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› KK 2.1.5 Flight Control Board User Manual

Ldabrye KK 2.1.5

KK 2.1.5 Flight Control Board User Manual

Model: KK 2.1.5

INTRODUCTION

The KK 2.1.5 Flight Control Board is an advanced flight controller designed for various multi-rotor aircraft, including VTOL (Vertical Take-Off and Landing) and V-tail configurations. It provides exceptional flight experience with support for both self-leveling and acrobatic flights, ensuring stability and flexibility across different flight scenarios. This manual provides essential information for the proper setup, operation, and maintenance of your flight control board.



Image: The KK 2.1.5 Flight Control Board shown with its included accessories, including connection cables and a protective case.

Safety Information

Please read and understand all safety warnings and precautions before using the KK 2.1.5 Flight Control Board. Improper use can lead to damage to the product, property, or personal injury.

- Always ensure correct polarity when connecting power to the flight control board. Incorrect connections can cause irreversible damage.
- Operate your aircraft in open areas, away from people, obstacles, and power lines.
- Regularly inspect all wiring and connections for signs of wear or damage.
- Keep the flight control board away from moisture, extreme temperatures, and direct sunlight.
- Do not attempt to modify the firmware or hardware unless you are an experienced user and understand the risks involved.
- Disconnect power from the aircraft before performing any maintenance or adjustments.

PACKAGE CONTENTS

Verify that all items listed below are present in your package:

- 1x KK 2.1.5 Flight Control Board
- Connection Cables (various types for receiver and ESC connections)
- Protective Case (for the flight board)

