

SoloGood F722

SoloGood F722 FPV Flight Controller Stack Instruction Manual

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your SoloGood F722 FPV Flight Controller Stack. Please read this manual thoroughly before use to ensure proper functionality and safety.

2. PRODUCT OVERVIEW

The SoloGood F722 FPV Flight Controller Stack is designed for high-performance FPV freestyle drones, offering robust control and power management. It integrates an F722 flight controller with a 60A 4-in-1 ESC, providing a compact and efficient solution.

Key Features:

- Supports up to 8 motor outputs for X8 drone configurations.
- Integrated 5V/10V dual BEC for stable power delivery.
- Four LED status indicators for monitoring operational status.
- Features an F722 main control chip, onboard OSD chip, barometer, and 16M flash memory black box.
- Large soldering pads for simplified soldering, suitable for beginners.
- Equipped with Toshiba MOS transistors and TVS protective diodes for enhanced durability.
- Supports BlueJay firmware, bidirectional DSHOT, and RPM filtering.

E N J O Y Y O U R F L Y I N G

SOLOGOOD F722

60A 30.5x30.5 Stack

Toshiba MOS transistor
TVS protection tube

Suitable for X8 FPV
8 motor Supports

Large pad design
Welding is simple

60A current output
Realistic, up to 65A



Figure 2.1: SoloGood F722 FPV Flight Controller Stack highlighting key features.

- Easily build X8 drones with high-performance flight control supporting 8 motor outputs. X8 aircraft easy choice!
- Integrated 5V/10V dual BEC, 10VBEC can be controlled by USER1 switch to provide independent power supply for VTX to ensure stable operation, and 10V power supply of VTX can be turned off by remote control when commissioning the aircraft, no need to use fans to reduce the temperature of VTX.
- 4 LED status indicators, respectively show the working status under different states.
- F722 main control chip, on-board OSD chip, barometer and on-board black box chip are available.
- With large pads, beginners can weld perfectly.
- Imported Toshiba MOS tube, high-performance processor and on-board TVS protective tube, can also play freely in complex flight environment!
- Support Bluejay firmware, bidirectional DSHOT, RPM filtering enabled.



Figure 2.2: Assembled SoloGood F722 FPV Flight Controller Stack.

3. SPECIFICATIONS

General:

- Input Voltage: 3-6S Lipo (11V-26V max)
- Installation Hole: 30.5 x 30.5mm, M3
- Weight: 23g (total stack)
- Product Dimensions: 1.52 x 1.52 x 1.52 inches
- Material: Metal

Flight Controller (FC) Specifications:

- Main Control: STM32F722RET6
- Gyroscope: ICM42688P

- Barometer: Support (DPS310)
- OSD: Support (AT7456E)
- BEC Output: 10V/2A, 5V/2A
- UART Ports: 6
- Black Box: Onboard (16M flash memory)
- Supported Motors: M1-M8
- Firmware Name: BETAFLIGHT: SOLOGOODF722
- Installation Hole: 30x30mm (4mm aperture)
- Flight Control Size: 38.5x38.5mm
- Weight: 8.1 grams (FC only)
- LED Status Indicators: Blue (gyroscope), Green (3V3), Red (5V BEC), White (10V BEC)
- DJI/Vista Support: 6-pin connector

Electronic Speed Controller (ESC) Specifications:

- Firmware: BLHELI-S: J-H-30-16.7
- Continuous Current: 60A
- Maximum Current: 65A
- ESC/Motor Protocol: DSHOT300/600
- Input Voltage: 3-6S
- Galvanometer: Yes
- TVS Diode Protection: Yes
- External Capacitor: 1000uF high-frequency low resistance capacitor (included)
- MOS: High performance MOS
- Installation Hole: 30.5x30.5mm (4mm aperture)
- Size: 41.5mm x 42mm
- Weight: 15g (ESC only)

