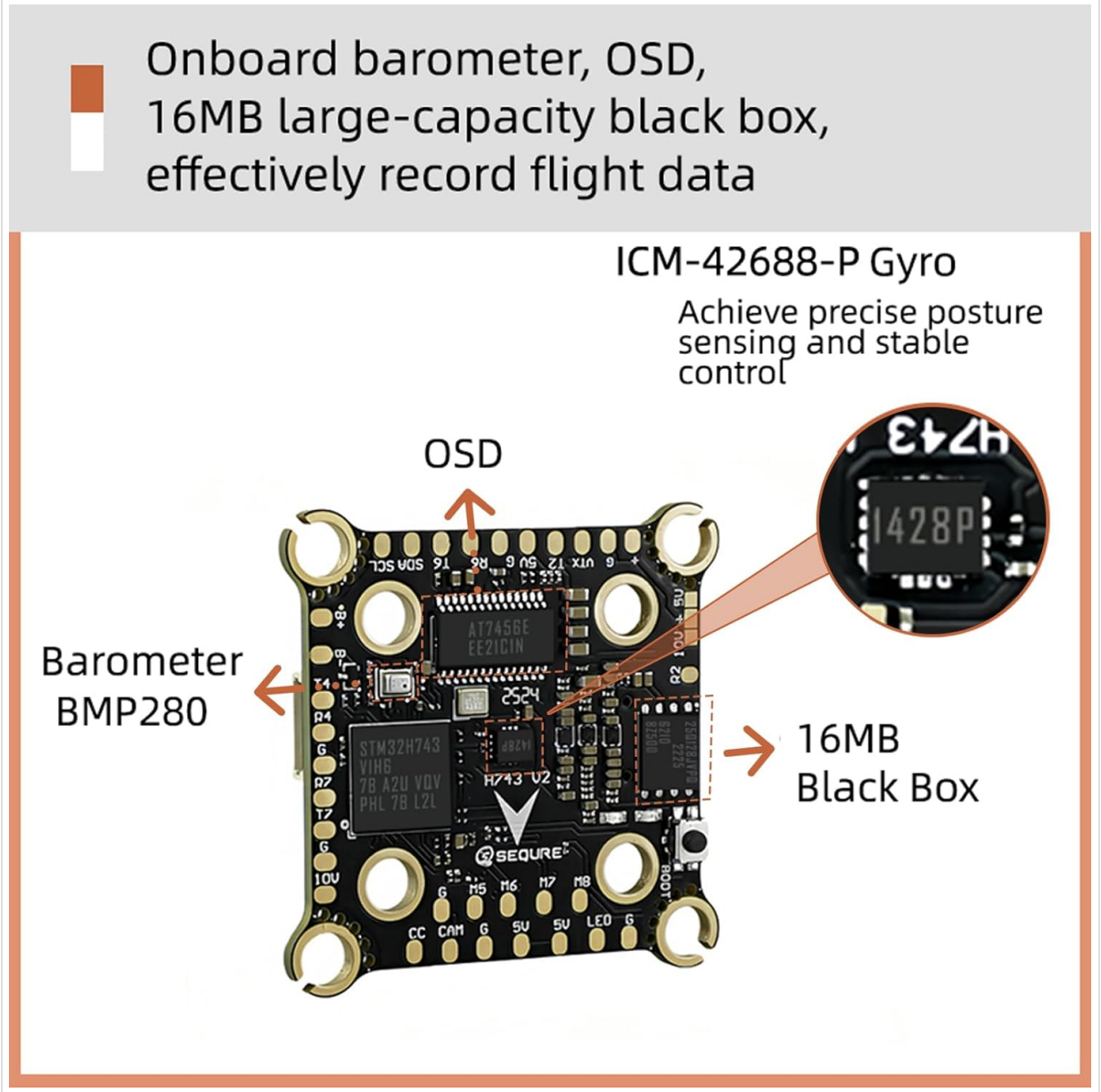

Image: A close-up view of the flight controller board, highlighting the built-in galvanometer which supports real-time telemetry return for speed, current, and temperature data.

