

LOMEDRETME F4Dc F4 Flight Control Board

LOMEDRETME F4Dc F4 Flight Control Board User Manual

Model: F4Dc F4 Flight Control Board

1. PRODUCT OVERVIEW

The LOMEDRETME F4Dc F4 Flight Control Board is a high-performance electronic component designed for FPV racing drones and quadcopters. It integrates essential flight control features, including a barometer, and supports popular firmware like Betaflight and iNav, providing precise control and stable flight characteristics.

This flight controller is engineered for reliability and ease of integration into various drone builds, offering a robust solution for both enthusiasts and experienced pilots.



Image 1.1: The LOMEDRETME F4Dc F4 Flight Control Board. This image displays the compact design of the flight controller, highlighting its various connection pads and integrated components.

2. SAFETY INSTRUCTIONS

Before operating or installing the F4Dc F4 Flight Control Board, please read and understand the following safety guidelines to prevent injury or damage to the product and surrounding equipment:

- **Power Source:** Always ensure the power source connected to the flight controller matches the specified voltage range. Incorrect voltage can cause irreversible damage.
- **Soldering:** Exercise caution when soldering. Use appropriate tools and ensure proper ventilation. Avoid short circuits.
- **Static Electricity:** Electronic components are sensitive to static discharge. Handle the board in a static-safe environment or use anti-static precautions.
- **Firmware Flashing:** Follow firmware flashing instructions carefully. Incorrect procedures can brick the device.
- **Propellers:** Remove propellers from motors before performing any setup, testing, or

maintenance to prevent accidental injury.

- **Environment:** Do not expose the flight controller to moisture, extreme temperatures, or corrosive substances.

3. SETUP AND INSTALLATION

3.1. Package Contents

Verify that all components are present in your package:

- LOMEDRETME F4Dc F4 Flight Control Board
- Connection wires (if included)
- Mounting hardware (if included)

3.2. Physical Installation

1. **Mounting:** Securely mount the F4Dc F4 Flight Control Board to your drone frame using appropriate standoffs and screws. Ensure it is oriented correctly as per your drone's design and firmware requirements.
2. **Motor Connections:** Connect the motor signal wires from your Electronic Speed Controllers (ESCs) to the corresponding motor output pads on the flight controller. Refer to the wiring diagram for your specific ESCs and motors.
3. **Power Connection:** Connect the main power input (VBAT) from your Power Distribution Board (PDB) or ESCs to the designated power pads on the flight controller. Double-check polarity.
4. **Receiver Connection:** Connect your RC receiver to the appropriate UART port on the flight controller. Ensure the correct protocol (e.g., SBUS, IBUS, PPM, CRSF) is selected in the firmware configuration.
5. **Peripheral Connections:** Connect any additional peripherals such as VTX (Video Transmitter), Camera, GPS, or LED strips to their respective pads/UARTs.

3.3. Firmware Flashing and Configuration

The F4Dc F4 Flight Control Board supports Betaflight and iNav firmware. Follow these general steps:

1. **Install Drivers:** Download and install the necessary USB VCP drivers for your flight controller.
2. **Connect to PC:** Connect the flight controller to your computer using a USB cable.
3. **Open Configurator:** Launch the Betaflight Configurator or iNav Configurator software.
4. **Flash Firmware:** Select the correct target for your F4Dc board (e.g., F405, F411, etc., refer to product specifications or vendor information) and flash the latest stable firmware.
5. **Initial Setup:** After flashing, connect to the configurator and perform initial setup, including accelerometer calibration, port configuration, receiver setup, and ESC protocol selection (e.g., DShot).
6. **PID Tuning:** Adjust PID settings and rates according to your drone's characteristics and flying style.

4. OPERATING INSTRUCTIONS

Once the flight controller is installed and configured, follow these steps for safe operation:

- **Pre-Flight Check:** Always perform a visual inspection of your drone before each flight. Check

for loose wires, damaged propellers, and secure connections.