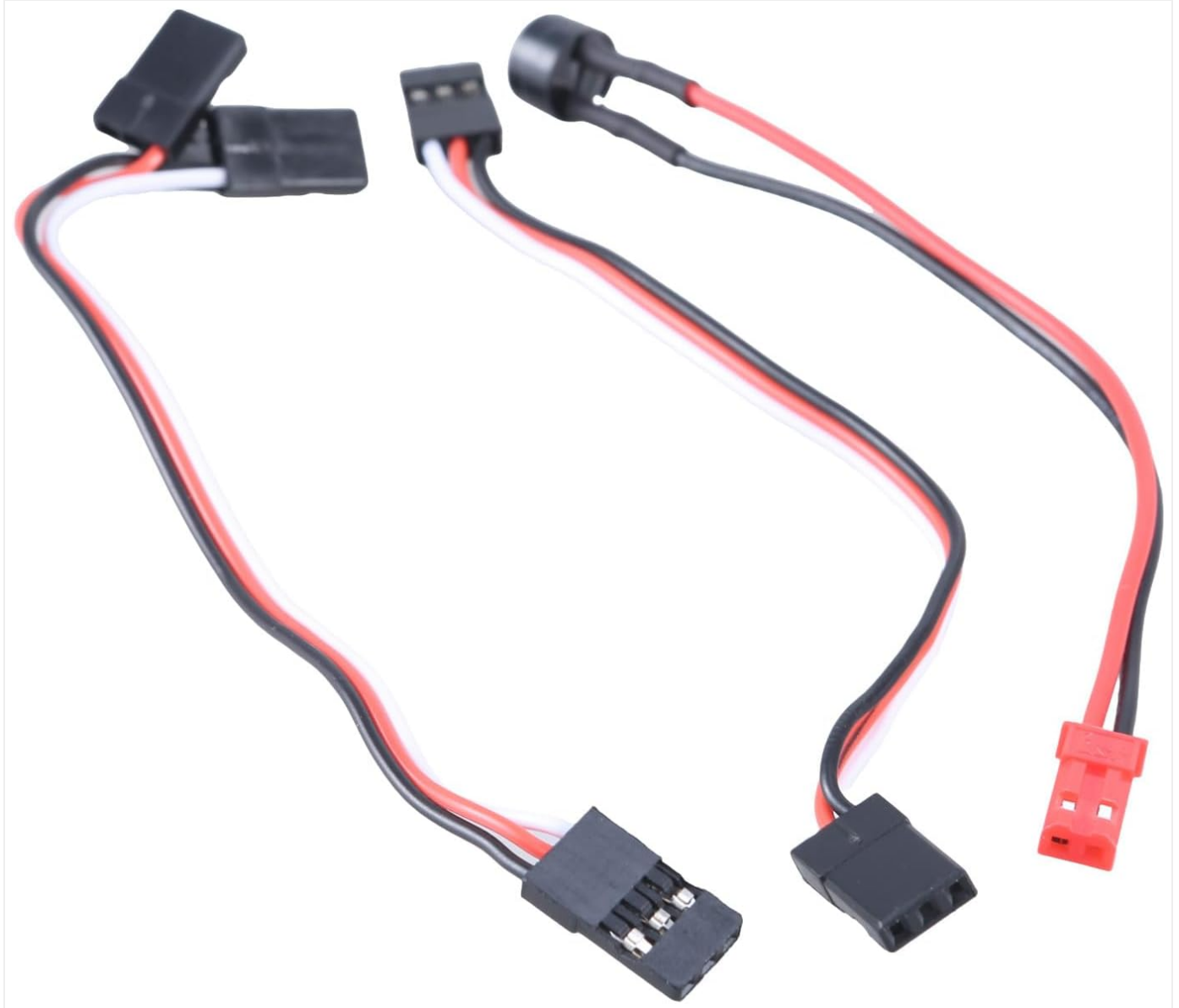


Image: The KK 2.1.5 Flight Control Board alongside its accompanying connection cables.

SETUP AND INSTALLATION

Follow these steps for proper installation of the KK 2.1.5 Flight Control Board into your aircraft.

1. Mounting the Flight Board

1. Mount the flight control board securely to the center of your aircraft frame using vibration-dampening foam or standoffs.