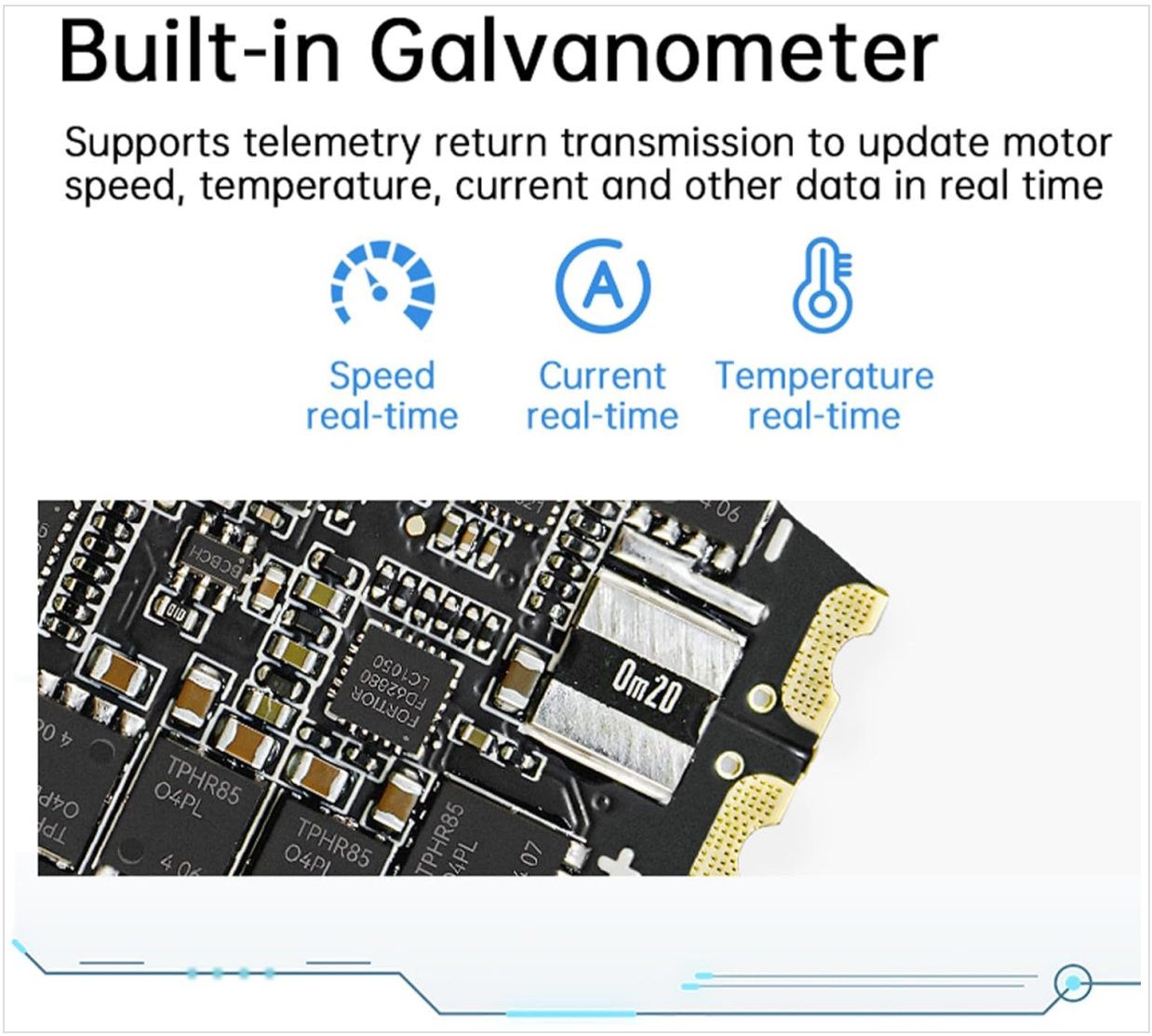

Image: A diagram pointing out key components on the flight controller, including the onboard barometer (BMP280), OSD, 16MB black box for flight data recording, and the ICM-42688-P Gyro for precise posture sensing.