- **Battery Connection:** Connect the flight battery only when the drone is on a stable, level surface and away from people or obstacles.
- **Arming:** Arm the motors only when you are ready for flight and have confirmed the area is clear. Be aware of your arming switch position.
- **Flight Modes:** Understand and utilize various flight modes (e.g., Angle, Acro, Horizon, Barometer Hold) available in your firmware for different flying experiences.
- **Disarming:** Disarm the motors immediately after landing or in an emergency.
- **Post-Flight:** Disconnect the battery after each flight. Review flight logs if necessary for performance analysis.

5. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your F4Dc F4 Flight Control Board:

- **Regular Inspection:** Periodically inspect the board for any signs of physical damage, corrosion, or loose solder joints.
- **Cleaning:** Gently clean the board with a soft brush or compressed air to remove dust and debris. Avoid using liquids directly on the board.
- **Firmware Updates:** Keep your firmware updated to the latest stable version to benefit from bug fixes and new features. Back up your configuration before updating.
- **Storage:** When not in use for extended periods, store the flight controller in an anti-static bag in a dry, cool environment.

6. TROUBLESHOOTING

This section addresses common issues you might encounter:

Problem	Possible Cause	Solution
Flight controller not recognized by PC	Missing or incorrect USB drivers; faulty USB cable; incorrect DFU mode.	Install correct VCP drivers. Try a different USB cable/port. Ensure the board is in DFU mode for flashing.
Motors not arming	Safety features preventing arming (e.g., low battery, no receiver signal, accelerometer not calibrated, DShot beacon active).	Check battery voltage, receiver connection, calibrate accelerometer, disable DShot beacon if active. Review Betaflight/iNav OSD messages for arming blockers.
Unstable flight / Drifting	Incorrect PID tuning; unbalanced propellers; motor/ESC issues; accelerometer not calibrated.	Recalibrate accelerometer. Check propeller balance and condition. Adjust PID settings. Inspect motors and ESCs.
No video signal from FPV camera	Incorrect wiring between camera, VTX, and flight controller; VTX not powered; channel mismatch.	Verify all FPV wiring. Ensure VTX is powered and on the correct channel. Check OSD settings.

7. SPECIFICATIONS

Key technical specifications for the LOMEDRETME F4Dc F4 Flight Control Board:

- **Model:** F4Dc F4 Flight Control Board
- **Processor:** STM32F4xx (specific F4 model may vary, refer to product packaging)
- **IMU:** Integrated Gyro/Accelerometer
- **Barometer:** Yes, integrated for altitude hold capabilities.
- **Firmware Support:** Betaflight, iNav
- **Input Voltage:** Typically 2-6S LiPo (verify specific product details)
- **OSD:** Integrated Betaflight OSD
- **UARTs:** Multiple UARTs for peripheral connections (e.g., Receiver, VTX, GPS)
- **Dimensions:** Compact design suitable for various drone frames (specific dimensions may vary)
- **Weight:** Lightweight for minimal impact on flight performance
- **Date First Available:** June 20, 2025

8. WARRANTY AND SUPPORT

8.1. Warranty Information

LOMEDRETME products are manufactured with high-quality components and undergo rigorous testing. This product comes with a standard manufacturer's warranty against defects in materials and workmanship under normal use. The warranty period typically covers [*Insert Warranty Period, e.g., 30 days, 90 days, 1 year*] from the date of purchase.

The warranty does not cover damage caused by:

- Improper installation or wiring.
- Over-voltage or incorrect power supply.
- Physical damage, crashes, or misuse.
- Unauthorized modifications or repairs.
- Exposure to moisture, extreme temperatures, or corrosive environments.

Please retain your proof of purchase for warranty claims.

8.2. Customer Support

For technical assistance, troubleshooting, or warranty inquiries, please contact LOMEDRETME customer support through the retailer where the product was purchased or visit the official LOMEDRETME website for contact information.

Our knowledgeable team is available to answer any questions or concerns you may have regarding your F4Dc F4 Flight Control Board.