STACK

HIGH-END CONFIGURATION

Better flight for your FPV

Better flight for your FPV

Enjoy your flight

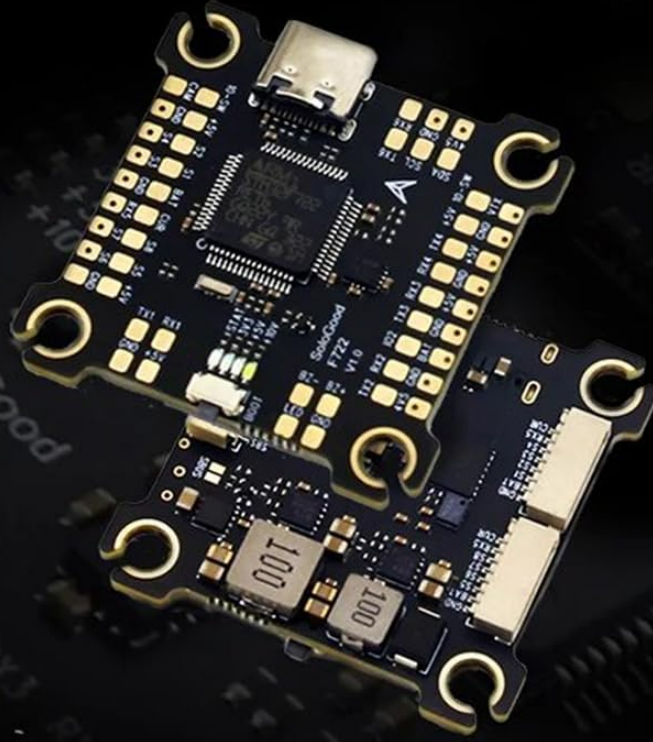


Figure 3.1: Individual Flight Controller and 4-in-1 ESC boards.

STACK

HIGH QUALITY ESC

Easily apply your FPV

Enjoy your flight

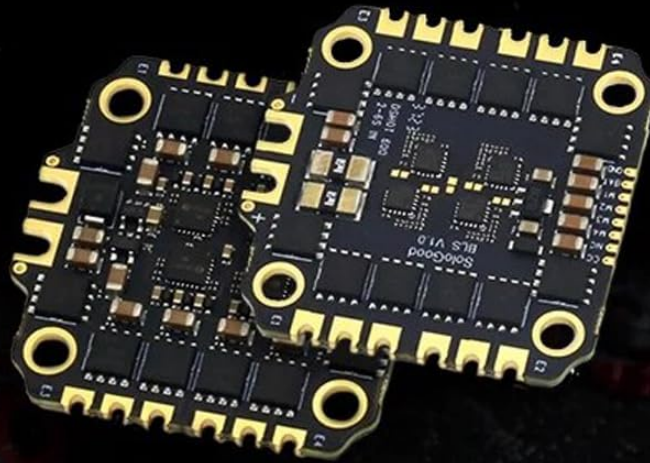


Figure 3.2: Detailed view of the 4-in-1 ESC board.

4. SETUP AND INSTALLATION

Careful wiring and initial configuration are crucial for the safe and optimal performance of your FPV drone. Always ensure power is disconnected before making any physical connections.

4.1 Wiring Diagrams

Refer to the following diagrams for proper connection of the Flight Controller and ESC to your drone components.