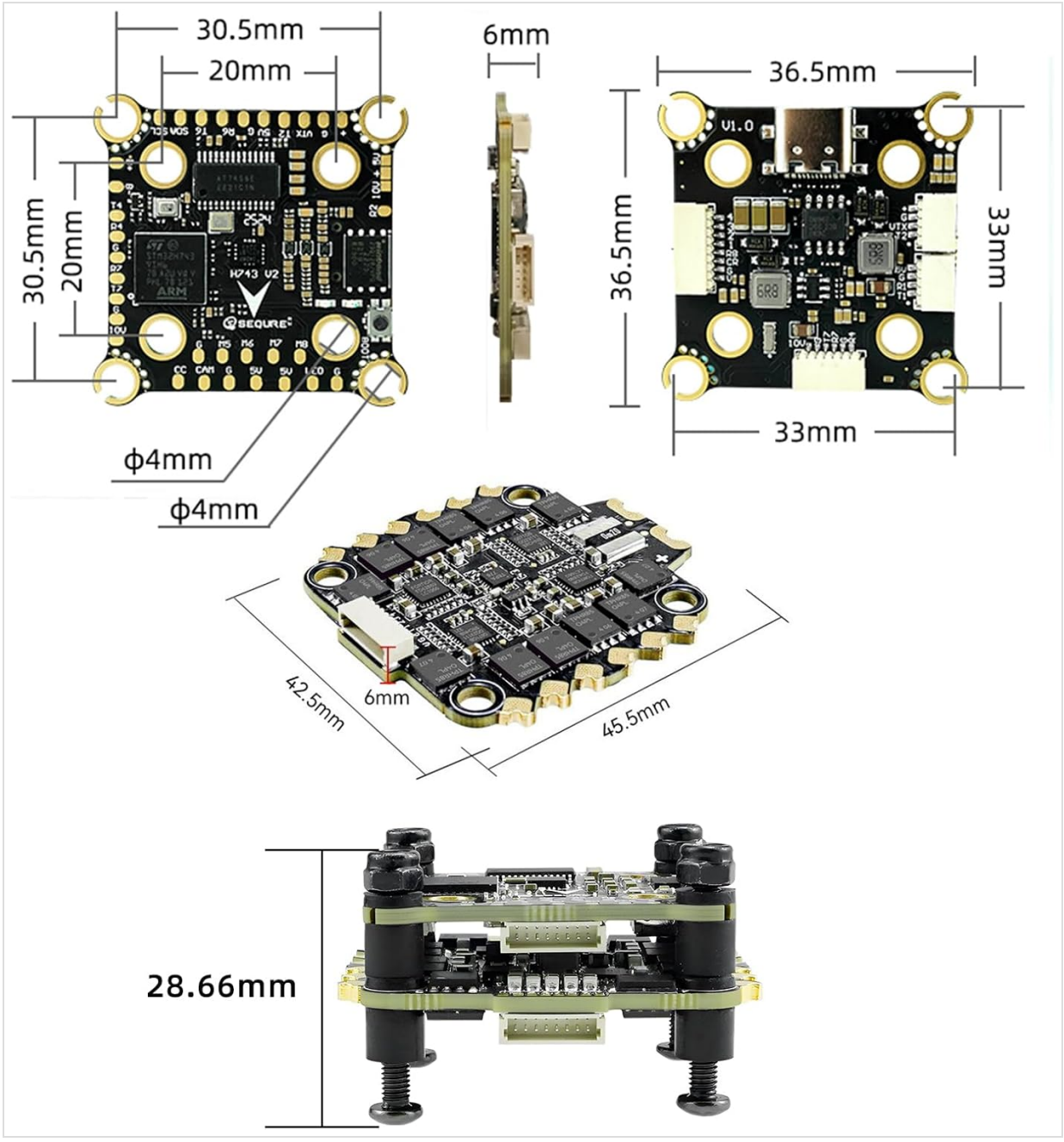

Image: Technical drawing providing detailed dimensions of the SEQURE Flight Controller Stack, including individual board sizes and the overall stack height.