2. Ensure the board's orientation matches the direction indicated in the firmware settings (usually an arrow pointing forward).

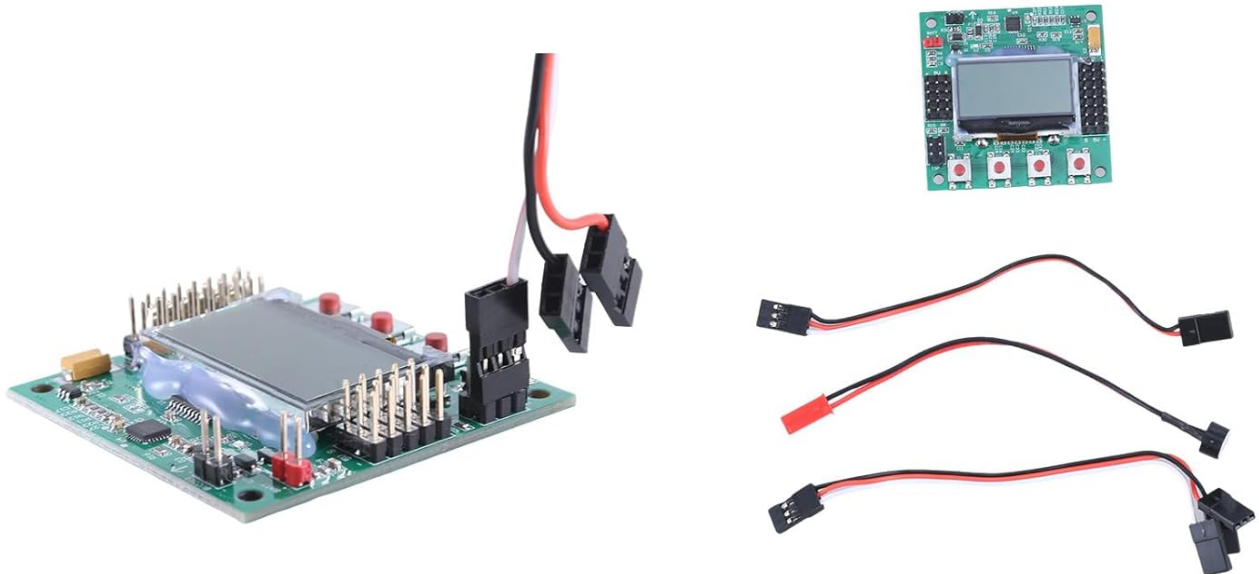


Image: An example of the KK 2.1.5 Flight Control Board integrated into a multi-rotor drone assembly, showing its central placement.