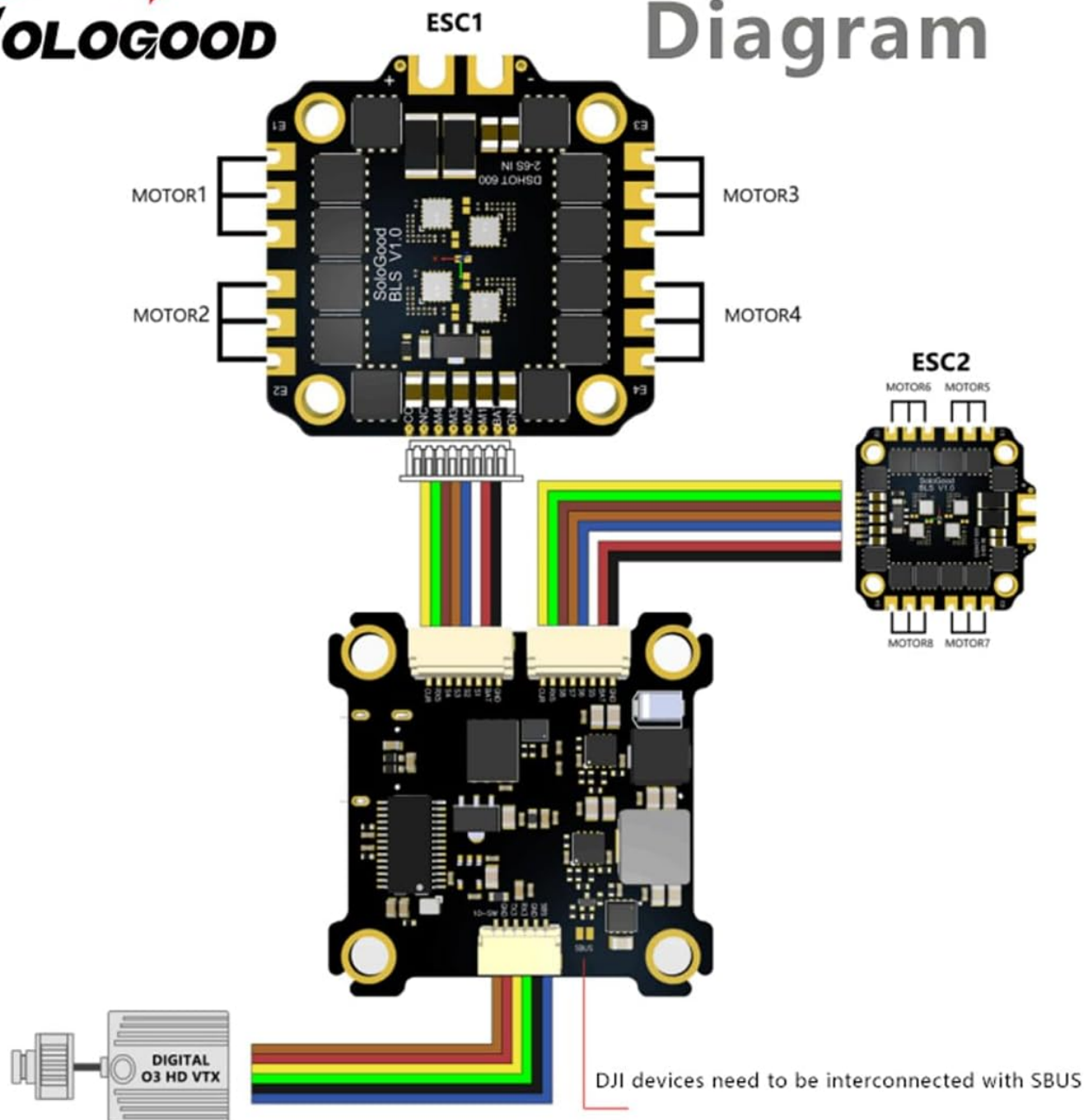


Figure 4.1: ESC Wiring Diagram. This diagram illustrates how to connect motors (M1-M8) to the 4-in-1 ESC.