Image: An infographic summarizing the key technical specifications of the SEQURE Flight Controller Stack, such as STM32H743 MCU, ICM-42688-P Gyro, 6 UARTs, 4-8S Lipo input, Dual BEC (5V/2.5A, 10V/2A), 16MB Black Box, BMP280 Barometer, and HD/Analog Image Transmission support.

What's in the Box

- 1 x FC & 4in1 ESC
- 5 x Cable
- 1 x 60mm Length 12095 5V Buzzer
- 10 x M3*8mm Silicone Shock-absorbing Washer (Black)
- 1 x XT60H-M Black Male Connector

Specifications

Feature	Detail
Brand	SEQURE
Model Name	H743 V2 & E70 G2 (AM32)
Color	Black
Connectivity Technology	Radio Frequency
Item Weight	0.1 Kilograms (3.52 ounces)
Control Type	Remote Control
Material	Metal, Plastic
Wireless Communication Technology	Radio Frequency

Feature	Detail
Batteries Included	No
Remote Control Included	No
Optical Sensor Technology	CMOS
Rechargeable Battery Included	No
Manufacturer	SEQURE
Product Dimensions	1.99 x 1.43 x 1.01 inches

Setup and Wiring

Proper wiring is crucial for the safe and correct operation of your flight controller stack. Refer to the diagrams below for detailed connection instructions.