2. Connecting the Receiver

1. Connect your RC receiver to the designated input pins on the flight control board. The board supports 5 channels (Aileron, Elevator, Throttle, Rudder, Aux).
2. Use the provided servo cables to make these connections. Ensure each channel is connected to its corresponding pin.

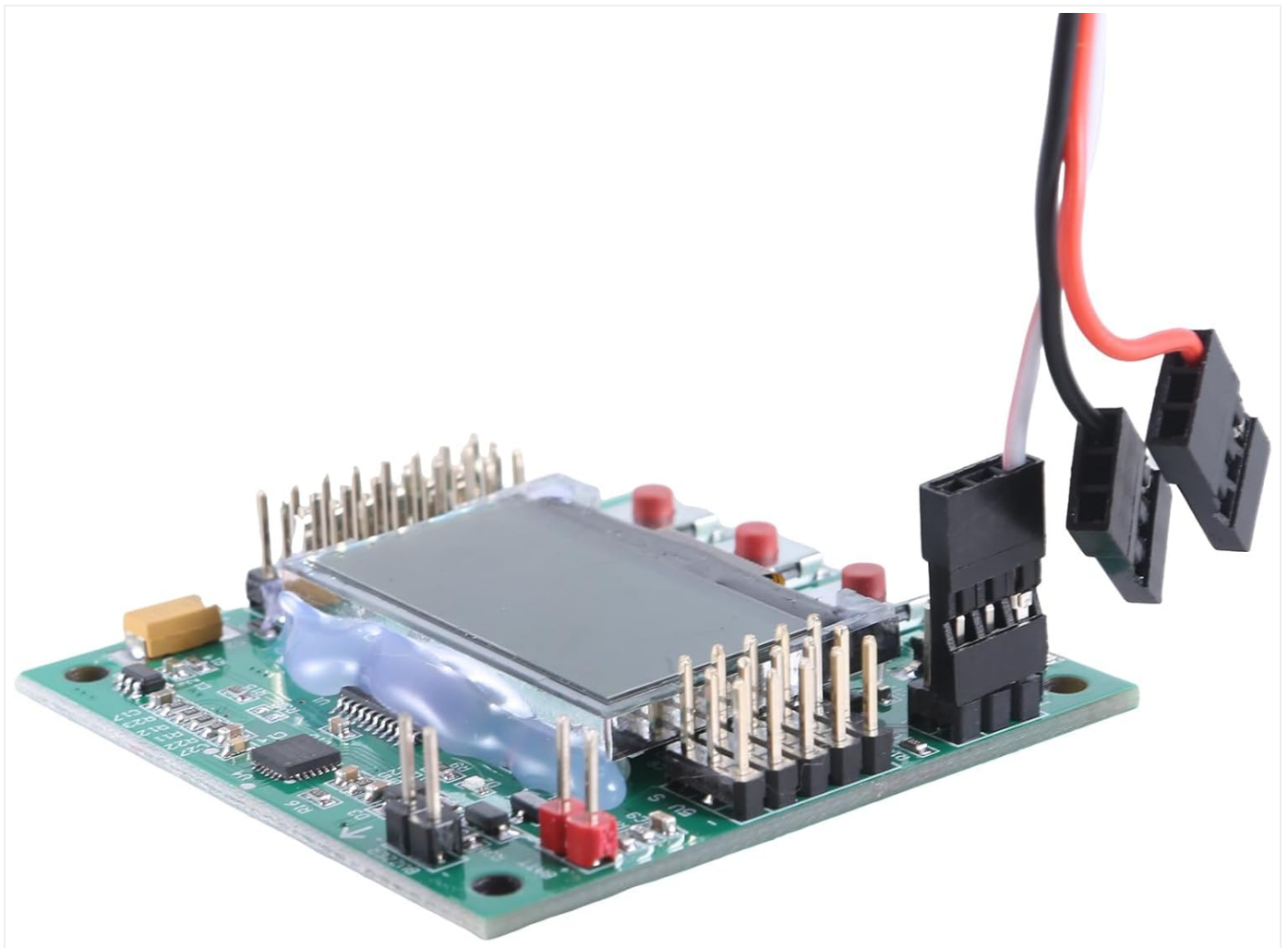


Image: The KK 2.1.5 Flight Control Board with several connection cables plugged into its pin headers, demonstrating typical wiring.

3. Connecting ESCs/Motors

1. Connect your Electronic Speed Controllers (ESCs) to the output pins of the flight control board. The board has multiple outputs for motors.
2. Refer to your aircraft's configuration (e.g., quadcopter, hexacopter) for the correct motor order and direction.
3. The board sends signals at 1520us to the electrical control.