FC Diagram

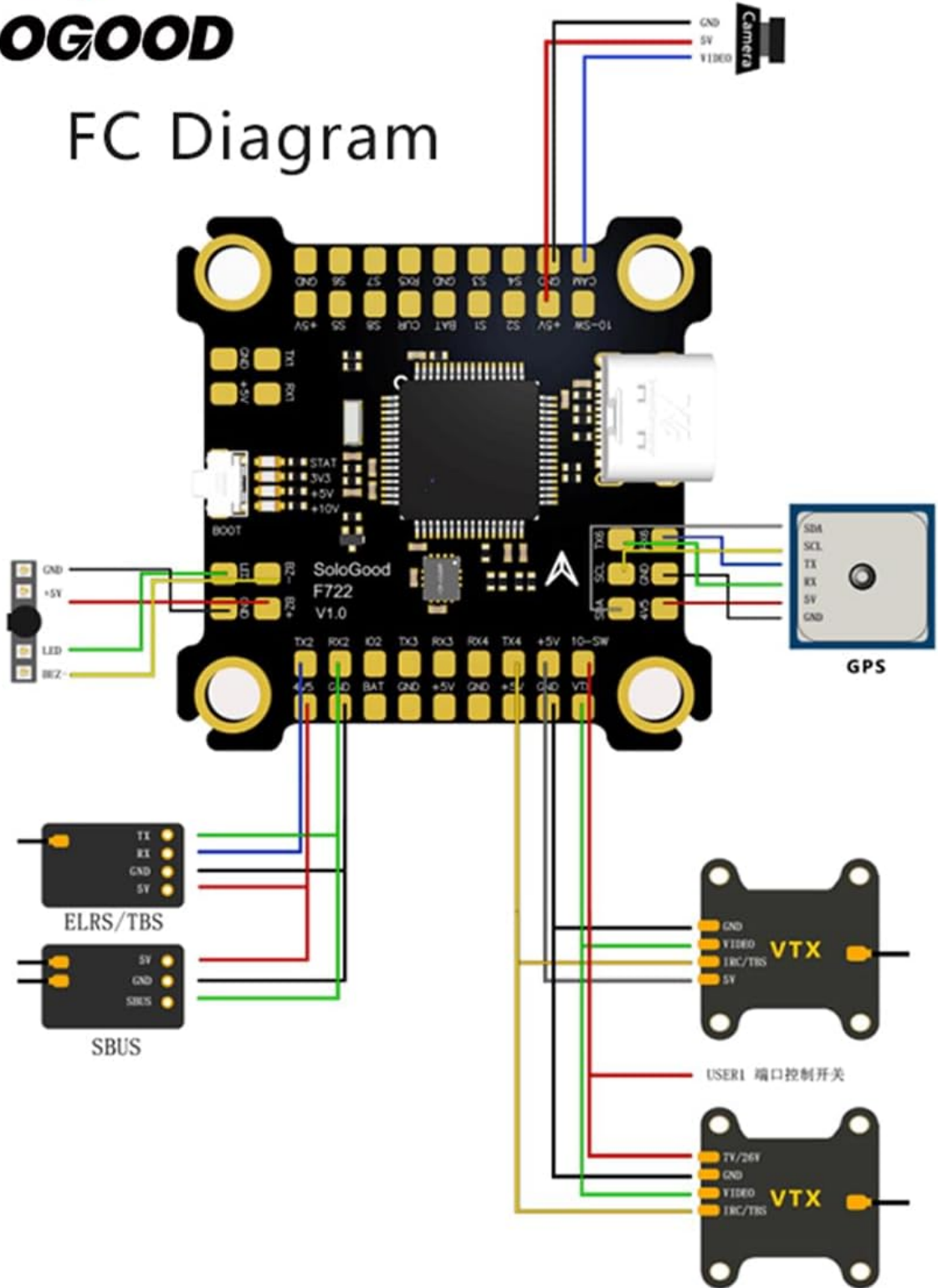


Figure 4.2: Flight Controller Wiring Diagram. This diagram shows connections for camera, VTX, GPS, ELRS/TBS receiver, and other peripherals to the F722 Flight Controller.