Recommended UART Port Usage

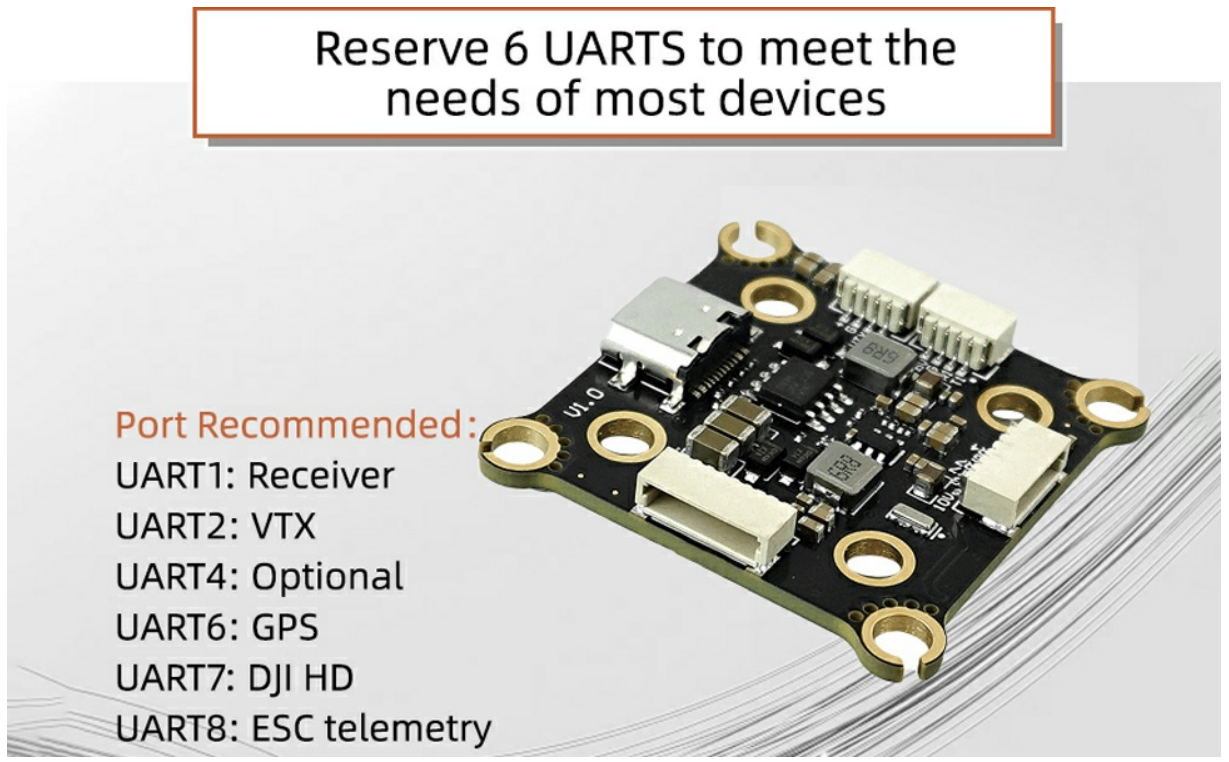

Image: A diagram illustrating the recommended usage for the 6 UART ports on the flight controller, including assignments for Receiver, VTX, Optional, GPS, DJI HD, and ESC telemetry.

- UART1: Receiver
- UART2: VTX
- UART4: Optional
- UART6: GPS
- UART7: DJI HD
- UART8: ESC telemetry