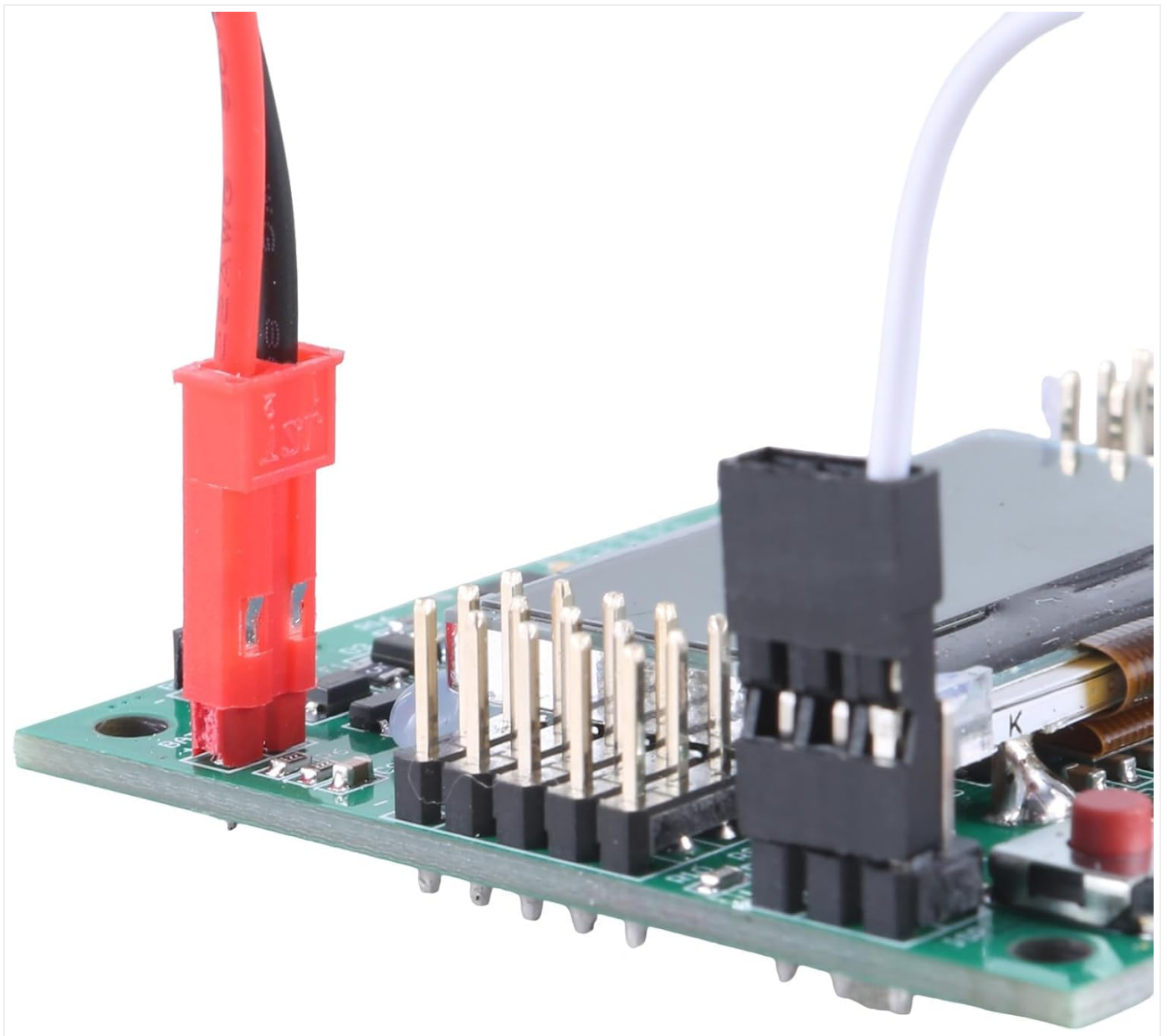


Image: A close-up view of the KK 2.1.5 Flight Control Board, highlighting the connection point for a power cable or signal cable.

4. Power Supply

1. The flight control board operates on an input voltage of 4.8-6.0V, typically supplied from the receiver or a dedicated BEC.
2. Ensure your power source provides stable voltage within this range.

OPERATING THE FLIGHT CONTROL BOARD

The KK 2.1.5 Flight Control Board features an integrated LCD screen and buttons for easy configuration and monitoring without needing a computer.