4.2 Initial Configuration

The SoloGood F722 Flight Controller uses Betaflight firmware. It is recommended to use the manufacturer's default CLI dump settings as a baseline. Only modify necessary parameters such as UART assignments (e.g., Rx UART2, DJI UART4, GPS UART6), Failsafe, Modes, OSD, Receiver, and GPS tabs. Avoid extensive changes in the Configuration tab unless you are experienced, as this may lead to unexpected behavior or power issues. For ESCs, the firmware is BLHELI-S. If flashing, consider BlueJay 18 for bidirectional support in the Motors tab, as higher versions may cause issues. Ensure soldering pads are adequately heated and fluxed for secure connections.

4.3 Connecting to Mobile Device

The flight controller can be connected to a mobile device for configuration using an OTG adapter and a compatible application like Speedy Bee.

Video 4.1: Instructions on how to connect the FPV Flight Controller to a mobile device using an OTG adapter for configuration.

4.4 Automated Testing

Automated testing procedures can verify the functionality of the flight controller's ports and components. This involves connecting the flight controller to a test tool and running diagnostic software.

Video 4.2: Demonstration of the Radiolink F722 Betaflight Flight Controller automated testing process, showing normal operation and detection of port abnormalities.

Video 4.3: Overview of the DYS F7 F722 Flight Controller, demonstrating its features and basic functionality.

5. OPERATING INSTRUCTIONS

Once installed and configured, the SoloGood F722 FPV Flight Controller Stack is ready for flight. Ensure all pre-flight checks are completed, including battery connection, propeller security, and radio calibration.

5.1 Flight Protocols

The ESC supports DSHOT300/600 protocols, providing precise motor control and communication with the flight controller.

5.2 Flight Performance

The F722 flight controller, combined with the 60A 4-in-1 ESC, delivers responsive and stable flight characteristics for FPV freestyle applications.

Video 5.1: Flight demonstration of a drone equipped with the Radiolink F722 Betaflight Flight Controller, showcasing its performance in various maneuvers.

6. MAINTENANCE

Regular maintenance ensures the longevity and reliability of your FPV flight controller stack.

- **Visual Inspection:** Periodically check for any loose wires, damaged components, or signs of overheating.
- **Cleaning:** Keep the boards free from dust, dirt, and debris. Use compressed air or a soft brush. Avoid liquids.
- **Firmware Updates:** Regularly check for official firmware updates for Betaflight and BLHELI-S to benefit from performance improvements and bug fixes. Always back up your configuration before updating.
- **Soldering Joints:** Inspect soldering joints for cracks or cold solder. Re-solder if necessary, ensuring proper heat and flux application.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with the SoloGood F722 FPV Flight Controller Stack.

7.1 Flight Instability or Throttle Runaways

- **CLI Dump Files:** If experiencing instability, it is often best to revert to the manufacturer's default CLI dump settings. Custom CLI dumps from other setups may contain crucial settings that conflict with this specific hardware.
- **PID Values:** While PID tuning is common, significant changes to PID filters or power settings in the Configuration tab can lead to runaways or flyaways. Adjust PID values cautiously, focusing on the 12 primary PID values and rates.

7.2 Component Damage After Crash

- **Capacitor Functionality:** Ensure the external capacitor (1000uF high-frequency low resistance) is properly connected and functioning. A faulty or improperly connected capacitor can lead to voltage spikes that damage sensitive components like the STM32 chip during impacts.
- **Board Quality:** While the ESC is generally robust, the flight controller board's resilience to crashes can vary. Inspect for physical damage to the board or components after any significant impact.

7.3 Soldering Difficulties

- **Solder Pad Adhesion:** Some users report that the solder pads on the ESC may require higher heat and ample flux for proper solder adhesion. Ensure your soldering iron is at an appropriate temperature and use flux to facilitate a strong bond.

7.4 General Connectivity Issues

- **Port Damage:** If a port is suspected to be damaged, automated testing software can help identify the specific abnormal port.
- **Wiring:** Double-check all wiring connections against the provided diagrams (Figures 4.1 and 4.2) to ensure correct polarity and pin assignment.

8. WARRANTY AND SUPPORT

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

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ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question