Flight Controller Wiring Diagram

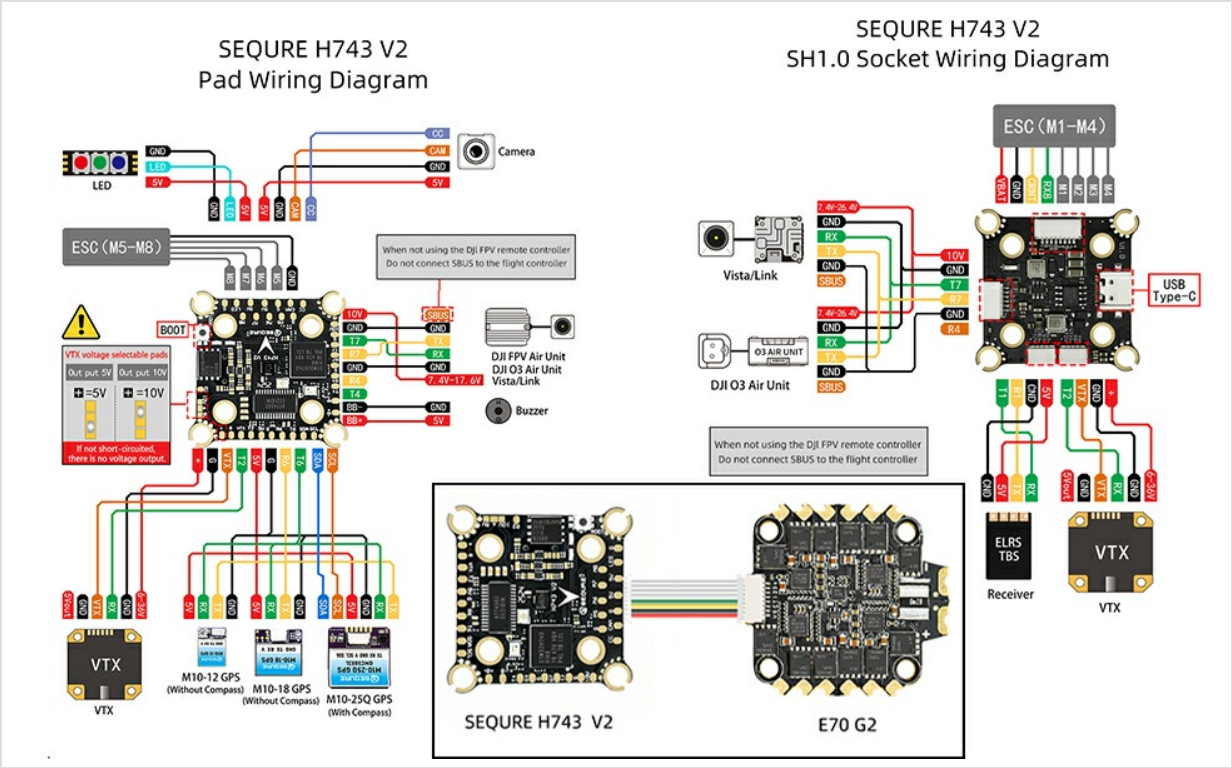

Image: Comprehensive wiring diagrams for the SEQURE H743 V2 Flight Controller, detailing connections for various peripherals via both soldering pads and SH1.0 sockets, including LED, Camera, DJI FPV Air Unit, Buzzer, ELRS, and VTX.

ESC Wiring Diagram

Image: Wiring diagram for the E70 G2 4-in-1 ESC, illustrating connections for motors (M1-M4), battery (2-8S Lipo), and telemetry (TX, CR, VBAT, GND).

Connecting to Mobile Device

Your browser does not support the video tag.

Video: This video demonstrates the process of connecting the flight controller to a mobile device using an OTG adapter and the Speedy Bee app for configuration and monitoring.

Operation

The SEQURE Flight Controller Stack is compatible with Betaflight firmware. For detailed configuration and tuning, please refer to the official Betaflight documentation.

ESC Protocols

The 4-in-1 ESC supports digital protocols DShot600/300/150 and is compatible with Oneshot/MultiShot/PWM protocols. Ensure your flight controller firmware is configured to match the selected ESC protocol.

LED Control

The flight controller supports WS2812 LEDs, which can be controlled via Betaflight firmware for customizable lighting effects, especially useful for night flying.

Maintenance

- Regularly inspect all solder joints and connections for any signs of damage or corrosion.

- Keep the flight controller and ESC clean from dust, dirt, and moisture. Use compressed air or a soft brush for cleaning.
- Ensure proper ventilation to prevent overheating, especially during intensive use.
- Periodically check for firmware updates for both the flight controller and ESC to benefit from performance improvements and bug fixes.

Troubleshooting

If you encounter issues, consider the following common troubleshooting steps:

- **No Power/Intermittent Power:** Check all power connections, including the XT60H-M connector and battery. Verify battery voltage.
- **Motors Not Spinning/Incorrectly:** Ensure ESC calibration is correct. Check motor direction in Betaflight. Verify DShot/Oneshot/MultiShot/PWM protocol settings match. Inspect motor wires for damage.
- **No Telemetry Data:** Confirm galvanometer is properly connected and configured in Betaflight. Check UART settings for telemetry.
- **Flight Instability:** Recalibrate accelerometer and gyroscope in Betaflight. Check for loose components or vibrations. Ensure correct PID tuning.
- **Connection Issues with PC/Mobile:** Ensure correct drivers are installed. Try a different USB cable or OTG adapter. Verify port settings in Betaflight configurator.

Automated Testing Overview

Your browser does not support the video tag.

Video: This video demonstrates an automated software testing process for a flight controller, highlighting how various ports and functions are verified for correct operation. This can be useful for understanding diagnostic procedures.

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Video: This video illustrates an automated testing procedure for an F405 flight controller, demonstrating how the system identifies and reports issues with disconnected ports, ensuring all functionalities are checked.

Safety Information

WARNING: Choking Hazard - Small Parts. Keep out of reach of small children.

Always ensure proper insulation of all electrical connections to prevent short circuits.

Handle with care to avoid electrostatic discharge damage to sensitive electronic components.

Disconnect the battery before performing any maintenance or wiring changes.

Warranty and Support

For warranty information and technical support, please refer to the official SEQURE website or contact your retailer.

Protection plans are available for extended coverage. Please check product listings for details.