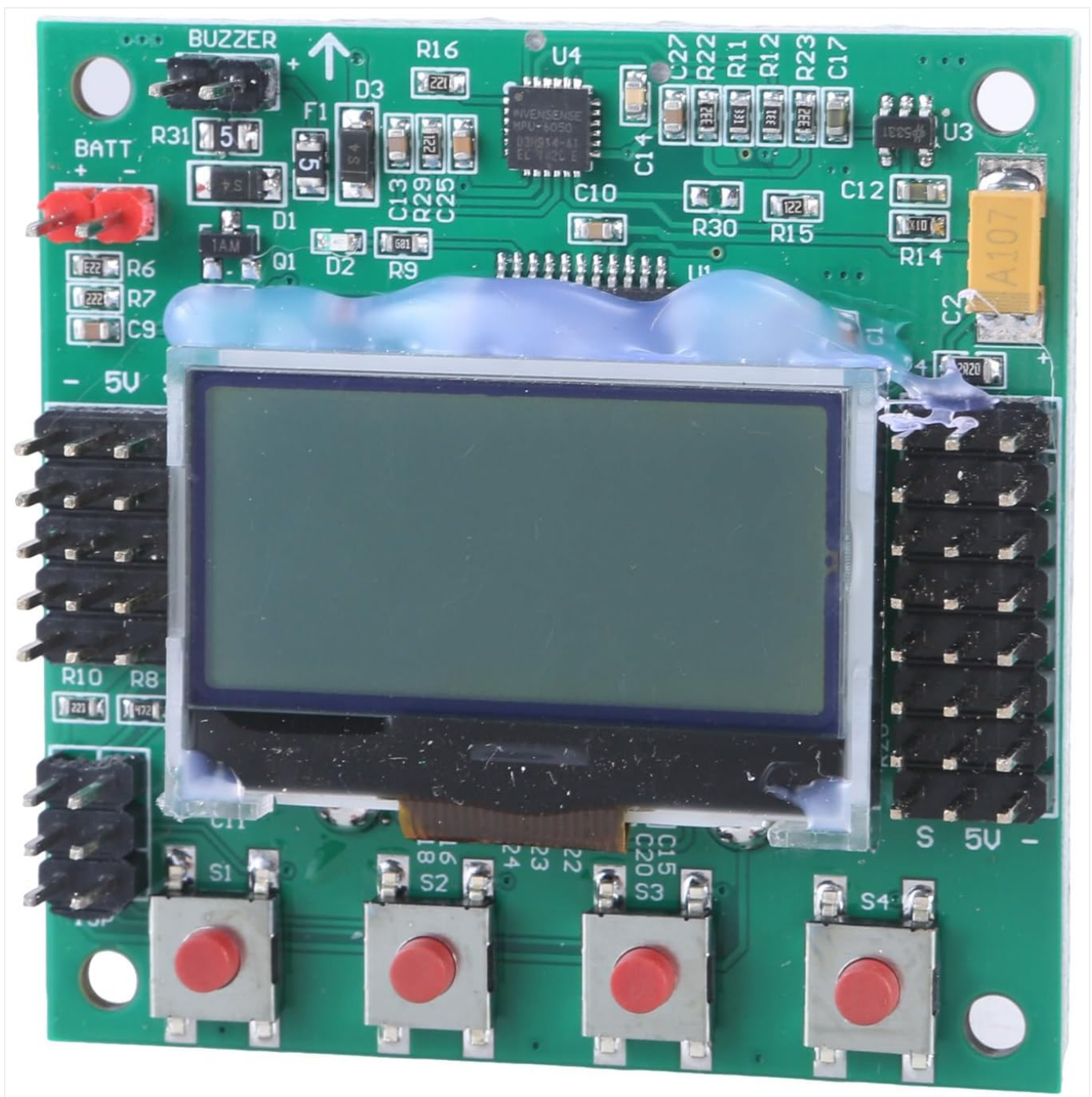


Image: A clear top-down view of the KK 2.1.5 Flight Control Board, prominently displaying its LCD screen and control buttons for direct configuration.

Initial Power-Up and Calibration

- Upon first power-up, the LCD screen will display the firmware version (V119S1PRO).
- Navigate through the menu using the onboard buttons to perform sensor calibration (accelerometer and gyroscope). This is crucial for stable flight.
- Ensure the board is on a level surface during calibration.

Flight Modes and Settings

- The board supports self-balancing functions, which can be enabled or disabled via the menu.
- Adjust PID (Proportional-Integral-Derivative) settings for fine-tuning flight characteristics to match your aircraft and flying style.
- Configure motor layout (e.g., X-quad, +quad, V-tail) through the menu.

MAINTENANCE

Proper maintenance ensures the longevity and reliable performance of your KK 2.1.5 Flight Control Board.

- **Cleaning:** Gently clean the board with a soft, dry brush or compressed air to remove dust and debris. Do not use liquids.
- **Inspection:** Periodically check all solder joints and connections for any signs of corrosion, looseness, or damage.
- **Storage:** When not in use, store the flight control board in its protective case in a cool, dry place, away from static electricity.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates. Follow update instructions carefully to avoid bricking the board.

TROUBLESHOOTING

This section addresses common issues you might encounter with the KK 2.1.5 Flight Control Board.

Problem	Possible Cause	Solution
Board does not power on.	Incorrect power connection, faulty power source, damaged board.	Verify input voltage (4.8-6.0V) and polarity. Test power source. Inspect board for visible damage.
Aircraft unstable or drifts.	Improper calibration, incorrect mounting, vibration, incorrect PID settings.	Recalibrate sensors on a level surface. Ensure secure and vibration-dampened mounting. Adjust PID values.
Motors not spinning or spinning incorrectly.	Incorrect ESC connections, ESC calibration issues, motor direction.	Check ESC wiring to the board. Calibrate ESCs. Verify motor direction and adjust if necessary.
No display on LCD screen.	Loose LCD connection, power issue.	Ensure LCD ribbon cable is securely seated. Check board power.

SPECIFICATIONS

Technical specifications for the KK 2.1.5 Flight Control Board:

- **Gyroscope:** InvenSense Inc.
- **Accelerometer:** Analog Devices Inc.
- **Self-balancing function:** Yes
- **Input voltage:** 4.8-6.0V (from receiver)
- **Receiver Channels:** 1520us (5 channels in total)
- **Signal sent to electrical control:** 1520us
- **Firmware version:** V119S1PRO
- **Material:** PCB

WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the manufacturer's official website or contact their customer service. Keep your proof of purchase for warranty claims.

Manufacturer: Ldabrye

